

Date: October 16, 2003
 To: T10 Committee (SCSI)
 From: Jim Coomes (Seagate)
 Subject: SBC Default data protection block

1 Revision

rev 2 - This revision changes the detection of a default protection information block to only be based on the DATA BLOCK APPLICATION TAG field.

rev 1 - This proposal is changed to require the default data protection block defined here to be used for FORMAT with protection information enabled and WRITES without the initiator providing the protection information. The option to specify the DATA BLOCK APPLICATION TAG in the initialize pattern descriptor is removed.

2 Overview

There is a need for a data protection block definition that indicates that the block is not checked.

When the DATA BLOCK REFERENCE TAG is not locked to the LBA, valid protection information can not be determined for formatting the medium. Writing the LBA in the protection information would result in a error when unwritten blocks are accessed.

When the DATA BLOCK REFERENCE TAG is not locked to the LBA, valid protection information can not be determined for a write by an initiator that does not provide the data protection block.

Additionally, a default data protection block allows disk drives format faster by not writing a unique value in the protection information.

The proposed default data protection block is all ones in all fields of the block.

Changes to document 03-176r56

Page 3, 4.0.2, delete the sentences marked by strikethrough below:

The DATA BLOCK GUARD field contains the CRC (see 4.0.3) of the contents of the DATA BLOCK field. ~~The default value for the DATA BLOCK field shall be a properly generated CRC (see 4.0.3)~~

The DATA BLOCK APPLICATION TAG field is set by the application client. The contents of the data block application tag are not defined by this standard. The DATA BLOCK APPLICATION TAG field may be modified by a device server if the APP_TAG_OWN bit is set to zero (see 4.0.45). ~~If the APP_TAG_OWN bit is set to zero the default value for the DATA BLOCK APPLICATION TAG field shall be 0000h.~~

The DATA BLOCK REFERENCE TAG field is set to the least significant four bytes of the logical block address to which the data block is associated. The first data block transmitted shall contain the least significant four bytes of the logical block address contained in the LOGICAL BLOCK ADDRESS field of the command associated with the data being transferred. Each subsequent data block's DATA BLOCK REFERENCE TAG field shall contain the data block reference tag of the previous data block plus one. ~~The default value for the DATA BLOCK REFERENCE TAG field shall be the least significant four bytes of the LBA of the data block being written or formatted.~~

Page 3, 4.0.2, Add:

When protection information is written during format or by a command that did not provide the data protection block, all fields shall be written to a default value of all ones (FFh,FFh, FFh,FFh, FFh, FFh, FFh, FFh). When

a command enables checking of any protection information field and the application client or device server detects a DATA BLOCK APPLICATION TAG field of all ones (FFh,FFh), the checking of all fields in the protection information shall be disabled for the associated data block.

Page 7, 4.0.9.1

Delete the last 2 paragraphs on the page.

Page 8, Table 4

Delete the table and the following paragraphs in 4.0.9.2 from the proposal.