Do Read Long and Write Long have a Secure Future?

(Was: A proposal to add a new modifier to SCSI Write commands)

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Read and Write Long Applications

- To force an unrecovered read error
  – useful for disk mirroring applications
- To test the error detection and correction mechanisms in the storage device
Read and Write Long
Disadvantages

- Write Long is not an ideal mechanism for creating forced errors:
  - the length is drive-specific
  - the data pattern is theoretically drive-specific

- Write Long can be used by malicious utilities to make a drive appear bad.
An Alternative

• Add a bit to the Write commands that would instruct the drive to return an unrecovered ECC error on subsequent reads.
  – Only one-block transfer lengths allowed.
  – Subsequent writes with the "force error" bit clear would return the block to normal status.

• Advantages:
  – provides a vendor-independent method for creating forced errors
  – (does not infringe on DIGITAL’s patent)
Reactions

• Strong sentiment in favor of keeping Read and Write Long
  – they are used as a test tool

• Preference for avoiding an additional way to do the same thing
  – the new Write bit is probably not worth adding unless R/W Long are obsoleted

• Some interest in extending the new Write functionality:
  – generate a unique error when read
  – Read returns the data that was written
  – additional Write modifier bits, each with unique Read error codes
Resolution

- Write Long is adequate for writing forced errors, if it will remain in the Standard, and in common implementations.
- Strong desire to keep R/W Long as a testing tool, indicates that it will not be obsoleted. – right?
- In light of this, the additional mechanism for writing forced errors is not justified. – No further work on the proposal is planned.