

To: T10 Technical Committee
 From: Rob Elliott, HP (elliott@hp.com)
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 Subject: 04-031r0 SPC-3 Padding Suported Diagnostic Pages

Revision history

Revision 0 (30 December 2003) First revision

Related documents

spc3r16 - SCSI Primary Commands - 3 revision 16
 04-010 - SPC-3 SES-2 Diagnostic subpages

Overview

The first page returned by the RECEIVE DIAGNOSTIC RESULTS command, the Supported Diagnostic Pages page 00h, contains a four byte header followed by one byte per supported page. If the number of pages is not a multiple of four, then this results in unaligning all the diagnostic pages that follow.

It is more convenient for software if the pages start out as 4 byte aligned. It is up to each page definition and the device server to continue that convention; all the existing pages defined in SES-2 and SBC-2 allow for that, assuming that the device server follows pads its strings with spaces and doesn't introduce uneven amounts of vendor-specific data.

Padding with bytes containing 00h should be relatively harmless. If old software interprets them as supported page codes, they simply reiterate that page 00h is supported (up to 3 extra times). It does violate the "ascending order" rule. A warning note is proposed to indicate that the pad field is new.

04-010r1 includes a pad field in the proposed Supported Diagnostic Subpages diagnostic page which is proposed to sit beside the Supported Diagnostic Pages page.

Table 1 shows the lengths of the currently defined diagnostic pages.

Table 1 — Diagnostic page lengths

| Page code | Diagnostic page | Length |
|-----------|--------------------------------|--|
| 00h | Supported Diagnostic Pages | n (easily not a multiple of 4, or even 2) |
| 01h | Configuration | 8 + n (vendor-specific and strings could make uneven) |
| 02h | Enclosure Status | 16 + 4n |
| 03h | Help Text | 4 + n (strings could make uneven) |
| 04h | String In | 4 + n (vendor-specific could make uneven) |
| 05h | Threshold In | 16 + 4n |
| 07h | Element Descriptor | 8 + n (strings could make uneven) |
| 08h | Short Enclosure Status | 4 |
| 09h | Enclosure Busy | 4 |
| 0Ah | Device Element Status | 8 + 4n |
| 40h | SBC-2: Translate Address Input | 14 + 8n |
| 41h | SBC-2: Device Status Input | 48 + n (vendor-specific could make uneven) |
| Others | Not defined yet | |

Suggested changes to SPC-3**7.1.2 Supported diagnostic pages**

The Supported Diagnostic Pages diagnostic page (see table 172) returns the list of diagnostic pages implemented by the device server. This diagnostic page shall be implemented if the device server implements the diagnostic page format option of the SEND DIAGNOSTIC and RECEIVE DIAGNOSTIC RESULTS commands.

Table 2 — Supported diagnostic pages [as modified by 04-010]

| Byte\Bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|--------------|------------------------|---------------------|---|---|---|---|---|-------|
| 0 | PAGE CODE (00h) | | | | | | | |
| 1 | Reserved | SUBPAGE CODE (00h) | | | | | | |
| 2 | (MSB) | PAGE LENGTH (n - 3) | | | | | | (LSB) |
| 3 | | | | | | | | |
| 4 | SUPPORTED PAGE LIST | | | | | | | |
| n | | | | | | | | |
| <u>m + 1</u> | <u>PAD (if needed)</u> | | | | | | | |
| <u>n</u> | | | | | | | | |

The definition of this diagnostic page for the SEND DIAGNOSTIC command includes only the first four bytes. If the PAGE LENGTH field is not zero, the device server shall terminate the SEND DIAGNOSTIC command with CHECK CONDITION status. The sense key shall be set to ILLEGAL REQUEST with an additional sense code of INVALID FIELD IN PARAMETER LIST. This diagnostic page instructs the device server to make available the list of all supported diagnostic pages to be returned by a subsequent RECEIVE DIAGNOSTIC RESULTS command.

The definition of this diagnostic page for the RECEIVE DIAGNOSTIC RESULTS command includes the list of diagnostic pages supported by the device server.

The PAGE LENGTH field ~~specifies~~indicates the length in bytes of the following supported page list and pad bytes.

The SUPPORTED PAGE LIST field ~~shall~~contains a list of all diagnostic page codes implemented by the device server in ascending order including and beginning with page code 00h.

The PAD field contains zero to three bytes set to zero such that the total length of the SUPPORTED PAGE LIST and PAD fields is a multiple of four.

NOTE 1 Logical units complying with previous versions of this standard did not include a PAD field.