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To: T10 Committee (SCSI)

From: Rob Basham (IBM)

Subject: Switching Between Explicit and Implicit Block Address Models

1. Introduction

1.1 Author Information

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1.2 Change History

1.2.1 Revision 0

- Initial Proposal

1.3 Purpose

This document describes a a proposal for managing the state change between explicit and implicit logical block address models. Different initiators may want to use different models and even different applications on the same initiator may want to use the different models. The goal of the proposal is to come up with a model that can solve both of these problems.

2. Proposal For Selecting Address Model

The Explicit Block Address model and the Implicit Block Address model are defined in T10/00-318 revision 2, with modifications as documented in the SSC-2 December 6 meeting minutes. One piece that was found lacking at the meeting was the method for selecting between the Explicit and Implicit Address models. This proposal is to manage that using a new Mode Parameter.

2.1 Proposed Mode Bit

The bit to select the block address model is on Device configuration page 10h, byte 10, bit 1. This bit is called BLOCK ADDRESS MODEL (BAM). A value of 1 means that the Explicit Logical Block Address model is selected. A value of 0 means that the Implicit Logical Block Address model is selected.

2.2 Default Settings

The default value of BLOCK ADDRESS MODEL is 1, meaning that the Explicit Logical Block Address model shall be the default model. If both the Explicit Logical Block Address model and the Implicit Logical Block Address models are supported by a device, then the SBAM bit shall be changeable and shall be a means of selecting an address model.

To accommodate old applications, it is allowed to transition between address models implicitly when a tape is mounted or rewound to Beginning Of Tape. The determination on which model to use is subsequently made when the first command unique to one model of the other is received (or when a Mode Select with an explicit BLOCK ADDRESS MODEL is received). .

2.3 SELECT BLOCK ADDRESS MODEL Processing

If a command is received that is not supported by the current model, the device shall return an ILLEGAL REQUEST sense key with an ASC/ASCQ combination of ILLEGAL COMMAND WHILE IN EXPLICIT ADDRESS MODEL or ILLEGAL COMMAND WHILE IN IMPLICIT BLOCK ADDRESS MODEL. Even if mode page 10h is saved by Initiator, the drive must decide which model it is currently supporting and disallow commands from the other model. The requirement is that Initiators using different models would hand off a drive (in other words, exchange the privilege to excercise a drive with motion commands) only at BOT or by an explicit MODE SELECT model change request.

Prior to the model change, all buffered write data shall be written to tape.