

ENDL T E X A S

Date: 18 April 2000
 To: T10 Technical Committee
 From: Ralph O. Weber
 Subject: Beyond Beyond 2TB

The handling of mode page block descriptors in 99-259r4 is not backward compatible with old host driver software.

The presence of `LONGLBA=1` in the mode page header returned by a `MODE SENSE(10)` command is intended to inform that application client that the block descriptors are in the 16-byte format instead of the 8-byte format that has applied to `MODE SENSE(10)` commands since SCSI-2. However, the `LONGLBA` bit is a new definition, introduced by 99-259r4.

Old host driver software will not be inspecting the `LONGLBA` bit, because the bit was not defined in SCSI-2 or any SPC version prior to SPC-2 revision 16. Instead, old host driver will process every 16-byte block descriptor as if it were two 8-byte block descriptors.

This proposal adds further controls on the use of `LONGLBA` to insure that host driver software does not see `LONGLBA=1` unless it is prepared to deal with it.

Proposed additions to SPC-2

In the `MODE SENSE(10)` command definition, add a Long LBA Accepted (`LLBAA`) bit as bit 4 in byte 1 giving the following CDB structure.

MODE SENSE(10) command

| Bit Byte | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------------------------|---|-----------|-------|-----|----------|---|---|
| 0 | OPERATION CODE (5Ah) | | | | | | | |
| 1 | Reserved | | | LLBAA | DBD | Reserved | | |
| 2 | PC | | PAGE CODE | | | | | |
| 3 | Reserved | | | | | | | |
| 4 | Reserved | | | | | | | |
| 5 | Reserved | | | | | | | |
| 6 | Reserved | | | | | | | |
| 7 | (MSB) | | | | | | | |
| 8 | ALLOCATION LENGTH (LSB) | | | | | | | |
| 9 | CONTROL | | | | | | | |

Note: Byte 1 bit 4 was selected because of its proximity to the Disable Block Descriptors (DBD) bit.

Add the following definition text for LLBAA:

If the Long LBA Accepted (LLBAA) bit is one, the device server is allowed to return parameter data with the LONGLBA bit equal to one (see 8.3.1). If LLBAA is zero, the LONGLBA bit shall be zero in the parameter data returned by the device server.

Note n Device servers may respond to the requirement that LONGLBA be equal to zero by not returning any block descriptors.

Note: The intent of the note is two fold. First, device servers should not be required to return data that fails to describe the device fully. Second, host driver writers should be given some incentive (the lost of block descriptor data) to update their software.