

T10/06-201r1 SAS-2 SMP CONFIGURE PHY ZONE function.

To: T10 Technical Committee
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 Date: 24 April 2006
 Subject: 06-201r1 SAS-2 SMP CONFIGURE PHY ZONE functions

Revision Information

- Revision 0 : Proposal extracted from 06-019r5 SAS-2 Zoning proposal.
- **Revision 1 : Clarification of descriptions and added revised the PHY ZONE CONFIGURATION DESCRIPTOR to align with the DISCOVERY fields. Added reference tables for functions.**

Referenced Documents

sas2r03a Serial Attached SCSI – 2 (SAS-2) revision 3
 06-019r5 SAS-2 Zoning (Tim Symons, PMC-Sierra)

Overview

SMP CONFIGURE PHY ZONE is a function that allows any management device with access permission to zone group 2 to **change** the zoning parameters of a zoning phy.

 [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
94h	CONFIGURE PHY ZONE	Change phy entries within a zone route table	10.4.3.16

10.4.3.2 SMP function response frame format

Table 197 – FUNCTION RESULT field

Code	Name	SMP function(s)	Description
21h	INDEXED STARTING PHY DOES NOT EXIST	CONFIGURE PHY ZONE	The phy specified by the STARTING PHY INDEX field in the SMP request frame does not exist (e.g., the value is not within the range of zero to the value of the NUMBER OF PHYS field reported in the REPORT GENERAL function).

10.4.3.16 CONFIGURE PHY ZONE function

The CONFIGURE PHY ZONE function sets the zoning attributes for phys in a zoning expander device. This function shall be supported by all zoning devices. A CONFIGURE PHY ZONE request shall only be executed if the request is originated by a device with permission to access

zone group 2. In all other cases the FUNCTION RESULT field shall be set to SMP ZONE VIOLATION.

When a CONFIGURE PHY ZONE request causes a change to an expander phy configuration then the zoning expander device shall;

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

Table 1 defines the CONFIGURE PHY ZONE request format.

Table 1 – CONFIGURE PHY ZONE request

Byte/Bit	7	6	5	4	3	2	1	0
0	SMP FRAME TYPE (40h)							
1	FUNCTION (94h)							
2	Reserved							
3	REQUEST LENGTH ((n - 7) / 4)							
4	Reserved							
5								
6	STARTING PHY INDEX							
7	NUMBER OF ZONE PHY ENTRIES							
Phy zone configuration descriptor list								
8	Phy zone configuration descriptor (first) (see Table 2)							
11								
...	...							
n - 7	Phy zone configuration descriptor (last) (see Table 2)							
n - 4								
n - 3	(MSB)	CRC						
n								(LSB)

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

The FUNCTION field shall be set to 94h.

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

The STARTING PHY INDEX field specifies the first phy to be configured by the CONFIGURE PHY ZONE request. Each subsequent phy zone configuration descriptor is applied to a phy referenced incrementally from the phy indexed in this field. If the value in this field exceeds the number of phys in the device then the FUNCTION RESULT field shall be set to SMP INDEXED STARTING PHY DOES NOT EXIST.

The NUMBER OF ZONE PHY DESCRIPTORS field specifies the number of phy zone configuration descriptors in the request.

Each phy zone configuration descriptor is 4 bytes long and follows the format in Table 2 .

Table 2 - phy zone configuration descriptor

Byte\Bit	7	6	5	4	3	2	1	0
0	Reserved				ZONE ADDRESS RESOLVED	ZONE GROUP PERSISTENT	ZONE PARTICIPATING	ZONE ENABLED
1	Reserved				ZONE PROXY PRIORITY			
2	Reserved							
3	ZONE GROUP							

The ZONE ADDRESS RESOLVED bit is defined in 10.4.3.5.

The ZONE GROUP PERSISTENT bit is defined in 10.4.3.5.

The ZONE PARTICIPATING bit is defined in 10.4.3.5.

The ZONING ENABLED bit is defined in 10.4.3.5.

The ZONE PROXY PRIORITY field is defined in section x.x.x.x

The ZONE GROUP field contains the value of the ZONE GROUP field in the zone phy information (see 4.8.3.1). Zone group values between 128 and 255, inclusive, are reserved.

The CRC field is defined in 10.4.3.2.

Table 3 defines the response format.

Table 3 – CONFIGURE PHY ZONE response

Byte\Bit	7	6	5	4	3	2	1	0	
0	SMP FRAME TYPE (41h)								
1	FUNCTION (94h)								
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 94h.

The FUNCTION RESULT field shall contain SMP FUNCTION ACCEPTED if the request is originated by a device with access permission to zone group 2. If the request is originated by a device that does not have access permission to zone group 2 then the FUNCTION RESULT field shall contain SMP ZONE VIOLATION.

In all other cases the FUNCTION RESULT field shall be set to SMP FUNCTION FAILED.

The RESPONSE LENGTH field shall be set to 00h.

The CRC field is defined in 10.4.3.2.