

ENDL TEXAS

Date: 11 September 2008
To: T10 Technical Committee
From: Ralph O. Weber
Subject: Too much to do ... Not enough Progress Counters

Introduction

Way back in the early days of SA development Rob Elliott noted that a device might find itself doing multiple time consuming tasks concurrently (e.g., factoring Pi for a security computation and performing a background medium scan from here to eternity). A promise was made to provide a way to report progress on all such activities as a group.

While not requiring anything, this proposal defines a mechanism by which a suitably inclined device server **may** report multiple progress counters in response to a single REQUEST SENSE command that is sagacious enough to have the DESC bit set to one in the CDB.

Revision History

- r0 Initial revision
- r1 Incorporate changes requested by the July CAP working group
- r2 Incorporate changes requested by the September CAP working group, some of which were changes requested by the July CAP working group.

Substantive changes between r1 and r2 are indicated by change bars.

Unless otherwise indicated additions are shown in **blue**, deletions in ~~red-strikethrough~~, and comments in **green**.

Proposed Changes in SPC-4 r16

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Table 27 — DESCRIPTOR TYPE field

| Code | Description | Reference |
|---------------------------|------------------------------------|-----------|
| 00h | Information | 4.5.2.2 |
| 01h | Command specific information | 4.5.2.3 |
| 02h | Sense key specific | 4.5.2.4 |
| 03h | Field replaceable unit | 4.5.2.5 |
| 04h | Stream commands | SSC-3 |
| 05h | Block commands | SBC-3 |
| 06h | OSD object identification | OSD |
| 07h | OSD response integrity check value | OSD |
| 08h | OSD attribute identification | OSD |
| 09h | ATA Status Return | SAT |
| 0Ah | Progress indication | 4.5.2.x |
| 0Ah 0Bh to 7Fh | Reserved | |
| 80h to FFh | Vendor specific | 4.5.2.6 |

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4.5.2.4.1 Sense key specific sense data descriptor introduction

The sense key specific sense data descriptor (see table 30) provides additional information about the exception condition [described in 4.5.2.1](#). The format and content of the sense-key specific data depends on the value in the SENSE KEY field (see 4.5.2.1).

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4.5.2.x Progress indication sense data descriptor

{{All of 4.5.2.x is new. Markups for changed text suspended for the remainder of this proposal.}}

If the sense key is set to NO SENSE or NOT READY, the progress indication sense data descriptor (see table x1) may be used to provide a progress indication for one operation other than the one described by the non-descriptor fields in 4.5.2.1. The sense data should include one progress indication sense data descriptor for each operation for which the device server is able to report progress other than the operation described by the non-descriptor fields in 4.5.2.1.

Table x1 — Progress indications sense data descriptor format

| Bit Byte | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|---------------------------------|---------------------|---|---|---|---|---|-------|
| 0 | DESCRIPTOR TYPE (0Ah) | | | | | | | |
| 1 | ADDITIONAL LENGTH (06h) | | | | | | | |
| 2 | SENSE KEY | | | | | | | |
| 3 | ADDITIONAL SENSE CODE | | | | | | | |
| 4 | ADDITIONAL SENSE CODE QUALIFIER | | | | | | | |
| 5 | Reserved | | | | | | | |
| 6 | (MSB) | PROGRESS INDICATION | | | | | | (LSB) |
| 7 | | | | | | | | |

The DESCRIPTOR TYPE field and ADDITIONAL LENGTH field are described in 4.5.2.1.

For the progress indications sense data descriptor:

- a) The DESCRIPTOR TYPE field shall be set to 0Ah; and
- b) The ADDITIONAL LENGTH field shall be set to 06h.

The SENSE KEY field indicates the operation for which this progress indication sense data descriptor provides a progress indication. A list of sense key values is in 4.5.6.

The ADDITIONAL SENSE CODE (ASC) field indicates the operation for which this progress indication sense data descriptor provides a progress indication. A list of additional sense codes is in 4.5.6.

The ADDITIONAL SENSE CODE QUALIFIER (ASCQ) field indicates detailed information related to the additional sense code for the operation for which this progress indication sense data descriptor provides a progress indication. The value returned in the ADDITIONAL SENSE CODE QUALIFIER (ASCQ) field shall be as specified in 4.5.6.

The PROGRESS INDICATION field indicates a percent complete for the operation indicated by the SENSE KEY field, the ADDITIONAL SENSE CODE field, and the ADDITIONAL SENSE CODE QUALIFIER field. The value is a numerator that has 65 536 (10000h) as its denominator. The progress indication shall be based upon the total operation.