To: T10 Technical Committee
From: Tim Symons, PMC-Sierra (Tim_Symons@pmc-sierra.com)
Date: 4 July 2007
Subject: 07-312r2 SAS-2 Zoning route table entries for subtractive ports

Revision Information

- Revision 0: First draft.
- Revision 1: Identical copy of revision 0, due to uploading error to the T10 website.
- Revision 2: Revisions per the working group suggestions

Referenced Document

sas2r10 Serial Attached SCSI – 2 (SAS-2) revision 10

Overview

Fixes for SAS2r10 Editors Note: 7

A zoning expander device discovers all devices in the topology during the discovery process. Devices connected through the subtractive port of an expander device are not explicitly required to be included in the zoning expander route table.

Zoning is most effective when permission for an OPEN request can be accepted or rejected at the earliest point in the topology. i.e. the first expander device inside the ZPSDS.

This is a proposal to include zone route table entries for devices attached to the subtractive port of expander and zoning expander devices.

[Suggested additions to SAS-2 existing text (included in black), new additional text shown in red

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4.9.3.4 Zoning expander route table

A zoning expander route table is an expander-based expander route table (see 4.6.7.3) that is able to hold the zone group of ~~each~~ routed SAS address~~es~~.

Figure 56 shows a representation of the zoning expander route table.

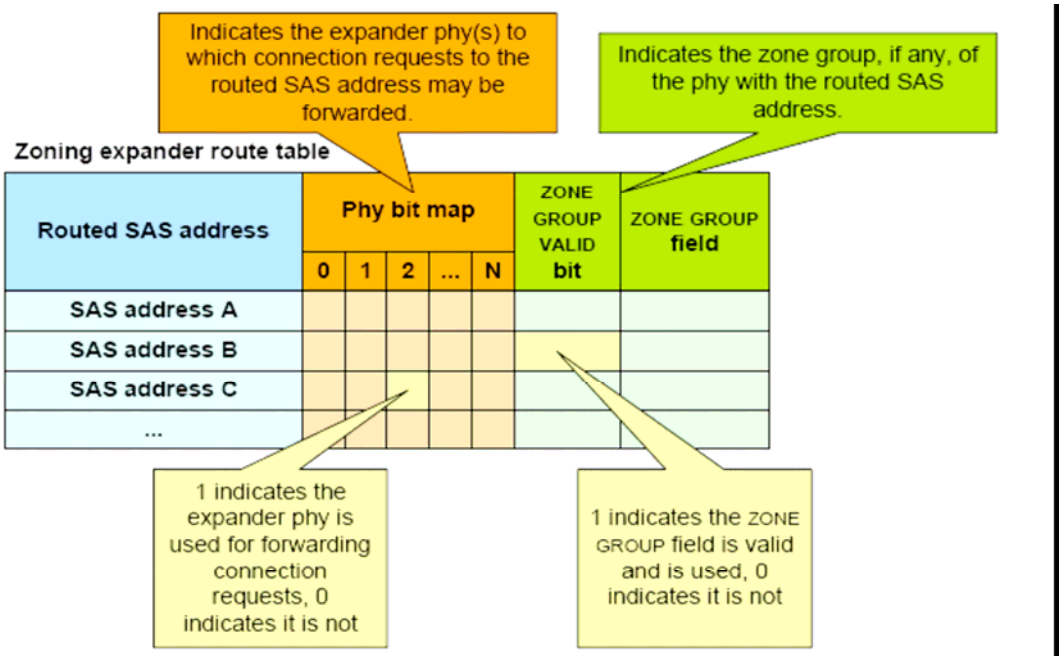

Figure 56 — Zoning expander route table

The zoning expander route table:

a) shall include discovered SAS addresses for all phys with the ROUTING ATTRIBUTE field set to 2h (i.e., table); and
b) may include discovered SAS addresses for all phys with the ROUTING ATTRIBUTE field set to 1h (i.e., subtractive).

The total number of routed SAS addresses shall not exceed the value indicated in the MAXIMUM NUMBER OF ROUTED SAS ADDRESSES field.
The zone route table may include SAS addresses for phys with the ROUTING ATTRIBUTE field set to 1h (i.e.., subtractive) until the total number of routed SAS addresses in the zone route table is equal to the value indicated in the MAXIMUM NUMBER OF ROUTED SAS ADDRESSES field. The method of selection is vendor specific.

4.9.3.5 Source zone group and destination zone group determination

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Table 32 — Destination zone group determination

Routing method of the destination expander phy	Destination zone group
Direct	Zone group of the destination expander phy
Subtractive	If the ZONE GROUP VALID bit is set to one, then the zone group stored in the zoning expander route table for the destination SAS address. If the ZONE GROUP VALID bit is set to zero, then the zone group of the destination expander phy. (i.e., the subtractive expander phy)
Table	…

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