

# memorandum



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T10/04-335r0

To  
INCITS T10 Committee

From  
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Subject  
WORM Tamper Read Enable

Date  
07 October, 2004

## Revision History

Revision 0 – Initial proposal.

## Background

HP and other tape drive vendors wish to include a Write Once Read Multiple (WORM) capability in SSC-3. Previous and on-going proposals seek to add the necessary specifications: [04-211r1](#) and 04-312r0.

Support for WORM operation raises the question, what does a streaming device server do if it detects tampering in a previously written WORM cartridge? This proposal adds a WORM Tamper Read Enable bit that allows the application client to specify the behavior of the device server in this situation.

## Proposed changes to SSC-3

### 2.3 References under development

At the time of publication, the following referenced standards were still under development. For information on the current status of the document, or regarding availability, contact the relevant standards body or other organization as indicated.

ISO/IEC 14776-313, *SCSI Primary Commands – 3 standard*

ISO/IEC 14776-412, *SCSI Architecture Model – 2 standard*

ISO/IEC 14776-352, *SCSI Media Changer Commands – 2 standard*

[T10/1729-D](#), *SCSI Primary Commands – 4*

### 8.3.3 Device Configuration mode page

The Device Configuration mode page (see table 62) is used to specify the appropriate sequential-access device configuration.

**Table 62 – Device Configuration mode page**

Bit Byte	7	6	5	4	3	2	1	0
0	PS	Rsvd	PAGE CODE (10h)					
1	PAGE LENGTH (0Eh)							
2	Rsvd	Obsolete	CAF	ACTIVE FORMAT				
3	ACTIVE PARTITION							
4	WRITE OBJECT BUFFER FULL RATIO							
5	READ OBJECT BUFFER EMPTY RATIO							
6	(MSB)	WRITE DELAY TIME						(LSB)
7	OBR	LOIS	RSMK	AVC	SOCF	ROBO	REW	
9	GAP SIZE							
10	EOD DEFINED			EEG	SEW	SWP	BAML	BAM
11	(MSB)	OBJECT BUFFER SIZE AT EARLY WARNING						(LSB)
12	OBJECT BUFFER SIZE AT EARLY WARNING							
13	OBJECT BUFFER SIZE AT EARLY WARNING							
14	SELECT DATA COMPRESSION ALGORITHM							
15	Reserved	WTRE	OIR	REWIND ON RESET	ASOCWP	PERSWP	PRMWP	

A WORM Tamper Read Enable (WTRE) bit set to zero specifies that the device server shall return CHECK CONDITION status in response to a locate, read, read reverse, space, or verify operation if the device detects compromised integrity of data stored





## D.2 Additional Sense Codes

Table D.1 is a numerical order listing of the additional sense codes and the additional sense code qualifiers.

**Table D.1 – ASC and ASCQ assignments (part 7 of 15)**

ASC	ASCQ	D	T	L	P	W	R	O	M	A	E	B	K	V	F	Description
		D														DIRECT ACCESS BLOCK DEVICE (SBC-2)
			T													SEQUENTIAL ACCESS DEVICE (SSC-2)
				L												PRINTER DEVICE (SSC)
					P											PROCESSOR DEVICE (SPC-2)
						W										WRITE ONCE BLOCK DEVICE (SBC)
							R									CD/DVD DEVICE (MMC-2)
								O								OPTICAL MEMORY BLOCK DEVICE (SBC)
									M							MEDIA CHANGER DEVICE (SMC-2)
										A						STORAGE ARRAY DEVICE (SCC-2)
											E					ENCLOSURE SERVICES DEVICE (SES)
												B				SIMPLIFIED DIRECT-ACCESS DEVICE (RBC)
													K			OPTICAL CARD READER/WRITER DEVICE (OCRW)
														V		AUTOMATION/DRIVE INTERFACE (ADC)
															F	OBJECT-BASED STORAGE (OSD)
30h	0Ch		T													WORM MEDIUM – CANNOT ERASE
30h	0Dh		T													WORM MEDIUM – INTEGRITY CHECK
30h	10h						R									MEDIUM NOT FORMATTED