

T10/06-202r0 SAS-2 SMP CONFIGURE ZONE PERMISSION function.

Date: 18 April 2006
To: T10 Technical Committee
From: Tim Symons
Subject: 06-202r0 SMP CONFIGURE ZONE PERMISSION functions

Revision Information

- Revision 0 : Proposal extracted from 06-019r5 SAS-2 Zoning proposal.

Referenced Document

SAS-2 revision 3

Overview

SMP CONFIGURE ZONE PERMISSION is a function that allows any management device with access permission to special zone group 2 to revise the access permissions in a zone permission table of a zoning expander device.

Table entry updates may take many clock cycles to execute and a full table revision requires several frames to issue all of the necessary requests. To avoid conflicts between more than one management device requesting changes, a set of requests shall be exclusively issued from the same source address.

In this proposal a single management device is elected to act as the proxy device to issue the SMP CONFIGURE ZONE PERMISSION requests. A management device shall send an SMP CONFIGURE ZONE PERMISSION request to the proxy manager, for execution. A zoning device shall only execute an SMP CONFIGURE ZONE PERMISSION change if the source of the request is the proxy manager.

10.4.3.14 CONFIGURE ZONE PERMISSION function

The CONFIGURE ZONE PERMISSION function requests a change to the zone permissions table entries. A zone supervisor device may originate a CONFIGURE ZONE PERMISSION request, and shall only send it to the proxy manager. When the proxy manager receives a CONFIGURE ZONE PERMISSION request from a device with access permission to special zone group 2 then the proxy manager shall initiate CONFIGURE ZONE PERMISSION requests to all zone supervisor devices to update their zone permission tables. Zoning expander devices shall only process CONFIGURE ZONE PERMISSION requests originated by the proxy manager.

When a CONFIGURE ZONE PERMISSION request is processed the ZONE PERMISSION CONFIGURING bit in the REPORT ZONE PERMISSION response shall be set to one. When the configuring process is complete the ZONE PERMISSION CONFIGURING bit shall in the REPORT ZONE PERMISSION response change from a one to a zero and a BROADCAST (CHANGE) shall be sent on all phys. If the proxy manager receives a CONFIGURE ZONE PERMISSION request when the ZONE PERMISSION CONFIGURING bit is set to one, then the request shall fail.

A request to change zone permission to zone group 0 or zone group 1 shall return a function result of FUNCTION FAILED in the response frame.

Table 1 defines the CONFIGURE ZONE PERMISSION request format.

Table 1 – CONFIGURE ZONE PERMISSION request

Byte\Bit	7	6	5	4	3	2	1	0
0	SMP FRAME TYPE (40h)							
1	FUNCTION (83h)							
2	Reserved							
3	REQUEST LENGTH ((n - 7) / 4)							
4	Reserved							
5								
6	Reserved	START SOURCE ZONE GROUP INDEX						
7	Reserved		NUMBER OF ZONE PERMISSION ENTRIES ((n - 15) / 16)					
8	First zone permission entry descriptor (See Table 2)							
23								
...	...							
n - 20	Last zone permission entry descriptor (See Table 2)							
n - 4								
n - 3	(MSB)		CRC				(LSB)	
n								

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

The FUNCTION field shall be set to 83h.

The REQUEST LENGTH field shall be set to ((n - 7) / 4).

The START SOURCE ZONE GROUP INDEX specifies the first source zone group to be written with the first zone permission entry descriptor.

The ZONE PERMISSION ENTRIES field specifies how many zone permission entry descriptors follow ((n - 15) / 16).

Table 2 defines the zone permission entry descriptor format.

Table 2 - Zone permission entry descriptor format

Byte\Bit	7	6	5	4	3	2	1	0	
0	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	1	0	
1	ZP [15,Y]							ZP [8,Y]	
...	Zone permission entries								
15	ZP [127,Y]							ZP [120,Y]	

The zone permission entry descriptor contains access permission for a zone group (Y) as defined in Table 23 (see 4.8.3.3). For CONFIGURE ZONE PERMISSION request the following rules apply:

- a) Zone permission entries shall be ignored for special groups ZP[1, Y] and ZP[0, Y];
- b) Zone permission entries are undefined for reserved groups ZP[3 to 7, Y]; and

- c) Zone permission entries ZP[s = 8 to 127, Y] shall apply the same value to ZP[Y, d = 8 to 127].

The CRC field is defined in 7.8.1.

Table 3 defines the CONFIGURE ZONE PERMISSION response format.

Table 3 – CONFIGURE ZONE PERMISSION response

Byte\Bit	7	6	5	4	3	2	1	0
0	SMP FRAME TYPE (41h)							
1	FUNCTION (83h)							
2	FUNCTION RESULT							
3	RESPONSE LENGTH (00h)							
4	(MSB)	CRC						(LSB)
7								

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

The FUNCTION field shall be set to 83h.

The FUNCTION RESULT field shall contain SMP FUNCTION ACCEPTED if the request is originated by the proxy manager. The FUNCTION RESULT field shall contain SMP FUNCTION ACCEPTED if the request is received by the proxy manager from a device with access permission to special zone group 2. In all other cases the FUNCTION RESULT field shall be set to SMP ZONE VIOLATION.

If the proxy manager receives another CONFIGURE ZONE PERMISSION request when it is executing a change then the new request shall be rejected and 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 7.8.1.