In proceedings of *Department of Defense Cyber Crime Conference,* Jan 22-29 2010, St. Louis Mo UNIVERSITY OF RHODE ISLAND DEPARTMENT OF COMPUTER SCIENCE

Evaluation of Software Write Blocking In SAFE Block Win7 V1.0

Technical Report TR10-328

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7/1/2010

This report applies the U.S. government's National Institute of Standards (NIST) NIST Software Write Blocker Test Suite V1.2 [1] to SAFE Block Win7 V1.0 [2], a software write blocker prototyped at the University of Rhode Island and marketed by ForensicSoft, Inc. The results demonstrate that SAFE Block Win7 V1.0 meets all NIST base requirements, and all NIST mandatory and optional test assertions. To facilitate comparison, this report generally follows the format of the NIST report "ACES Software Write Block Tool Test Report: Writeblocker Windows XP Version 6.10.0" January 2008 [3]. However, this is not a NIST report and should in no way be construed as NIST-conducted tests, or NIST-approved results.

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1. NIST Base Requirements and Our Conclusions

SAFE Block Win7 V1.0 shall not allow a protected drive to be changed.

SAFE Block Win7 Version 1.0 blocked all test commands from the protected categories that were sent to protected drives, and there were no changes to the protected drives.

SAFE Block Win7 V1.0 shall not prevent obtaining any information from or about any drive.

SAFE Block Win7 Version 1.0 did not prevent obtaining information from or about any drive.

SAFE Block Win7 V1.0 shall not prevent any operations to a drive that is not protected.

SAFE Block Win7 Version 1.0 did not alter or block any test commands sent to unprotected drives. Thus, SAFE Block Win7 V1.0 meets all base requirements.

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2. Deviations from Expectations

This section explains two deviations, or apparent deviations, from expected behavior in our test results. One is a deviation from NIST's specified behavior, which is documented as a design decision in the SAFE Block Win7 V1.0 tool. The second explains what at first appears to be a strange MD5 hash result on unprotected disks, but is actually correct.

2.1 Variation from NIST's Expected Behavior

The NIST test specification expects all commands from its "Other" category to be allowed (see test assertion SWB–AO–05 in [3]; which is also summarized in Section 5.2 below). SAFE Block Win7 Version 1.0 does this, except that it blocks the WRITE_ATTRIBUTE "Other" command. The SAFE Block Win7 Version 1.0 documentation explains that this command could possibly alter the data of a disk so in its default conservative mode, used during the test as specified in Appendix B, SAFE Block Win7 Version 1.0 blocks the command. We refer to this as Variation 1 when analyzing test results in Section 8.

2.1a. Same Hash Test Result

In some tests the MD5 hash value before and after a write test to an unprotected disk can be the same, which at first glance is unexpected. This behavior can be found in the NIST report pages 101 and 105 [3].

This is actually correct behavior for these reasons:

- The NIST Software Write Blocker Test Suite V1.2 tests the issuing of write commands with a control structure that specifies zero bytes to write, and does not actually pass the command through. This is sufficient for the NIST Software Write Blocker Test Suite V1.2 because the test suite intercepts write commands to determine if they pass the blocking tool. However, the testing software will not actually ever write any data to the disk.
- In NIST's original report [3], hash values changed on all NTFS disks, but did not change on FAT32 disks (see pages 101 and 105 of [3]). This is due to the fact that NFTS itself writes a log file to its disks, FAT32 does not. Since, as stated above, NIST Software Write Blocker Test Suite V1.2 itself does not write to the disks, the changes in the hashes in the NIST test are a result of the NTFS log being written while the testing software executed.
- We verified that the hash value to unprotected NTFS disks does change using the NIST Software Write Blocker Test Suite V1.2 with SAFE Block Win7 V1.0 installed, and does not change for FAT32 disks.

Neither of these seemingly unexpected behaviors are concerns for SAFE Block Win7 V1.0's ability to protect and unprotect disks.

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3. SAFE Block Description

SAFE Block Win7 Version 1.0 consists of a disk drive level device driver with a GUI and system tray application. This is similar to the NTWBPM driver used by WriteBlocker XP that NIST tested in [3], which makes the NIST testing software that tested that NTWBPM driver applicable to SAFE Block Win7 Version 1.0 evaluation, for the reasons NIST puts forth in [3].

4. Test Case Selection

The test cases are the 30 tests used in the NIST report [3], most of which are implemented in NIST Software Write Blocker Test Suite V1.2 [1].

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5. Test Results by Assertion

This section evaluates SAFE Block Win7 V1.0 using the NIST test assertions [3]. The meaning of the test assertions is that described in Section 7 of the NIST report [3].

5.1 NIST Mandatory Assertions

SWB-AM-01 If a drive is unprotected then SAFE Block Win7 V1.0 shall not block any command.

SAFE Block Win7 Version 1.0 did not alter or block any test commands sent to unprotected drives.

SWB-AM-02 If a drive is protected and a command from the READ category is issued then SAFE Block Win7 V1.0 shall not block the command.

SAFE Block Win7 Version 1.0 did not block or alter any test command from the READ category sent to a protected drive. *SWB-AM-03* If a drive is protected and a command from the WRITE category is issued then SAFE Block Win7 V1.0 shall block the command.

SAFE Block Win7 Version 1.0 blocked all of the 34 test commands from the WRITE category issued to protected drives. *SWB-AM-04* If a drive is protected and a command from the VENDOR_SPECIFIC category is issued then SAFE Block Win7 V1.0 shall block the command.

SAFE Block Win7 Version 1.0 blocked all of the 80 test commands from the VENDOR_SPECIFIC category issued to protected drives.

SWB-AM-05 If a drive is protected and a command from the UNDEFINED category is issued then SAFE Block Win7 V1.0 shall block the command.

SAFE Block Win7 Version 1.0 blocked all of the 53 test commands from the UNDEFINED category issued to protected drives.

SWB-AM-06 If a drive is protected and a command from the OTHER category is issued then SAFE Block Win7 V1.0 shall not block the command.

SAFE Block Win7 Version 1.0 blocked one test command from the OTHER category sent to a protected drive, as explained in Section 2.1 above.

SWB-AM-07 If SAFE Block Win7 Version 1.0 is executed then SAFE Block Win7 V1.0 shall issue a message indicating SAFE Block Win7 Version 1.0 is active.

This is not applicable to the driver, which runs continually from the point of reboot after installation to the point of reboot after de-installation. The GUI application being active is indicated by a tray icon. A pop-up message from the tray indicates when SAFE Block blocks and unblocks devices, including automatic blocking specified as default behavior.

SWB-AM-08 If SAFE Block Win7 V1.0 is executed then SAFE Block Win7 V1.0 shall issue a message indicating all drives accessible by the covered interfaces.

The SAFE Block GUI application displays a tree of all channels and devices accessible by the covered interfaces.

SWB-AM-09 If SAFE Block Win7 V1.0 is executed then SAFE Block Win7 V1.0 shall issue a message indicating the protection status of each drive connected to a covered interface.

The SAFE Block GUI application displays the protection status of all devices connected to covered interfaces.

SWB-AM-10 If a drive is protected and a command from the BASIC operation category is issued then the command shall fail with an error status and the drive shall not be altered in any way.

Conclusion: SAFE Block Win7 V1.0 meets all NIST mandatory assertions.

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5.2 NIST Optional assertions

SWB-AO-01 If a subset of all covered drives is specified for protection, then commands from the write category shall be blocked for drives in the selected subset.

SAFE Block Win7 Version 1.0 blocked all of the 34 test commands from the WRITE category issued to protected drives. *SWB-AO-02* If a subset of all drives is specified for protection, then commands from the

VENDOR_SPECIFIC category shall be blocked for drives in the selected set.

SAFE Block Win7 Version 1.0 blocked all of the 80 test commands from the VENDOR_SPECIFIC category issued to protected drives.

SWB-A0-03 If a subset of covered drives is selected for protection, then commands from the UNDEFINED category shall be blocked for drives in the selected set.

SAFE Block Win7 Version 1.0 blocked all of the 53 test commands from the UNDEFINED category sent to protected drives.

SWB-A0-04 If a subset of covered drives is selected for protection, then commands from the READ category shall be not blocked for drives in the selected set.

SAFE Block Win7 Version 1.0 did not block any test commands from the READ category sent to the drives.

SWB-A0-05 If a subset of covered drives is selected for protection, then commands from the OTHER category shall be not blocked for drives in the selected set.

SAFE Block Win7 Version 1.0 blocked one of the test commands from the OTHER category sent to the drives, as described in Section 2.1.

SWB-A0-06 If a subset of covered drives is selected for protection, then no commands from any category shall be blocked for drives not in the selected set.

SAFE Block Win7 Version 1.0 did not block any commands sent to unprotected drives.

SWB-A0-07 If SAFE Block Win7 V1.0 is active and SAFE Block Win7 V1.0 is deactivated then no commands to any drive shall be blocked.

No commands to any drive were blocked after SAFE Block Win7 Version 1.0 was de-installed.

SWB-A0-08 If SAFE Block Win7 V1.0 blocks a command then SAFE Block Win7 V1.0 shall issue either an audio or visual signal.

SAFE Block Win7 Version 1.0 does not issue its own signal. However, in most instances Windows itself detects the blocking and issues an informational dialog box that the drive is write-protected.

Conclusion: SAFE Block Win7 V1.0 meets all NIST optional assertions, with a caveat on SWB-AO-05 (explained in Section 2.1).

6. Testing Environment

All tests were run at the University Of Rhode Island Department Of Computer Science. The test computer consisted of:

Model: Hewlett-Packard Pavilion p6116f

CPU: AMD Athlon X2 (K) 7550 (95W) [Socket 771 LGA; 2.5 GHz; 1066 FSB; 4MB L2 Cache]

RAM: Kingston 8 GB [DDR2 2 GBx4; PC2-6400]

Motherboard: Pegatron M2N78-LA [HP/Compaq Name: Violet-GL8E; NVidia GeForce 9100 Chipset]

4 SATA slots

BIOS: HP Inc. Standard 06/09/09

Hard Drive(s): Seagate Barracuda ST380815AS [7200.10 RPM; 160 GB]

Operating System: Microsoft Windows® Windows 7

PCI(x1) Card: Startech PEX2IDE 1-Port PATA Adapter

SAS(x1) Card: Promise TX4680 4-Port SAS/SATA Adapter

Table 1: Storage Devices Used in Test Computer

Model	Interface	Useable	Size
		Sectors	
Maxtor DiamondMax	PATA	999424	500 MB
Seagate Barracuda	SATA	313524224	80 GB
Toshiba MBA3073RC	SAS	274333696	73.5 GB
PNY Attache Thumb Drive	USB	1943552	1 GB

Note that when used "MB" is correct – these are small drives to facilitate fast hashing.

The testing was performed using *NIST Software Write Blocker Test Suite V1.2* [1] installed on the test machine as per installation instructions included in [1] with the modifications described in Appendix C. A screenshot of the busTRACE Filter Driver Load Order v1.0.009 tool [5] showing the NIST filters installed properly can be seen below. Hashes were computed using AccessData FTK Imager 2.9.0 [4].

Figure 1: Driver Order showing NIST test drivers and SAFE Block Win7 V1.0

ilter Driver Load Order		http://www.bustrace.com	1.0.00
🗐 Disk Drives	Filter Position	Filter Driver / Object	
Promise 1+0J80D SCSI Disk Dev ST316081 3AS SCSI Disk Device Maxior 8549005 ATA Device CD/DVD Devices		PatMgr Pitcher SafeBlock Catcher Maxtor 86480D6 ATA Device No Lower Filter Drivers specified for this device	E
	Version Information Driver Name: File Location: File Description: File Version: Product Name: Product Version: Company Name:		
(III)	Copyright:		

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7. Reading Test Results

Each of the test results in the following section show the disk configuration active on the test machine using the Windows Computer Management interface. It is followed by a screen shot of the SAFE Block Win7 Version 1.0 interface with the blocked/unblocked disk configuration for the test. The use of a lock icon over the drive icon in the device tree on the left in the SAFE Block Win7 Version 1.0 GUI indicates that the drive is protected (blocked), a non-lock icon indicates that the disk is unprotected (not blocked). The test results are shown by summary text displayed by the NIST Software Write Blocker Test Suite V1.2, the general format and meaning of which is fully described in the NIST report [3]. A sample of the full report can be found in Appendix A. The key elements of the display are:

- Line 7 which shows the pattern of blocked disks that the test software expects. In this display:
 - U = Unprotected (unblocked) disk 0
 - P = Protected (blocked) disk0

For instance:

- \circ U = only the first disk of the disks described in Section 6 is sent commands and it is expected to be unblocked.
- PU = the first two disks of the disks described in Section 6 are sent commands and it is 0 expected that disk 1 is protected and disk 2 is unprotected.
- UUP = the first three disks of the disks described in Section 6 are sent commands and it is 0 expected that disks 1 and 2 are unprotected and disk 3 is protected.
- The summary which shows how many of each type of command got through the SAFE Block Win7 Version 1.0 tool.

Each test also contains before and after MD5 hash values of all disks involved in the test. The MD5 hash serves as digital signature of the bits on the disk. If the MD5 hash value changes, the disk was written to. If the MD5 hash value remains the same, then it is generally accepted that the disk was not written to. We now provide a subsection for each of the 30 NIST software write blocker tests. Each subsection is patterned after similar subsections in Section 9 of the NIST report.

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8. Test Results

8.1 Test Case SWB-01

This test case's primary purpose is to test SAFE Block Win7 V1.0's compliance with SWB-AM-01. It issues all possible I/O commands to a single unprotected disk drive.

Figure 2: SWB-01 Drive Configuration

(C:)	Layout Ty	pe File System	Status	C
	Simple Ba	sic NTFS	Healthy (Boot, Page File, Crash Dump, Primary Partition)	7
PATA (D:)	Simple Ba		Healthy (Primary Partition)	7
⇒ System Reserved	Simple Ba	sic NTFS	Healthy (System, Active, Primary Partition)	1
< [111		
		11100		۲
-		1		•
Disk 0 Basic	System Res			•
Basic 149.05 GB	System Res 100 MB NTF Healthy (Sys	73.14 GB NTFS	75,81 GB Page File, Crash Dun Unallocated	•
Disk 0 Basic 149.05 GB Online	100 MB NTF	73.14 GB NTFS		•

System DiskUnblocked PATA Disk

Figure 3: SWB-01 SAFE Block Win7 v1.0 Configuration

SEAN-PC				
	Dual Channel PCI IDI	E Controller		
	Channel Iaxtor 86480D6 ATA I	Device(0:0:0)(6E	6973731	
10 20102 - 2010	Force Serial ATA Cor		001010]	
🗄 🧇 ST31	6081 3AS SCSI Disk	Device[0:0:0][57	BAQADC]	
0	0	0	6an.	•
?	6		30	C

Table 2: SWB-01 MD5 Hash Values

Before PATA Disk	8a59a5b51f735541201e58519829352e
After PATA Disk	425e344e0037a971f7a2d6c66f6f0708

Table 3: SWB-01 NIST Software Write Blocker Test Suite V1.2 Output Summary

Testing device \\.\PhysicalDri	vel		
Device is software WRITE ENABL	ED		
******************** TEST RESUL	TS SUMMARY	* * * * * * * * * *	* * * * * * *
Test Category	Allowed	Blocked	Total
Read IRP's	4	0	4
Write IRP's	8	0	8
Other IRP's	15	0	15
Read CDB's	27	0	27
Write CDB's	34	0	34
Other CDB's	62	0	62
Vendor SPecific CDB's	80	0	80
Undefined CDB's	53	0	53

SWB-01 Test result analysis

SAFE Block Win7 Version 1.0 performed correctly - all commands were issued and all were allowed on the unblocked disk.

8.2 Test Case SWB-02

This test case tests SAFE Block Win7 V1.0's compliance with SWB-AM-02. It issues all possible READ commands to a single protected disk drive. The expected result is that SAFE Block Win7 V1.0 will not block any READ command issued by the test application.

Figure.	л.	CM/D 02		Configuration
riguie	4.	311 D-02	Drive	Configuration

(C:)	Layout	Type File System	Status		
(C:)	Simple E	Basic NTFS	Healthy (Boot, Page File, Crash Dump, Primary F	Partition)	
PATA (D:)	Simple B	Basic NTFS	Healthy (Primary Partition)		2
System Reserved	Simple I	Basic NTFS	Healthy (System, Active, Primary Partition)		
< [. III			100
Disk 0	System Re		S 75.81 GB		
Basic 149.05 GB	100 MB NT Healthy (Sy		t, Page File, Crash Dun Unallocated		
Basic 149.05 GB	100 MB NT		t, Page File, Crash Durr Unallocated		

System DiskBlocked PATA Disk

Figure 5: SWB-02 SAFE Block Win7 v1.0 Configuration



Table 4: SWB-02 MD5 Hash Values

Before PATA Disk	7faa386805dcd5740a6a9daa23865c81
After PATA Disk	7faa386805dcd5740a6a9daa23865c81

Table 5: SWB-02 NIST Software Write Blocker Test Suite V1.2 Output Summary

Testing device \\.\PhysicalDri								
Device is software WRITE PROTE	CTED							

Test Category	Allowed	Blocked	Total					
Read IRP's			4					
Write IRP's		0	0					
Other IRP's	0	0	0					
Read CDB's	27	0	27					
Write CDB's	0	0	0					
Other CDB's	0	0	0					
Vendor SPecific CDB's	0	0	0					
Undefined CDB's	0	0	0					

SWB-02 Test result analysis

SAFE Block Win7 Version 1.0 performed correctly - only READ commands were issued and all were allowed on the blocked disk.

8.3 Test Case SWB-03

This test case tests SAFE Block Win7 V1.0's compliance with SWB-AM-03. It issues all possible commands from the WRITE category to a single protected disk drive. The expected result of this test is that SAFE Block Win7 V1.0 will block all commands issued by the test application.

n

- 101	Layout	Type	File System	Status		1
💼 (C:)	Simple B	Basic	NTFS	Healthy (Boot, Page F	ile, Crash Dump, Primary Partition)	1
PATA (D:)	Simple B	Basic	NTFS	Healthy (Primary Part	ition)	-
System Reserved	Simple I	Basic	NTFS	Healthy (System, Acti	ve, Primary Partition)	
				1		
•		m				2

149.05 GB	System Re 100 MB NT Healthy (Sy	F! 7	(C:) 3.14 GB NTFS lealthy (Boot	, Page File, Crash Dun	75.81 GB Unallocated	
Basic 149.05 GB	100 MB NT	F! 7	3.14 GB NTFS			

System DiskBlocked PATA Disk

Figure 7: SWB-03 SAFE Block Win7 v1.0 Configuration



Table 6: SWB-03 MD5 Hash Values

Before PATA Disk	7faa386805dcd5740a6a9daa23865c81
After PATA Disk	7faa386805dcd5740a6a9daa23865c81

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	JUCKEI TEST JU	inte v1.2 Outpu	at Summar					
Testing device \\.\PhysicalDrive1								
Device is software WRITE PROTH	Device is software WRITE PROTECTED							
******************* TEST RESUI	LTS SUMMARY	******	* * * * * * *					
Test Category	Allowed	Blocked	Total					
Read IRP's	, 0	0	0					
Write IRP's	0	8	8					
Other IRP's	. 0	0	0					
Read CDB's	. 0	0	0					
Write CDB's	. 0	34	34					
Other CDB's	. 0	0	0					
Vendor SPecific CDB's	. 0	0	0					
Undefined CDB's	. 0	0	0					

Table 7: SWB-03 NIST Software Write Blocker Test Suite V1.2 Output Summary

SWB-03 Test result analysis

SAFE Block Win7 Version 1.0 performed correctly – only WRITE commands were issued and all were blocked on the blocked disk.

8.4 Test Case SWB-04

This test case tests SAFE Block Win7 V1.0's compliance with SWB-AM-04. It issues all possible commands from the VENDOR_SPECIFIC command set to a single protected disk drive. It uses the same hard drive setup as SWB-03. The expected result of this test is that SAFE Block Win7 V1.0 will block all commands issued by the test application.

	Layout	Type	File System	Status	C
💼 (C:)	Simple		NTFS	Healthy (Boot, Page File, Crash Dump, Primary Partition	
BPATA (D:)	Simple	Basic	NTFS	Healthy (Primary Partition)	7
⇒ System Reserved	Simple	Basic	NTFS	Healthy (System, Active, Primary Partition)	1
(1	11		٠
			11		+
Disk 0 Basic 149.05 GB	System F 100 MB N Healthy ()	Resi ITF: 7	(C:) 73.14 GB NTFS	Page File, Crosh Dun Unallocated	+
Basic 149.05 GB Online	100 MB N	Resi ITFS Syst	(C:) 73.14 GB NTFS	75.81 GB Page File, Crash Dury Unallocated	•

- System Disk
- Blocked PATA Disk

Figure 9: SWB-04 SAFE Block Win7 v1.0 Configuration

	ual Channel PCI IDI	E Controller		
iDE Ch ⊡ <mark>_</mark> Ma	iannel ixtor 86480D6 ATA I	Device[0:0:0][6E	697373]	
🗄 🚭 NVIDIA nF	orce Serial ATA Cor	itroller		
⊕~ ≫ ST316	081 3AS SCSI Disk	Device[U:U:U][57	BAUADU	
2	<u>_</u>	0	30	C

Table 8: SWB-04 MD5 Hash Values

Before PATA Disk	7faa386805dcd5740a6a9daa23865c81
After PATA Disk	7faa386805dcd5740a6a9daa23865c81

Table 9. 300 -04 1031 Soltware write bi	OCKET TEST SU	inte v1.2 Outpu	at Summary	
Testing device \\.\PhysicalDri	vel 🛛			
Device is software WRITE PROTE	CTED			
******************** TEST RESUL	TS SUMMARY	* * * * * * * * * *	* * * * * * *	
Test Category	Allowed	Blocked	Total	
Read IRP's	0	0	0	
Write IRP's	0	0	0	
Other IRP's		0	0	
Read CDB's	0	0	0	
Write CDB's	0	0	0	
Other CDB's		0	0	
Vendor SPecific CDB's	0	80	80	
Undefined CDB's	0	0	0	

Table 9: SWB-04 NIST Software Write Blocker Test Suite V1.2 Output Summary

SWB-04 Test result analysis

SAFE Block Win7 Version 1.0 performed correctly - only VENDOR SPECIFIC commands were issued and all were blocked on the blocked disk.

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8.5 Test Case SWB-05

This test case tests SAFE Block Win7 V1.0's compliance with SWB-AM-05. It issues all possible commands from the UNDEFINED command set to a single protected disk drive. It uses the same hard drive setup as SWB-04. The expected result of this test is that SAFE Block Win7 V1.0 will block all commands issued by the test application.

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Figure 10: SWB-05 Drive Configuration

(C:)	Layout Ty	pe File System	Status		0
	Simple Ba	sic NTFS	Healthy (Boot, Page F	ile, Crash Dump, Primary Partition)	7
PATA (D:)	Simple Ba	sic NTFS	Healthy (Primary Part	ition)	7
System Reserved	Simple Ba	sic NTFS	Healthy (System, Acti	ve, Primary Partition)	1
		m	1		
< [III			'
Disk 0					
Basic	System Rese 100 MB NTFS			75.81 GB	
			, Page File, Crash Dun	Unallocated	
149.05 GB	Healthy (Syst	Healtry (BOOL		onallocated	
149.05 GB Online	Healthy (Syst			onanocateu	

- System Disk
- Blocked PATA Disk

Figure 11: SWB-05 SAFE Block Win7 v1.0 Configuration

1] C]
C]

Table 10: SWB-05 MD5 Hash Values

Before PATA Disk	7faa386805dcd5740a6a9daa23865c81
After PATA Disk	7faa386805dcd5740a6a9daa23865c81

	DIOCKCI TCSU		Jut Summa
Testing device \\.\PhysicalDri	vel		
Device is software WRITE PROTE	CTED		
**************************************	S SUMMARY	* * * * * * * * * * *	* * * * * *
Test Category	Allowed	Blocked	Total
Read IRP's	0	0	0
Write IRP's	0	0	0
Other IRP's	0	0	0
Read CDB's		0	0
Write CDB's	0	0	0
Other CDB's	0	0	0
Vendor SPecific CDB's	0	0	0
Undefined CDB's	0	53	53

Table 11: SWB-05 NIST Software Write Blocker Test Suite V1.2 Output Summary

SWB-05 Test result analysis

SAFE Block Win7 Version 1.0 performed correctly - only UNDEFINED commands were issued and all were blocked on the blocked disk.

8.6 Test Case SWB-06

This test case tests SAFE Block Win7 V1.0's compliance with SWB-AM-06. It issues all possible commands from the OTHER command set to a single protected disk drive. It uses the same hard drive setup as SWB-05. The expected result of this test is that SAFE Block Win7 V1.0 will allow all commands issued by the test application.

me Layout Type C:) Simple Basic ATA (D:) Simple Basic /stem Reserved Simple Basic	NTFS Healthy (Primary Pa	e File, Crash Dump, Prima artition) ctive, Primary Partition)	C ary Partition) 7: 7: 10				
	п	1	+				
5 GB 100 MB NTF:	(C:) 73.14 GB NTFS Healthy (Boot, Page File, Crash Dur	75.81 GB Unallocated					
isk 1				•	System D	Disk	
B 73 MB NTFS Only Healthy (Priman	Partition)			•	Blocked	PATA Disk	
	AFF Block Win7 v	1 0 Configura	ation				
re 13: SWB-06 S SAFE Block Win7 t SEAN-PC Standard G-G IDE C B-G NVIDIA n	Dual Channel PCI IDE	Controller evice[0:0:0][6E6 oller	97373]				
SAFE Block Win7 t SEAN-PC Standard D- JDE C D- M IDE C D- M NVIDIA n	by ForensicSoft Dual Channel PCI IDE Channel laxtor 86480D6 ATA Do Force Serial ATA Contr	Controller evice[0:0:0][6E6 oller	97373]				

Table 12: SWB-06 MD5 Hash Values

Before PATA Disk	7faa386805dcd5740a6a9daa23865c81
After PATA Disk	7faa386805dcd5740a6a9daa23865c81

Table 15. SWD-00 MIST SUILWARE WITLE	DIOCKET TEST.	buile VI.2 Oul	ut Summary	/	
Testing device \\.\PhysicalDri	vel				
Device is software WRITE PROTE	CTED				
**************************************	TS SUMMARY	* * * * * * * * * *	* * * * * * *		
Test Category	Allowed	Blocked	Total		
Read IRP's		0	0		
Write IRP's	0	0	0		
Other IRP's	15	0	15		
Read CDB's	0	0	0		
Write CDB's	0	0	0		
Other CDB's	61	1	62		
Vendor SPecific CDB's	0	0	0		
Undefined CDB's	0	0	0		

Table 13: SWB-06 NIST Software Write Blocker Test Suite V1.2 Output Summary

SWB-06 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, SAFE Block Win7 V1.0 allowed all OTHER commands issued by the test application.

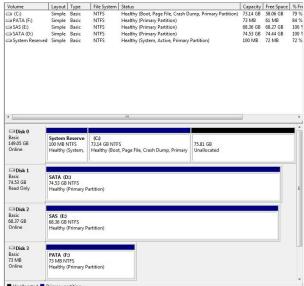
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8.7 Test Case SWB-07

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of three drives protected with the pattern PUU. The expected result of this test is SAFE Block Win7 V1.0 will:

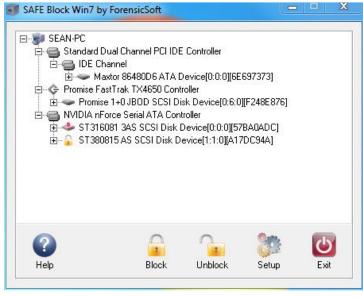
- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives

Figure 14: SWB-07 Drive Configuration



- System Disk
- Blocked SATA Drive
- Unblocked SAS Drive
- Unblocked PATA Disk

Figure 15: SWB-07 SAFE Block Win7 v1.0 Configuration



Before SATA (Disk 1)	83cad49376689a38d63b8675e5f8d264
After SATA (Disk 1)	83cad49376689a38d63b8675e5f8d264
Before SAS (Disk 2)	6aee27eb7896a55dcd8fa4a844653c31
After SAS (Disk 2)	9ef75918e6653363c5d41e685c3eebb8
Before PATA (Disk 3)	cf09438a7eac1a1bc1b46fabe818396f
After PATA (Disk 3)	2495d0a5e08fcef6ff4c846f9c30a152

Table 14: SWB-07 MD5 Hash Values

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Testing device \\.\PhysicalDrivel Device is software WRITE PROTECTED Test Category Allowed Blocked Total Read IRP's 0 4 Write IRP's 0 34 Other IRP's 0 34 Other CDB's 27 0 Write CDB's 0 34 Other CDB's 0 34 Other CDB's 0 34 Other CDB's 0 34 Other CDB's 0 35 Testing device (\.\PhysicalDrive2 0 53 Device is software WRITE ENABLED 0 4 ************************************	Table 15: SWB-07 NIST Software Write		Suite V1.2 Outp	out Summa	ary
Test Category Allowed Blocked Total Read IRP's 0 8 8 Other IRP's 0 8 8 Other IRP's 15 0 15 Read CDB's 27 0 27 Write CDB's 0 34 34 Other CDB's 0 34 34 Other CDB's 0 53 53 Testing device (\.\PhysicalDrive2 0 53 53 Test Category Allowed Blocked Total Read IRP's 4 0 4 Write IRP's 15 0 15 Read CDB's 27 0 27 Write CRP's 15 0 15 Read CDB's 27 0 27 Write CRP's 34 0 4 Other CRP's 53 0 53 Test Category Allowed Blocked Total Test Category Allowed<					
Test Category Allowed Blocked Total Read IRP's 0 8 8 Other IRP's 0 8 8 Other IRP's 15 0 15 Read CDB's 27 0 27 Write CDB's 0 34 34 Other CDB's 0 34 34 Other CDB's 0 53 53 Testing device (\.\PhysicalDrive2 0 53 53 Test Category Allowed Blocked Total Read IRP's 4 0 4 Write IRP's 15 0 15 Read CDB's 27 0 27 Write CRP's 15 0 15 Read CDB's 27 0 27 Write CRP's 34 0 4 Other CRP's 53 0 53 Test Category Allowed Blocked Total Test Category Allowed<					
Read IRP's 4 0 4 Write IRP's 0 8 8 Other IRP's 15 0 15 Read CDB's 0 34 34 Other IRP's 0 34 34 Other CDB's 0 34 34 Other CDB's 0 53 53 Testing device \\.\PhysicalDrive2 0 53 53 Device is software WRITE ENABLED 15 0 15 ************************************	**************************************	TS SUMMARY	*******	*****	
Read IRP's 4 0 4 Write IRP's 0 8 8 Other IRP's 15 0 15 Read CDB's 0 34 34 Other IRP's 0 34 34 Other CDB's 0 34 34 Other CDB's 0 53 53 Testing device \\.\PhysicalDrive2 0 53 53 Device is software WRITE ENABLED 15 0 15 ************************************	Test Category	Allowed	Blocked	Total	
Other IRP's 15 0 15 Read CDB's 27 0 27 Write CDB's 0 34 34 Other CDB's 0 80 80 Undefined CDB's 0 53 53 Testing device \\.\PhysicalDrive2 Device is software WRITE ENABLED Test Category Allowed Minite IRP's 4 0 4 Write IRP's 8 0 8 Other CDB's 15 0 15 Read IRP's 4 0 4 Write IRP's 8 0 8 Other CDB's 15 0 15 Read CDB's 27 0 27 Write CDB's 62 0 62 Vendor SPecific CDB's 62 0 62 Vendor SPecific CDB's 53 0 53 Device is software WRITE ENABLED 53 0 53 Testing device \\.\PhysicalDrive3 0 4 4 Mrite IRP's 4 0 4 Write IRP's<					
Read CDB's 27 0 27 Write CDB's 0 34 34 Other CDB's 0 80 80 Undefined CDB's 0 53 53 Testing device \\.\PhysicalDrive2 0 53 53 Testing device \\.\PhysicalDrive2 0 50 53 Testing device \\.\PhysicalDrive2 0 53 53 Testing device \\.\PhysicalDrive2 0 50 53 Marine CDB's 4 0 4 Write IRP's 4 0 4 Write CDB's 27 0 27 Write CDB's 27 0 27 Write CDB's 62 0 62 Undefined CDB's 53 0 53 Testing device \\.\PhysicalDrive3 0 53 0 Device is software WRITE ENABLED 15 0 15 Read IRP's 4 0 4 0 Write CDB's 53 0 53 15 Device is software WRITE ENABLED 15 0	Write IRP's	0	8	8	
Testing device \\.\PhysicalDrive2 Device is software WRITE ENABLED ************************************	Other IRP's	15	0	15	
Testing device \\.\PhysicalDrive2 Device is software WRITE ENABLED ************************************	Poad CDB's	27	0	27	
Testing device \\.\PhysicalDrive2 Device is software WRITE ENABLED ************************************	Write CDB 5	27	24	27	
Testing device \\.\PhysicalDrive2 Device is software WRITE ENABLED ************************************	WILLE CDB'S	0	34	54	
Testing device \\.\PhysicalDrive2 Device is software WRITE ENABLED ************************************	Other CDB's	61	1	62	
Testing device \\.\PhysicalDrive2 Device is software WRITE ENABLED ************************************	Vendor SPecific CDB's	0	80	80	
Device is software WRITE ENABLED ************************************	Undefined CDB's	0	53	53	
Read IRP's 4 0 4 Write IRP's 8 0 8 Other IRP's 15 0 15 Read CDB's 27 0 27 Write CDB's 34 0 34 Other CDB's 62 0 62 Vendor SPecific CDB's 80 0 80 Undefined CDB's 53 0 53 Testing device \\.\PhysicalDrive3 0 53 0 Device is software WRITE ENABLED 80 0 80 ************************************	Device is software WRITE ENABL	ED	*****	****	
Read IRP's	Test Category	Allowed	Blocked	Total	
Read CDB's 27 0 27 Write CDB's 34 0 34 Other CDB's 62 0 62 Vendor SPecific CDB's 80 0 80 Undefined CDB's 53 0 53 Testing device \\.\PhysicalDrive3 0 53 0 Device is software WRITE ENABLED ************************************					
Read CDB's 27 0 27 Write CDB's 34 0 34 Other CDB's 62 0 62 Vendor SPecific CDB's 80 0 80 Undefined CDB's 53 0 53 Testing device \\.\PhysicalDrive3 0 53 0 Device is software WRITE ENABLED ************************************	Write IRP's	8	0	8	
Read CDB's 27 0 27 Write CDB's 34 0 34 Other CDB's 62 0 62 Vendor SPecific CDB's 80 0 80 Undefined CDB's 53 0 53 Testing device \\.\PhysicalDrive3 0 53 0 Device is software WRITE ENABLED ************************************	Other IRP's	15	0	15	
Vendor SPecific CDB's 80 0 80 Undefined CDB's 53 0 53 Testing device \\.\PhysicalDrive3 Device is software WRITE ENABLED ***************** TEST RESULTS SUMMARY ************************************					
Vendor SPecific CDB's 80 0 80 Undefined CDB's 53 0 53 Testing device \\.\PhysicalDrive3 Device is software WRITE ENABLED ***************** TEST RESULTS SUMMARY ************************************	Read CDB's	27	0	27	
Vendor SPecific CDB's 80 0 80 Undefined CDB's 53 0 53 Testing device \\.\PhysicalDrive3 Device is software WRITE ENABLED ***************** TEST RESULTS SUMMARY ************************************	Write CDB's	34	0	34	
Vendor SPecific CDB's 80 0 80 Undefined CDB's 53 0 53 Testing device \\.\PhysicalDrive3 Device is software WRITE ENABLED ***************** TEST RESULTS SUMMARY ************************************	Other CDB's	62	0	62	
Testing device \\.\PhysicalDrive3 Device is software WRITE ENABLED ************************************	Vendor SPecific CDB's	80	0	80	
Device is software WRITE ENABLED ***********************************	Undefined CDB's	53	0	53	
Test Category Allowed Blocked Total Read IRP's 4 0 4 Write IRP's 8 0 8 Other IRP's 15 0 15 Read CDB's 27 0 27 Write CDB's 34 0 34 Other CDB's 62 0 62 Vendor SPecific CDB's 80 0 80	Device is software WRITE ENABL	ED			
Read IRP's 4 0 4 Write IRP's 8 0 8 Other IRP's 15 0 15 Read CDB's 27 0 27 Write CDB's 34 0 34 Other CDB's 62 0 62 Vendor SPecific CDB's 80 0 80	**************************************	TS SUMMARY	********	*****	
Read CDB's 27 0 27 Write CDB's 34 0 34 Other CDB's 62 0 62 Vendor SPecific CDB's 80 0 80					
Read CDB's 27 0 27 Write CDB's 34 0 34 Other CDB's 62 0 62 Vendor SPecific CDB's 80 0 80	Read IRP's	4	0	4	
Read CDB's 27 0 27 Write CDB's 34 0 34 Other CDB's 62 0 62 Vendor SPecific CDB's 80 0 80	Write IRP's	8	0	8	
Write CDB'S 34 0 34 Other CDB'S 62 0 62 Vendor SPecific CDB'S 80 0 80	Other IRP's	15	0	15	
Write CDB's 34 0 34 Other CDB's 62 0 62 Vendor SPecific CDB's 80 0 80	Read CDB's	27	0	27	
Other CDB's 62 0 62 Vendor SPecific CDB's 80 0 80		.3.4	0	.3.4	
Vendor SPecific CDB's 80 0 80					
Undefined CDB's 53 0 53			0		

Table 15: SWB-07 NIST Software Write Blocker Test Suite V1.2 Output Summary

SWB-07 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disk and no commands were blocked on the unblocked disks.

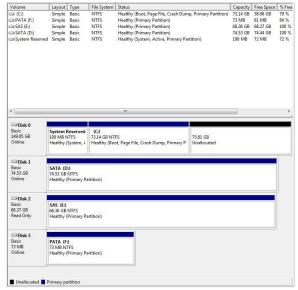
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8.8 Test Case SWB-08

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of three drives protected with the pattern UPU. The expected result of this test is SAFE Block Win7 V1.0 will:

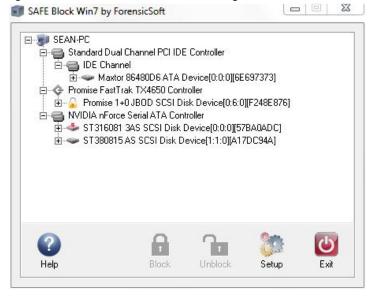
- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives

Figure 16: SWB-08 Drive Configuration



- System Disk
- Unblocked SATA Drive
- Blocked SAS Drive
- Unlocked PATA Disk

Figure 17: SWB-08 SAFE Block Win7 v1.0 Configuration



Before SATA (Disk 1)	6ef1e77f8528d2237d10c3825dde0baa
After SATA (Disk 1)	e08a80bebae45efcccae0482a43922dc
Before SAS (Disk 2)	1100e42523512b2e707456f5c2d8b8bc
After SAS (Disk 2)	1100e42523512b2e707456f5c2d8b8bc
Before PATA (Disk 3)	2495d0a5e08fcef6ff4c846f9c30a152
After PATA (Disk 3)	d49744f275558360542742814ec10aaf

Table 16: SWB-08 MD5 Hash Values

Testing device \\.\PhysicalDriv Device is software WRITE ENABLE			
***** TEST RESULT	IS SUMMARY	. *********	******
Test Category	Allowed	Blocked	Total
Read IRP's	4	0	4
Write IRP's	8	0	
Write IRP's Other IRP's	15	0	15
Read CDB's	27	0	27
Write CDB's	34	0	
Write CDB's Other CDB's	62	0	62
Vendor SPecific CDB's	80	0	80
Vendor SPecific CDB's Undefined CDB's	53	0	53
Testing device \\.\PhysicalDriv Device is software WRITE PROTEC	CTED		
***** TEST RESULT	I'S SUMMARY	*******	*****
Test Category	Allowed	Blocked	Total
Read IRP's	4	0	4
Write IRP's	0	8	8
Other IRP's	15	0	15
Read CDB's	27	0	27
Write CDB's			
Other CDB's			
Vendor SPecific CDB's	0	80	80
Undefined CDB's	0	53	53
Testing device \\.\PhysicalDriv Device is software WRITE ENABLE			
***** TEST RESULT	IS SUMMARY	*******	******
Test Category	Allowed	Blocked	Total
Read IRP's Write IRP's	8	0	8
Other IRP's	15	0	15
Read CDB's	27	0	27
Write CDB's		0	34
Other CDB's	62	0	62
Other CDB's Vendor SPecific CDB's		0	62 80

Table 17: SWB-08 NIST Software Write Blocker Test Suite V1.2 Output Summary

SWB-08 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disk and no commands were blocked on the unblocked disks.

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8.9 Test Case SWB-09

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of three drives protected with the pattern UUP. The expected result of this test is SAFE Block Win7 V1.0 will:

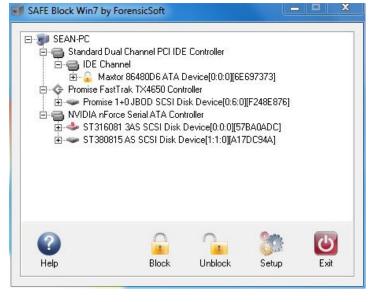
- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives

Figure 18: SWB-09 Drive Configuration

Volume	Layout	Туре	File System	Status	Capacity	Free Space	% Fre				
🗀 (C:)	Simple	Basic	NTFS	Healthy (Boot, Page File, Crash Dump, Primary Partition)	73.14 GB	58.06 GB	79 %				
PATA (F:)	Simple	Basic	NTFS	Healthy (Primary Partition)	73 MB	61 MB	84 %				
SAS (E:)	Simple		NTFS	Healthy (Primary Partition)	68.36 GB	68.27 GB	100 %				
SATA (D:)	Simple	Basic	NTFS	Healthy (Primary Partition)	74.53 GB	74.44 GB	100 %				
System Reserved	Simple	Basic	NTFS	Healthy (System, Active, Primary Partition)	100 MB	72 MB	72 %				
4				ш.			•				
Disk 0											
Basic	asic System Reserved		(C:)								
149.05 GB 100 MB NTFS			73.14 GB NTFS 75.81 GB								
Online	Healthy (System, / Healthy (Boot			ot, Page File, Crash Dump, Primary Partition)ocated							
Disk 1											
	SATA (D:)										
	74.53 GB NTFS Healthy (Primary Partition)										
	incontrily (initially i c	interestiy								
Disk 2											
	SAS (E:)										
68.37 GB	68.36 GB NTFS										
Online	Healthy (Primary Partition)										
Basic											
	PATA (F:)										
	73 MB NTFS Healthy (Primary Partition)										
	· · contrary (a county								
Unallocated P	rimary pa	rtition									

- System Disk
- Unblocked SATA Drive
- Unblocked SAS Drive
- Blocked PATA Disk

Figure 19: SWB-09 SAFE Block Win7 v1.0 Configuration



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Before SATA (Disk 1)	8f3e382c2ab70b6c37d87b7cf1cc5361				
After SATA (Disk 1)	9e470705af69c8d3cd7de03b254b1ef6				
Before SAS(Disk 2)	2f9d7ea6da998db74054dc7da9422bba				
After SAS (Disk 2)	7655a570cd58fe6c2f7175a3a9bbc773				
Before PATA (Disk 3)	2d5c9fae6429a027d408fed7a7ba1ac5				
After PATA (Disk 3)	2d5c9fae6429a027d408fed7a7ba1ac5				

Table 18: SWB-09 MD5 Hash Values

Testing device \\.\PhysicalDriv			
Device is software WRITE ENABL	ED		
**************************************	S SUMMARY	*******	* * * * * *
			m 1
Test Category	Allowed	BIOCKED	IOLAL
Read IRP's Write IRP's Other IRP's	4	0	4
Write IRP's	8	0	8
Other IRP's	15	0	15
Sener fit 5	10	0	10
Read CDB's	2.7	0	27
Write CDB's			
Other CDB's	62	0	62
Wender Specific CDPIs	02		
Vendor SPecific CDB's Undefined CDB's	53	0 0	80 53
underined CDB.S	53	0	53
Testing doution \\ \Dhusicslowin			
Testing device \\.\PhysicalDriv			
Device is software WRITE ENABL	50		
*****		****	* * * * * *
**************************************	5 SUMMARY	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ 	~ ~ ^ ^ ^ ^
Tost Catogory	Allowed	Plackod	Total
Test Category	ATTOMED	DIOCKEO	
Read IRP's Write IRP's	r Q	0	r Q
Other IRP's	15	0	15
OUNEL IRP'S	10	0	τЭ
Read CDB's	27	0	27
Write CDB's			
Other CDB's		0	54 62
Vendor SPecific CDB's	80	0	
Undefined CDB's	53	0	53
	2		
Testing device \\.\PhysicalDriv			
Device is software WRITE PROTE	CIED		
			ala ala da da 2020.
***** TEST RESULT:	5 SUMMARY	~ ~ ~ ~ ~ <i>~ ~ ~ ~ * *</i> *	~ ^ ^ ~ ~ ~
Test Category	Allowed	Blocked	Total
Read IRP's Write IRP's Other IRP's	0	Ř	Ŕ
Other IRP's	15	0	15
OCHCI IN 5	τJ	0	τJ
Read CDB's	27	0	27
Read CDB's Write CDB's	0	34	34
Other CDB's			62
Vendor SPecific CDB's		80	80
Undefined CDB's	0	53	53

Table 19: SWB-09 NIST Software Write Blocker Test Suite V1.2 Output Summary

SWB-09 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disk and no commands were blocked on the unblocked disks.

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8.10 Test Case SWB-10

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of three drives protected with the pattern UPP. The expected result of this test is SAFE Block Win7 V1.0 will:

- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives

Figure 20: SWB-10 Drive Configuration

ple Basic ple Basic	NTFS NTFS	Healthy (Boot, Page File, Crash Dump, Primary Partition)	73.14 GB	58.06 GB	79 %			
ole Basic	NITEC				19 %			
	NIFD	Healthy (Primary Partition)	73 MB	61 MB	84 %			
ole Basic	NTFS	Healthy (Primary Partition)	68.36 GB	68.27 GB	100 %			
	NTFS	Healthy (Primary Partition)	74.53 GB	74.44 GB	100 %			
ole Basic	100 MB	72 MB	72 %					
		m			,			
	1							
m Reserved	(C:)							
hy (System, 4	Healthy (Boo	ot, Page File, Crash Dump, Primary P. Unallocated						
	P.	P						
SATA (D) 7433 (G) N175 Healthy (Primary Partition)								
	artition)							
BNTFS								
hy (Primary P	artition)							
	m Reserved Basic m Reserved May 100 hy (System, / A (D-) GB NTFS hy (Primary P) (E-) GB NTFS hy (Primary P) (E-) (C-) (C-) (C-) (C-) (C-) (C-) (C-) (C	m Reserved m Reserved M (5) (5) (4) (5) (4) (5) (5) (5) (5) (5) (5) (5) (5) (5) (5	Ple Basic NTFS Healthy (Primary Partition) Ple Basic NTFS Healthy (System, Active, Primary Partition) To m Reserved [10] Planting Partition (CO) Planting	ple Basic NTFS Healthy (Primary Partition) 74.33 GB ple Basic NTFS Healthy (System, Active, Primary Partition) 109 MB m Received [75] m Received [75] 17.34 GB NTFS hy (System, / Healthy (Boot, Page File, Crash Dump, Primary P Unallocated MDD GB NTFS hy (Primary Partition) 160 GB NTFS NFS [10] 160 161 162 163 164 164 165 165 165 165 165 165 165 165	Pie Basic NTFS Healthy (Pymany Partition) 74.53 GB 74.44 GB Pie Basic NTFS Healthy (System, Active, Primary Partition) 70.53 GB 74.44 GB T2.43 GB 72.48 Piemered T60 T60 T60 T60 T75 T75 T60 T75			

- System Disk
- Unblocked SATA Drive •
- **Blocked SAS Drive** •
- Blocked PATA Disk

Figure 21: SWB-10 SAFE Block Win7 v1.0 Configuration



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Before SATA (Disk 1)	9e470705af69c8d3cd7de03b254b1ef6							
After SATA (Disk 1)	ff3590f843d959bed88c7e03112f15d0							
Before SAS (Disk 2)	1fc8e2376856704d69dabb1d9bc508ef							
After SAS (Disk 2)	1fc8e2376856704d69dabb1d9bc508ef							
Before PATA (Disk 3)	2d5c9fae6429a027d408fed7a7ba1ac5							
After PATA (Disk 3)	2d5c9fae6429a027d408fed7a7ba1ac5							

Table 20: SWB-10 MD5 Hash Values

Testing device \\.\PhysicalDri Device is software WRITE ENABLE			
***** TEST RESULT	S SUMMARY	* * * * * * * * * * *	* * * * * *
Test Category	Allowed	Blocked	Total
Read IRP's	4	0	4
Write IRP's	8	0	-
Write IRP's Other IRP's	15	0	8 15
Read CDB's	27	0	27
Write CDB's	34	0	
Other CDB's	62	0	
Vendor SPecific CDB's	80		0.0
Vendor SPecific CDB's Undefined CDB's	53	0	
Testing device \\.\PhysicalDri Device is software WRITE PROTE	ve2 CTED		****
Test Category			
Read IRP's	4	0	4
Write IRP's	0	8	8
Other IRP's	15	0	15
Read CDB's Write CDB's	27	0	27
Write CDB's	0	34	34
Other CDB's	61	1	62
Other CDB's Vendor SPecific CDB's	0	80	80
Undefined CDB's	0	1 80 53	53
Testing device \\.\PhysicalDri Device is software WRITE PROTE			
***** TEST RESULT	S SUMMARY	* * * * * * * * * * *	* * * * * *
Test Category	Allowed	Blocked	Total
Read IRP's Write IRP's Other IRP's	4	0	4
Write IRP's	0	8	8
Other IRP's	15	0	15
Read CDB's	27	0	27
Write CDB's	0		34
Other CDB's			62
Vendor SPecific CDB's		80	
Undefined CDB's	0	53	53
onderthed CDR. 2	U	53	53

Table 21: SWB-10 NIST Software Write Blocker Test Suite V1.2 Output Summary

SWB-010 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result twice in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disk and no commands were blocked on the unblocked disks.

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8.11 Test Case SWB-11

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of three drives protected with the pattern PUP. The expected result of this test is SAFE Block Win7 V1.0 will:

- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives

Figure 22: SWB-11 Drive Configuration

Volume	Layout	Туре	File System	Status	Capacity	Free Space	% Fre
\Rightarrow (C:)	Simple	Basic	NTFS	Healthy (Boot, Page File, Crash Dump, Primary Partition)	73.14 GB	58.06 GB	79 %
PATA (F:)	Simple	Basic	NTFS	Healthy (Primary Partition)	73 MB	61 MB	84 %
	Simple	Basic	NTFS	Healthy (Primary Partition)	68.36 GB	68.27 GB	100 %
SATA (D:)	Simple	Basic	NTFS	Healthy (Primary Partition)	74.53 GB	74.44 GB	100 %
System Reserved	Simple	Basic	NTFS	Healthy (System, Active, Primary Partition)	100 MB	72 MB	72 %
<				m			Þ
Disk 0			1				
	System H	Reserved	(C;)				
149.05 GB	100 MB N		73.14 GB NT				
Online	Healthy (System, /	Healthy (Bor	ot, Page File, Crash Dump, Primary P Unallocated			
74.53 GB	SATA (D 74.53 GB						
Read Only	Healthy (Primary Pa	artition)				
Disk 2							
68.37 GB	SAS (E:) 68.36 GB Healthy (NTFS Primary Pa	artition)				
Disk 3							
73 MB	PATA (F: 73 MB N Healthy (artition)				

• Blocked SATA Drive

•

System Disk

- Unblocked SAS Drive
- Blocked PATA Disk

Figure 23: SWB-11 SAFE Block Win7 v1.0 Configuration



Before SATA (Disk 1)	0df62f9603fd5d9438bcd3aab5d0b7a6							
After SATA (Disk 1)	0df62f9603fd5d9438bcd3aab5d0b7a6							
Before SAS (Disk 2)	b579ae756904274e983327cb034ee151							
After SAS (Disk 2)	f6b065e486137f4c95a05adc9f7822a5							
Before PATA (Disk 3)	2d5c9fae6429a027d408fed7a7ba1ac5							
After PATA (Disk 3)	2d5c9fae6429a027d408fed7a7ba1ac5							

Table 22: SWB-11 MD5 Hash Values

Testing device \\.\PhysicalDri Device is software WRITE PROTE	vel		
***** TEST RESUL		*****	* * * * * * *
Test Category	Allowed	Blocked	Total
Read IRP's	4	0	4
Write IRP's	0	8	8
Write IRP's Other IRP's	15	0	15
Read CDB's	27	0	27
Write CDB's	0	34	34
Other CDB's	61	1	62
Vendor SPecific CDB's Undefined CDB's	0	34 1 80 53	80 53
Undefined CDB's	0	53	53
Testing device \\.\PhysicalDri Device is software WRITE ENABL			
**************************************	S SUMMARY	* * * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Read IRP's Write IRP's Other IRP's	4	0	4
Write IRP's	8	0	8
Other IRP's	15	0	15
Read CDB's	27	0	27
Write CDB's	34	0	34
Other CDB's	62	0	62
Vendor SPecific CDB's	80	0	80
Undefined CDB's	53	0	53
Testing device \\.\PhysicalDri	ve3		
Device is software WRITE PROTE			
***** TEST RESULT	S SUMMARY	* * * * * * * * * * *	* * * * * *
Test Category	Allowed	Blocked	Total
Kead IKP's	4	0	4 8
write IKP's	15	8	
Read IRP's Write IRP's Other IRP's	10	U	15
Read CDB's			
Write CDB's			
Other CDB's		1	62
Vendor SPecific CDB's		80	80
Undefined CDB's	0	53	53

Table 23: SWB-11 NIST Software Write Blocker Test Suite V1.2 Output Summary

SWB-011 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result twice in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disk and no commands were blocked on the unblocked disks.

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8.12 Test Case SWB-12

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of three drives protected with the pattern PPU. The expected result of this test is SAFE Block Win7 V1.0 will:

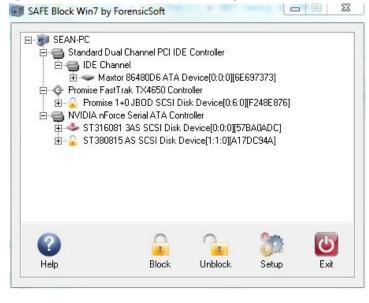
- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives

Figure 24: SWB-12 Drive Configuration

Volume	Layout	Туре	File System	Status		Capacity	Free Space	% Fre	
⇒ (C:)	Simple	Basic	NTFS	Healthy (Boot, Page File, Crash Dump, Pri	73.14 GB	58.06 GB	79 %		
PATA (F:)	Simple	Basic	NTFS	Healthy (Primary Partition)	73 MB	61 MB	84 %		
	Simple	Basic	NTFS	Healthy (Primary Partition)	68.36 GB	68.27 GB	100 %		
SATA (D:)	Simple	Basic	NTFS	Healthy (Primary Partition)	74.53 GB	74.44 GB	100 %		
⇒ System Reserved	Simple	Basic	NTFS	Healthy (System, Active, Primary Partition)	100 MB	72 MB	72 %	
٠ [m				Þ	
Disk 0									
Basic	System F	Reserved	(C:)						
	100 MB N		73.14 GB NT		BI GB				
Online	Healthy (System, /	Healthy (Bo	ot, Page File, Crash Dump, Primary P Una	allocated				
Disk 1									
	SATA (D								
	74.53 GB NTFS Healthy (Primary Partition)								
Read Only	Healthy (Primary Pa	artition)						
Disk 2									
	SAS (E:)								
	68.36 GB	NTFS Primary Pa							
ited only	Healtriy (enmaty ea	arduon)						
Disk 3									
	PATA (F:								
73 MB	73 MB N1		1000						
	Healthy (r lillidiy Fi							
	Healthy (r iiiiaiy ra							

Unallocated Primary partition

Figure 25: SWB-12 SAFE Block Win7 v1.0 Configuration



• System Disk

- Blocked SATA Drive
- Blocked SAS Drive
- Unblocked PATA Disk

Before SATA (Disk 1)	0df62f9603fd5d9438bcd3aab5d0b7a6							
After SATA (Disk 1)	0df62f9603fd5d9438bcd3aab5d0b7a6							
Before SAS (Disk 2)	f6b065e486137f4c95a05adc9f7822a5							
After SAS (Disk 2)	f6b065e486137f4c95a05adc9f7822a5							
Before PATA (Disk 3)	2987d2a2702715f48ce1426f50225647							
After PATA (Disk 3)	f5777b80453809e36f60a51779912398							

Table 24: SWB-12 MD5 Hash Values

Testing device \\.\PhysicalDriv Device is software WRITE PROTEC			
***** TEST RESULTS	S SUMMARY	* * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Pood TPD's	1	0	4
Write IRP's	0	8	8
Write IRP's Other IRP's	15	0	15
Read CDB's	27	0	27
Write CDB's	0	34	34
Other CDB's	61	1	34 62
Vendor SPecific CDB's	0	80	80
Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's	0	53	53
Testing device \\.\PhysicalDriv Device is software WRITE PROTEC			
***** TEST RESULTS	S SUMMARY	* * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Read IRP's Write IRP's	0	8	
Other IRP's	15		
Read CDB's Write CDB's	27	0	27
Write CDB's	0	34	34
Other CDB's	61	1	62
Vendor SPecific CDB's		80	80
Undefined CDB's	0	1 80 53	53
Testing device \\.\PhysicalDriv Device is software WRITE ENABLE			
***** TEST RESULTS		* * * * * * * * * * *	*****
Test Category			
Read IRP's	4	0	4
Write IRP's	8	0	8
Read IRP's Write IRP's Other IRP's	15	0	15
Read CDB's			
Write CDB's	34	0	34
Other CDB's			
Vendor SPecific CDB's	80	0	80
Undefined CDB's	53	0	53

Table 25: SWB-12 NIST Software Write Blocker Test Suite V1.2 Output Summary

SWB-012 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result twice in this test – Variation 1 described in Section 2.1 Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disk and no commands were blocked on the unblocked disks.

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8.13 Test Case SWB-13

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of four drives protected with the pattern PUUP. The expected result of this test is SAFE Block Win7 V1.0 will:

- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives

Figure 26: SWB-13 Drive Configuration

Volume	Lavout	Type	File System	Status	Capacity	Free Space	36
(C:)	Simple 8			Healthy (Boot, Page File, Crash Dump, Primary Partition)	73.14 GB	57.91 GB	79
PATA (F:)	Simple 8	Basic I	NTES	Healthy (Primary Partition)	73 MB	61 MB	84
SAS (E:)	Simple 8	Basic I	NTES	Healthy (Primary Partition)	68.36 GB	68.27 GB	10
SATA (D:)	Simple 8	Basic I	NTES	Healthy (Primary Partition)	74.53 GB	74.44 GB	10
System Reserved	Simple 8	Basic I	NTES	Healthy (System, Active, Primary Partition)	100 MB	72 MB	72
- USB (J:)	Simple 8	Basic I	NTES	Healthy (Active, Primary Partition)	949 MB	883 MB	93
•				u)			•
Disk 0							
Basic	System Re		(C:)				
149.05 GB Online	100 MB NT		73.14 GB I	NTFS Boot, Page File, Crash Dump, Priman Unallocated			
Online	Healthy (S)	ystem,	Healthy (a	soot, Page Hile, Crash Dump, Primarj			
Disk 1							
Basic	SATA (D:)						
74.53 GB Read Only	74.53 GB N Healthy (Pr		(artition)				
includ only	Heatiny (P	rimary i	raticion)				
Disk 2							
Basic 68.37 GB	SAS (E:) 68.36 GB N						
Online	Healthy (Pr		artition				
	including ()		orocomy			_	
Disk 3	_						
Basic	PATA (F;)	12					
73 MB Online	73 MB NTF Healthy (Pr		(antition)				
onne	ricality (Fi	initially i	alociony				
-Disk 4							
Removable 956 MB	USB (J:)						
Read Only	949 MB NT		rimary Partit	tion)			
	reasonity (H	cure, P	in many Partit	oury .			

- System Disk
- Blocked SATA Disk
- Unblocked SAS Drive
- Unblocked PATA Drive
- Blocked USB Drive

Figure 27: SWB-13 SAFE Block Win7 v1.0 Configuration



Before SATA (Disk 1)	0df62f9603fd5d9438bcd3aab5d0b7a6
After SATA (Disk 1)	0df62f9603fd5d9438bcd3aab5d0b7a6
Before SAS (Disk 2)	2e16235f9d9416766a6836ef1f2599e0
After SAS (Disk 2)	b63f723d089fe552ce8413edf033a349
Before PATA (Disk 3)	9276e8493ead632820f4d7ce02a6a499
After PATA (Disk 3)	0dc9a5cd0f8829fadf3eee6e2606c7a3
Before USB (Disk 4)	25d207edf06182349e5fd64082af2c10
After USB (Disk 4)	25d207edf06182349e5fd64082af2c10

Table 26: SWB-13 MD5 Hash Values

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Testing device \\.\PhysicalDriv Device is software WRITE PROTE			
***** TEST RESULT:	S SUMMARY	* * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Read IRP's	4	0	4
Write IRP's	0	8	8
Read IRP's Write IRP's Other IRP's	15	0	15
Read CDB's	27	0	27
Write CDB's	0	34	34
Other CDB's	61	1	62
Vendor SPecific CDB's	0	80	80
Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's	0	53	53
Testing device \\.\PhysicalDriv Device is software WRITE ENABLE	ve2 ED		
***** TEST RESULTS	S SUMMARY	* * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Write IRP's	8	õ	8
Read IRP's Write IRP's Other IRP's	15	0	15
Read CDB'S	∠ / ⊃ /	U	2/
	34	0	34 60
Other CDB's	60		02
Read CDB's Write CDB's Other CDB's Vender Specific CDB's	62 00	0	0 ^
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv	80 53 ve3	0	80 53
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ***************** TEST RESULTS Test Category	80 53 Ve3 ED S SUMMARY Allowed	0 0 **************** Blocked	80 53 ****** Total
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLI ************************************	80 53 ve3 ED S SUMMARY Allowed	0 0 *********** Blocked	80 53 ****** Total
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLI ************************************	80 53 ve3 ED S SUMMARY Allowed	0 0 *********** Blocked	80 53 ****** Total
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLI ****************** TEST RESULTS Test Category	80 53 ve3 ED S SUMMARY Allowed	0 0 *********** Blocked	80 53 ****** Total
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ************************************	80 53 2D 5 SUMMARY Allowed 4 8 15	0 0 ************ Blocked 0 0 0	80 53 Total 4 8 15
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ************************************	80 53 2D 5 SUMMARY Allowed 4 8 15 27 34	0 0 ************ Blocked 0 0 0	80 53 Total 4 8 15
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ************************************	80 53 2D 5 SUMMARY Allowed 4 8 15 27 34	0 0 ************ Blocked 0 0 0	80 53 Total 4 8 15
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ************************************	80 53 2D 5 SUMMARY Allowed 15 27 34 62	0 0 *********** Blocked 0 0 0 0 0 0 0 0 0	80 53
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ************************************	80 53 2D 5 SUMMARY Allowed 15 27 34 62	0 0 *********** Blocked 0 0 0 0 0 0 0 0 0	80 53 Total 4 8 15 27 34 62
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ************************************	80 53 2D S SUMMARY Allowed 4 8 15 27 34 62 80 53 27	0 0 0 8 10cked 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	80 53 Total 4 8 15 27 34 62 80
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY *********************** TEST RESULTS Test Category Read IRP's Write IRP's Read CDB's Write CDB's Vendor SPecific CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv	80 53 20 5 SUMMARY Allowed 4 8 15 27 34 62 80 53 27 27 34 62 80 53	0 0 ************ Blocked 0 0 0 0 0 0 0 0 0 0 0 0 0	80 53
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ****************** TEST RESULTS Test Category 	80 53 Ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 Ve4 CTED S SUMMARY Allowed	0 0 0 ********************************	80 53 Total Total 4 8 15 27 34 62 80 53
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ************************************	80 53 Ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 Ve4 CTED S SUMMARY Allowed	0 0 0 ********************************	80 53 Total Total 4 8 15 27 34 62 80 53
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ******************* TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 Ve3 ED S SUMMARY Allowed 	0 0 0 ********************************	80 53 Total 4 8 15 27 34 62 80 53 *******
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ************************************	80 53 Ve3 ED S SUMMARY Allowed 	0 0 0 ********************************	80 53 ****** 4 8 15 27 34 62 80 53 ******* Total
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ************************************	80 53 Ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 Ve4 CTED S SUMMARY Allowed 4 0 15	0 0 0 ********************************	80 53
<pre>Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ****************** TEST RESULTS Test Category </pre>	80 53 Ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 Ve4 CTED S SUMMARY Allowed 	0 0 0 ********************************	80 53
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ******************** TEST RESULTS Test Category Read IRP'S Write IRP'S Read CDB's Read CDB's Write CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 Ve3 ED 5 SUMMARY Allowed 4 8 15 27 34 62 80 53 Ve4 CTED 5 SUMMARY Allowed 4 0 15 27 0	0 0 0 ********************************	80 53 Total 4 8 15 27 34 62 80 53 53 ******* Total 4 8 15 27 34 53
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ******************* TEST RESULTS Test Category Read IRP'S Write IRP'S Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 20 5 SUMMARY Allowed 4 8 15 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 61 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0 0 0 ********************************	80 53 Total 4 8 15 27 34 62 80 53 53 ******* Total 15 4 8 15 27 34 62 80 53
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ******************** TEST RESULTS Test Category Read IRP'S Write IRP'S Read CDB's Read CDB's Write CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 Ve3 ED 5 SUMMARY Allowed 4 8 15 27 34 62 80 53 Ve4 CTED 5 SUMMARY Allowed 4 0 15 27 0 61 0	0 0 0 ********************************	80 53 Total 4 8 15 27 34 62 80 53 53 ******* Total 4 8 15 27 34 53

Table 27: SWB-13 NIST Software Write Blocker Test Suite V1.2 Output Summary

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SWB-013 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result twice in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disk and no commands were blocked to the unblocked disks.

8.14 Test Case SWB-14

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of four drives protected with the pattern UUPP. The expected result of this test is SAFE Block Win7 V1.0 will:

- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued • to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives •
- Pass all commands from all categories issued to unprotected drives

Figure 28: SWB-14 Drive Configuration

C:)	Simple Basic NTFS Healthy (Boot, Page Simple Basic NTFS Healthy (Boot, Page Simple Basic NTFS Healthy (Primary Pi	File, Crash Dump, Primary Partiti	on) 73.14 GB 57.91 GB 79 5 73 MB 61 MB 84 5				
SAS (E)	Simple Basic NTFS Healthy (Primary Pa Simple Basic NTFS Healthy (Primary Pa	rtition) rtition)	68.36 GB 68.27 GB 100 74.53 GB 74.44 GB 100				
System Reser	rved Simple Basic NTFS Healthy (System, A Simple Basic NTFS Healthy (Active, Pri	tive, Primary Partition) nary Partition)	100 MB 72 MB 72 5 949 MB 883 MB 93 5				
CarDisk 0			•				
Basic 149.05 GB Online	System Reserve 100 MB NTFS Healthy (System, Healthy (Boot, Page File, Crash	75.81 GB					
Disk 1		· · · · · · · · · · · · · · · · · · ·					
Basic 74.53 GB Online	SATA (D:) 74.33 GB NTFS Healthy (Primary Partition)						
Disk 2	Treating (Finnary Factoria)						
Basic 68.37 GB Online	SAS (E:) 68.36 GB NTFS Healthy (Primary Partition)						
	Treating (Timby Factoria)						
Basic 73 MB Read Only	PATA (F:) 73 MB NTFS Healthy (Primary Partition)					•	System Disk
Disk 4						•	Unblocked SATA Disk
Removable 956 MB Read Only	USB (J:) 949 MB NTFS Healthy (Active, Primary Partition)					•	Unblocked SAS Drive
Unallocated	Primary partition					•	Blocked PATA Drive
						•	Blocked USB Drive
Figure	29: SWB-14 SAFE	Block Win7	v1.0 Configu	ration			
SA 🗐	FE Block Win7 by For	ensicSoft					
	🗊 SEAN-PC						
	🖻 📹 Standard Dual I		E Controller				
	🖻 🚭 IDE Channe		D				
	E-		Device[0:0:0][68	.697373]			
1	E			IF248E8761			
	E ANVIDIA nForce			-10 240E0701			
				7BAQADC1			
	🗄 🖨 USB Mass Stor		•				
	🗄 🔓 USB DISK		;e[0:0:0]				
	2	A	0	903	4		
		Dia di		all all			
	Help	Block	Unblock	Setup	Exit		

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Before SATA (Disk 1)	23dcf789a4ded841939184d046e9d7a4
After SATA (Disk 1)	701082f7e32288ebf7acaa850a784eed
Before SAS (Disk 2)	b63f723d089fe552ce8413edf033a349
After SAS (Disk 2)	8170c85da753aa3e720f3b3ed2d8f5f5
Before PATA (Disk 3)	13dc3feafe9a19739fcc0f11583713aa
After PATA (Disk 3)	13dc3feafe9a19739fcc0f11583713aa
Before USB (Disk 4)	25d207edf06182349e5fd64082af2c10
After USB (Disk 4)	25d207edf06182349e5fd64082af2c10

Table 28: SWB-14 MD5 Hash Values

Testing device \\.\PhysicalDriv Device is software WRITE ENABLE			
***** TEST RESULTS		* * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Read IRP's	4	0	4
Write IRP's	8	0	8
Read IRP's Write IRP's Other IRP's	15	0	15
Read CDB's Write CDB's Other CDB's	27	0	27 34
Write CDB's	34	0	34
Other CDB's	62	0	62
Vendor SPecific CDB's	80	0	80
Other CDB's Vendor SPecific CDB's Undefined CDB's	53	0	53
Testing device \\.\PhysicalDriv Device is software WRITE ENABLE			
***** TEST RESULTS	SUMMARY	* * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
 Read IRP's			
Write IRP's	Ŕ	0	Ω
Read IRP's Write IRP's Other IRP's	15	0	15
Poad CDB's	27	0	27
Mead CDD 5		U	2/
Marita CDDIa	≺4	U	34
Write CDB's	51	~	
Write CDB's Other CDB's	62	0	62
Write CDB's Other CDB's	62 80	0 0	80
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's	80 53	0 0 0	62 80 53
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 7e3 CTED 5 SUMMARY Allowed	0 0 **********************************	80 53 *****
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 7e3 CTED S SUMMARY Allowed	0 0 *********** Blocked	80 53 ****** Total
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 7e3 CTED S SUMMARY Allowed	0 0 *********** Blocked	80 53 ****** Total
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 7e3 CTED S SUMMARY Allowed	0 0 *********** Blocked	80 53 ****** Total
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 7e3 CTED S SUMMARY Allowed	0 0 *********** Blocked	80 53 ****** Total
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 CTED S SUMMARY Allowed 4 0 15	0 0 *********** Blocked 0 8 0	80 53 ****** Total 4 8 15
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 CTED S SUMMARY Allowed 4 0 15	0 0 *********** Blocked 0 8 0	80 53 ****** Total 4 8 15
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 CTED S SUMMARY Allowed 4 0 15 27 0	0 0 ************ Blocked 0 8 0 0 34	80 53 Total 4 8 15 27 34
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 TED 5 SUMMARY Allowed 4 0 15 27 0 61	0 0 *********** Blocked 0 8 0 0 34 1	80 53 ****** Total 4 8 15 27 34 62
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 TED 5 SUMMARY Allowed 4 0 15 27 0 61 0	0 0 *********** Blocked 0 8 0 0 34 1 80	80 53 ****** Total 4 8 15 27 34 62 80
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 TED 5 SUMMARY Allowed 4 0 15 27 0 61 0 0 0	0 0 *********** Blocked 0 8 0 0 34 1	80 53 ****** Total 4 8 15 27 34 62
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ****************** TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv	80 53 2TED 3 SUMMARY Allowed 15 27 0 61 0 0 27 27 0 61 0 0	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53
Write CDB's Other CDB's Vendor SPecific CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 TED S SUMMARY Allowed 	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ***************** TEST RESULTS Test Category Read IRP's Write IRP's Read CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 ZTED S SUMMARY Allowed 	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ******* Total
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ***************** TEST RESULTS Test Category Read IRP's Write IRP's Read CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 ZTED S SUMMARY Allowed 	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ******* Total
Write CDB's Other CDB's Vendor SPecific CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ****************** TEST RESULTS Test Category Read IRP's Write IRP's Write IRP's Read CDB's Write CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 ZTED 3 SUMMARY Allowed 	0 0 **********************************	80 53 ****** Total 15 27 34 62 80 53 ****** Total
<pre>Write CDB's</pre>	80 53 ZTED S SUMMARY Allowed 	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ****** Total ****** 4 8 15
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ****************** TEST RESULTS Test Category </pre>	80 53 2TED 3 SUMMARY Allowed 4 0 15 27 0 61 0 0 24 2TED 3 SUMMARY Allowed 	0 0 **********************************	80 53 ******* Total 4 8 15 27 34 62 80 53 ******* Total ******* 4 8 15 27 34 62 80 53
<pre>Write CDB's</pre>	80 53 2TED 3 SUMMARY Allowed 	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ******* Total 4 8 15 27 34
Write CDB's	80 53 2TED 5 SUMMARY Allowed 	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 4 8 15 27 34 62 27 34 62
<pre>Write CDB's</pre>	80 53 2TED 3 SUMMARY Allowed 	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ******* Total 4 8 15 27 34

Table 29: SWB-14 NIST Software Write Blocker Test Suite V1.2 Output Summary

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SWB-014 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result twice in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disk and no commands were blocked to the unprotected disk.

8.15 Test Case SWB-15

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of four drives protected with the pattern UPPP. The expected result of this test is SAFE Block Win7 V1.0 will:

- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives

Figure 30: SWB-15 Drive Configuration

	Layout	Type	File System	Status	Capacity	Free
🗃 (C:)	Simple	Basic	NTFS	Healthy (Boot, Page File, Crash Dump, Primary Partition)	73.14 GB	57.6
PATA (F:)	Simple			Healthy (Primary Partition)	73 MB	65 N
SAS (E:)	Simple			Healthy (Primary Partition)	68.36 GB	68.2
SATA (D:)	Simple			Healthy (Primary Partition)	74.53 GB	74.4
System Reserved USB (J:)	Simple			Healthy (System, Active, Primary Partition) Healthy (Active, Primary Partition)	100 MB 949 MB	72 N 889
< [٢
Disk 0						- A
	System R		(C:)			
149.05 GB	100 MB N	ITFS	73.14 GB NT			
Online	Healthy (Syste	Healthy (Boo	ot, Page File, Crash Dump, P Unallocated		
Disk 1 Basic	SATA (D					
	74.53 GB Healthy (Partition)			
			Partition)			
Online Disk 2 Basic 68.37 GB	Healthy () SAS (E:) 68.36 GB	Primary	Partition)			Е
Online Disk 2 Basic 68.37 GB Read Only Disk 3	Healthy () SAS (E:) 68.36 GB Healthy ()	Primary NTFS Primary		-		н
Online Online Basic 68.37 GB Read Only Basic 73 MB	Healthy () SAS (E:) 68.36 GB Healthy () PATA (F: 73 MB NT	Primary NTFS Primary) IFS				H
Online Disk 2 Basic 68.37 GB Read Only Disk 3 Basic 73 MB Read Only Disk 4	Healthy () SAS (E:) 68.36 GB Healthy () PATA (F: 73 MB NT Healthy ()	Primary NTFS Primary) IFS	Partition)			E
Online Disk 2 Basic 68.37 GB Read Only Disk 3 Basic 73 MB Read Only Disk 4 Removable 956 MB	Healthy () 5AS (E:) 68.36 GB () Healthy () PATA (F: 73 MB N1 Healthy () USB (J2) 949 MB N	Primary NTFS Primary) FFS Primary	Partition)	Lion)		E

- System Disk •
- Unblocked SATA Disk •
- **Blocked SAS Drive** •
- Blocked PATA Drive •
- Blocked USB Drive

Figure 31: SWB-15 SAFE Block Win7 v1.0 Configuration



Before SATA (Disk 1)	9c2648f22a862ce25ae1482f2a8f3c63
After SATA (Disk 1)	6a30fd95dca10475a39a7d18b1ee179e
Before SAS (Disk 2)	152cd396792e09ae37ff8ace07d7650d
After SAS (Disk 2)	152cd396792e09ae37ff8ace07d7650d
Before PATA (Disk 3)	13dc3feafe9a19739fcc0f11583713aa
After PATA (Disk 3)	13dc3feafe9a19739fcc0f11583713aa
Before USB (Disk 4)	25d207edf06182349e5fd64082af2c10
After USB (Disk 4)	25d207edf06182349e5fd64082af2c10

Table 30: SWB-15 MD5 Hash Values

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Cesting device ¥¥.¥PhysicalDri Device is software WRITE ENABL			
**************************************	S SUMMARY	* * * * * * * * * * *	* * * * * *
Test Category	Allowed	Blocked	Total
Read IRP's		0	4
Write IRP's			
Other IRP's	15	0	
other nu 5	10	0	10
Read CDB's	27	0	27
Write CDB's		0	
Other CDB's		0	62
Vendor Specific CDB's Undefined CDB's	52	0	53
Underined CDB S	55	0	55
Cesting device ¥¥.¥PhysicalDri Device is software WRITE PROTE			
***** TEST RESULT	S SUMMARY	* * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Read IRP's			4
Write TPD!c	0	0	0
Other IRP's	15	0	15
other nu 5	10	0	10
Read CDB's	27	0	27
Write CDB's	0		
Other CDB's	61	1	62
()ther ('DR's			80
		80	
Vendor Specific CDB's Undefined CDB's esting device ¥¥.¥PhysicalDri	0 0 ve3	80 53	53
	0 0 Ve3 CTED		53
Vendor Specific CDB's Undefined CDB's Testing device ¥¥.¥PhysicalDri Device is software WRITE PROTE	0 0 CTED S SUMMARY	* * * * * * * * * * *	*****
Vendor Specific CDB's Undefined CDB's esting device ¥¥.¥PhysicalDri evice is software WRITE PROTE ************************************	0 0 Ve3 CTED S SUMMARY Allowed	**************************************	53 ****** Total
Vendor Specific CDB's Undefined CDB's esting device ¥¥.¥PhysicalDri evice is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's	0 0 Ve3 CTED S SUMMARY Allowed	**************************************	53 ****** Total 4
Vendor Specific CDB's Undefined CDB's esting device ¥¥.¥PhysicalDri evice is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's Write IRP's	0 0 CTED S SUMMARY Allowed 4 0	*********** Blocked 0 8	53 ****** Total 4 8
Vendor Specific CDB's Undefined CDB's esting device ¥¥.¥PhysicalDri evice is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's	0 0 CTED S SUMMARY Allowed 4 0	*********** Blocked 0 8	53 ****** Total 4 8
Vendor Specific CDB's Undefined CDB's esting device ¥¥.¥PhysicalDri evice is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's Write IRP's Other IRP's	0 0 CTED S SUMMARY Allowed 4 0 15	*********** Blocked 0 8 0	53 ****** Total 4 8 15
Vendor Specific CDB's Undefined CDB's Cesting device ¥¥.¥PhysicalDri Device is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's Write IRP's Other IRP's Read CDB's	0 0 VE3 CTED S SUMMARY Allowed 15 27	************ Blocked 0 8 0 0	53 ****** Total 4 8 15 27
Vendor Specific CDB's Undefined CDB's esting device ¥¥.¥PhysicalDri evice is software WRITE PROTE ***************** TEST RESULT Test Category 	0 0 CTED S SUMMARY Allowed 15 27 0	**************************************	53 ****** Total 4 8 15 27 34
Vendor Specific CDB's Undefined CDB's Sesting device ¥¥.¥PhysicalDri Device is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Other CDB's	0 0 CTED S SUMMARY Allowed 15 27 0 61	**************************************	53 ****** Total 4 8 15 27 34 62
Vendor Specific CDB's Undefined CDB's Sesting device ¥¥.¥PhysicalDri Device is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Other CDB's Vendor Specific CDB's	0 0 CTED S SUMMARY Allowed 15 27 0 61 0	**************************************	53 ****** Total 4 8 15 27 34 62 80
Vendor Specific CDB's Undefined CDB's esting device ¥¥.¥PhysicalDri evice is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Other CDB's	0 0 CTED S SUMMARY Allowed 15 27 0 61	**************************************	53 ****** Total 4 8 15 27 34 62
Vendor Specific CDB's Undefined CDB's Desting device ¥¥.¥PhysicalDri Device is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Other CDB's Vendor Specific CDB's	0 0 Ve3 CTED S SUMMARY Allowed 4 0 15 27 0 61 0 0 0 ve4	**************************************	53 ****** Total 4 8 15 27 34 62 80
Vendor Specific CDB's Undefined CDB's Desting device ¥¥.¥PhysicalDri Device is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's Write IRP's Other IRP's Other IRP's Write CDB's Other CDB's Vendor Specific CDB's Undefined CDB's Esting device ¥¥.¥PhysicalDri	0 0 Ve3 CTED S SUMMARY Allowed 15 27 0 61 0 0 0 ve4 CTED	**************************************	53 ****** Total 4 8 15 27 34 62 80 53
Vendor Specific CDB's Undefined CDB's Desting device ¥¥.¥PhysicalDri Device is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Other CDB's Undefined CDB's Undefined CDB's Est ing device ¥¥.¥PhysicalDri Device is software WRITE PROTE ************************************	0 0 VE3 CTED S SUMMARY Allowed 4 0 15 27 0 61 0 0 0 ve4 CTED S SUMMARY	**************************************	53 ****** Total 4 8 15 27 34 62 80 53
Vendor Specific CDB's Undefined CDB's Desting device ¥¥.¥PhysicalDri Device is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's Write IRP's Other IRP's Other IRP's Read CDB's Write CDB's Other CDB's Undefined CDB's Undefined CDB's Eesting device ¥¥.¥PhysicalDri Device is software WRITE PROTE ************************************	0 0 Ve3 CTED S SUMMARY Allowed 	**************************************	53 ****** Total 4 8 15 27 34 62 80 53
Vendor Specific CDB's Undefined CDB's Testing device ¥¥.¥PhysicalDri Device is software WRITE PROTE ************************************	0 0 Ve3 CTED S SUMMARY Allowed 4 0 15 27 0 61 0 0 0 0 ve4 CTED S SUMMARY Allowed 4	**************************************	53 ****** 4 8 15 27 34 62 80 53 ****** Total 4
Vendor Specific CDB's Undefined CDB's Desting device ¥¥.¥PhysicalDri Device is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's Write IRP's Other IRP's Other IRP's Read CDB's Write CDB's Other CDB's Undefined CDB's Undefined CDB's Eesting device ¥¥.¥PhysicalDri Device is software WRITE PROTE ************************************	0 0 Ve3 CTED S SUMMARY Allowed 	**************************************	53 ****** Total 4 8 15 27 34 62 80 53 ****** Total
Vendor Specific CDB's Undefined CDB's Testing device ¥¥.¥PhysicalDri Device is software WRITE PROTE ************************************	0 0 Ve3 CTED S SUMMARY Allowed 27 0 61 0 0 0 ve4 CTED S SUMMARY Allowed 4 0 15	**************************************	53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 4 8 15
Vendor Specific CDB's Undefined CDB's Testing device ¥¥.¥PhysicalDri Device is software WRITE PROTE ***************** TEST RESULT Test Category Read IRP's Write IRP's Read CDB's Write CDB's Vendor Specific CDB's Undefined CDB's Vendor Specific CDB's Undefined CDB's Test is software WRITE PROTE ************************************	0 0 Ve3 CTED S SUMMARY Allowed 27 0 61 0 0 0 ve4 CTED S SUMMARY Allowed 4 0 15	**************************************	53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 4 8
Vendor Specific CDB's Undefined CDB's Testing device ¥¥.¥PhysicalDri Device is software WRITE PROTE ************************************	0 0 Ve3 CTED S SUMMARY Allowed 	**************************************	53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 4 8 15
Vendor Specific CDB's Undefined CDB's Device is software WRITE PROTE ************************************	0 0 Ve3 CTED S SUMMARY Allowed 4 0 15 27 0 61 0 0 Ve4 CTED S SUMMARY Allowed 15 27 0 15 27	**************************************	53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 4 8 15 27
Vendor Specific CDB's Undefined CDB's Desting device ¥¥.¥PhysicalDri Device is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's Write IRP's Other IRP's Read CDB's Other CDB's Undefined CDB's Undefined CDB's Esting device ¥¥.¥PhysicalDri Device is software WRITE PROTE ************************************	0 0 Ve3 CTED S SUMMARY Allowed 4 0 15 27 0 61 0 0 Ve4 CTED S SUMMARY Allowed 	**************************************	53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 4 8 15 27 34 27 34
Vendor Specific CDB's Undefined CDB's Desting device ¥¥.¥PhysicalDri Device is software WRITE PROTE ****************** TEST RESULT Test Category Read IRP's Write IRP's Other IRP's Read CDB's Undefined CDB's Undefined CDB's Undefined CDB's Eesting device ¥¥.¥PhysicalDri Device is software WRITE PROTE ************************************	0 0 Ve3 CTED S SUMMARY Allowed 4 0 15 27 0 61 0 0 Ve4 CTED S SUMMARY Allowed 	**************************************	53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 4 8 15 27 34 62

Table 31: SWB-15 NIST Software Write Blocker Test Suite V1.2 Output Summary

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SWB-015 Test result analysis

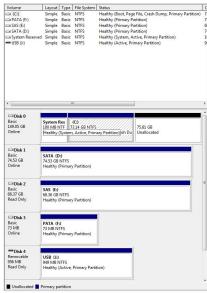
SAFE Block Win7 Version 1.0 had one unexpected result three times in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disk and no commands were blocked to the unprotected disk.

8.16 Test Case SWB-16

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of four drives protected with the pattern UPUP. The expected result of this test is SAFE Block Win7 V1.0 will:

- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives •
- Pass all commands from all categories issued to unprotected drives

Figure 32: SWB-16 Drive Configuration



- System Disk •
- Unblocked SATA Disk •
- **Blocked SAS Drive** •
- Unblocked PATA Drive •
- Blocked USB Drive

Figure 33: SWB-16 SAFE Block Win7 v1.0 Configuration



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Before SATA (Disk 1)	6a30fd95dca10475a39a7d18b1ee179e
After SATA (Disk 1)	adbe84ae988d0afbb05c623f641b11d9
Before SAS (Disk 2)	152cd396792e09ae37ff8ace07d7650d
After SAS (Disk 2)	152cd396792e09ae37ff8ace07d7650d
Before PATA (Disk 3)	69f64dcd6e6928f8faaaa658661d95a4
After PATA (Disk 3)	d9213c607e5c695b16e6ea46e2900599
Before USB (Disk 4)	25d207edf06182349e5fd64082af2c10
After USB (Disk 4)	25d207edf06182349e5fd64082af2c10

Table 32: SWB-16 MD5 Hash Values

Device is software WRITE ENABLE	vel ED		put Summ
***** TEST RESULT	S SUMMARY	* * * * * * * * * * *	*****
Test Category			
Read IRP's	4	0	4
Write IRP's	8	0	8
Read IRP's Write IRP's Other IRP's			
Read CDB's Write CDB's Other CDB's	27	0	27
Write CDB's	34	0	34
Other CDB's	62	0	62
Vendor SPecific CDB's	80	0	80
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's	53	0	53
Testing device \\.\PhysicalDri Device is software WRITE PROTE			
***** TEST RESULT:	S SUMMARY	* * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Read IRP's	4	0	4
Write IRP's	0	8	8
Read IRP's Write IRP's Other IRP's	15	0	15
Read CDB's	27	0	27
Write CDB's	2,	34	34
Read CDB's Write CDB's Other CDB's	61	1	62
Vendor SPecific CDB's	Ū.	80	80
Vendor SPecific CDB's Undefined CDB's	Õ	53	53
Testing device \\.\PhysicalDri Device is software WRITE ENABL ************************************	ve3 ED S SUMMARY Allowed	************ Blocked	Total
Device is software WRITE ENABLE ************************************	ve3 ED S SUMMARY Allowed	************ Blocked	Total
Device is software WRITE ENABLE ************************************	ve3 ED S SUMMARY Allowed	************ Blocked	Total
Device is software WRITE ENABLE ************************************	ve3 ED S SUMMARY Allowed	************ Blocked	Total
Device is software WRITE ENABLE ************************************	ve3 ED S SUMMARY Allowed 4 8 15	************* Blocked 0 0 0	Total 4 8 15
Device is software WRITE ENABLE ************************************	ve3 ED S SUMMARY Allowed 4 8 15	************* Blocked 0 0 0	Total 4 8 15
Device is software WRITE ENABLE ************************************	ve3 ED S SUMMARY Allowed 4 8 15 27 34	**************************************	Total 4 8 15 27 34
Device is software WRITE ENABLE ************************************	ve3 ED S SUMMARY Allowed 4 8 15 27 34 62	**************************************	Total 4 8 15 27 34 62
Device is software WRITE ENABLE ***************** TEST RESULT Test Category 	ve3 ED S SUMMARY Allowed 4 8 15 27 34 62	**************************************	Total 4 8 15 27 34
Device is software WRITE ENABLE ***************** TEST RESULT Test Category 	ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 vve4	**************************************	Total 4 8 15 27 34 62 80
Device is software WRITE ENABLE ************************************	ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 ve4 CTED	**************************************	Total 4 8 15 27 34 62 80 53
Device is software WRITE ENABLE ************************************	ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 ve4 CTED S SUMMARY Allowed	**************************************	Total 4 8 15 27 34 62 80 53
Device is software WRITE ENABLA ************************************	ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 ve4 CTED S SUMMARY Allowed	**************************************	Total 4 8 15 27 34 62 80 53
Device is software WRITE ENABLA ************************************	ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 ve4 CTED S SUMMARY Allowed 4 0	**************************************	Total 4 8 15 27 34 62 80 53
Device is software WRITE ENABLA ************************************	ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 ve4 CTED S SUMMARY Allowed 4 0	**************************************	Total 4 8 15 27 34 62 80 53
Device is software WRITE ENABLA ************************************	ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 ve4 CTED S SUMMARY Allowed 4 0 15	**************************************	Total 4 8 15 27 34 62 80 53 ****** Total 4 8 15
Device is software WRITE ENABLA ************************************	ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 ve4 CTED S SUMMARY Allowed 15 27	**************************************	Total 4 8 15 27 34 62 80 53 53 ******* Total 4 8 15 27
Device is software WRITE ENABLA ************************************	ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 ve4 CTED S SUMMARY Allowed 4 0 15 27 0	**************************************	Total 4 8 15 27 34 62 80 53 53 ******* Total 4 8 15 27 34
Device is software WRITE ENABLA ************************************	ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 ve4 CTED S SUMMARY Allowed 15 27 0 15 27 0 61	**************************************	Total 4 8 15 27 34 62 80 53 53 ******* Total 15 27 34 62
Device is software WRITE ENABLA ************************************	ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 ve4 CTED S SUMMARY Allowed 4 0 15 27 0 61 0	**************************************	Total 4 8 15 27 34 62 80 53 53 ******* Total 4 8 15 27 34

Table 33: SWB-16 NIST Software Write Blocker Test Suite V1.2 Output Summary

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SWB-016 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result twice in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disks and no commands were blocked to the unprotected disks.

8.17 Test Case SWB-17

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of four drives protected with the pattern PUPU. The expected result of this test is SAFE Block Win7 V1.0 will:

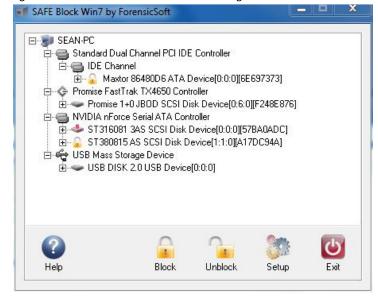
- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives

Figure 34: SWB-17 Drive Configuration



- System Disk •
- **Blocked SATA Disk** •
- Unblocked SAS Drive •
- Blocked PATA Drive •
- Unblocked USB Drive

Figure 35: SWB-17 SAFE Block Win7 v1.0 Configuration



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Before SATA (Disk 1)	96ef347150ccc94cff63156afeaee636
After SATA (Disk 1)	96ef347150ccc94cff63156afeaee636
Before SAS (Disk 2)	80471981319c4cd323045f5e54722483
After SAS (Disk 2)	387ad19ea6cd9c87b82ee2a5fc8907d6
Before PATA (Disk 3)	9b8b7831599f29751cc3253b5106347e
After PATA (Disk 3)	9b8b7831599f29751cc3253b5106347e
Before USB (Disk 4)	4d80409ff1839a482e75af378eb0bd8d
After USB (Disk 4)	a2c21832dd0617f3961a3f07528307bf

Table 34: SWB-17 MD5 Hash Values

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Testing device \\.\PhysicalDriv Device is software WRITE PROTEC			
***** TEST RESULTS	S SUMMARY	* * * * * * * * * * *	* * * * * *
Test Category	Allowed	Blocked	Total
Read IRP's Write IRP's Other IRP's	4	0	4
Write IRP's	0	8	8
Other IRP's	15	0	15
Read CDB's	27	0	27
Write CDB's	0	34	34
Other CDB's	61	1	62
Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's	0	80 53	53
Testing device \\.\PhysicalDriv Device is software WRITE ENABLE	ve2		
***** TEST RESULTS	SUMMARY	* * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Bood IPD's	л		·
Kead IKP'S	4	U	4
Read IRP's Write IRP's Other IRP's	۲ ۲ ۲	U	8 1 F
Read CDB's	27	0	27
Write CDB's Other CDB's	34	0	34
	62	0	62
Other CDB's			0.0
Vendor SPecific CDB's Undefined CDB's	80 53	0	80 53
Vendor SPecific CDB's	80 53 7e3 CTED	0	53
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ****************** TEST RESULTS Test Category	80 53 7e3 STED S SUMMARY Allowed	0 0 *********** Blocked	53 ****** Total
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTE(************************************	80 53 TED S SUMMARY Allowed	0 0 ************ Blocked	53 ****** Total
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTE(************************************	80 53 TED S SUMMARY Allowed	0 0 ************ Blocked	53 ****** Total
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************ TEST RESULTS Test Category	80 53 TED S SUMMARY Allowed	0 0 ************ Blocked	53 ****** Total
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 CTED S SUMMARY Allowed 	0 0 *********** Blocked 0 8 0	53 ****** Total 4 8 15
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 CTED S SUMMARY Allowed 	0 0 *********** Blocked 0 8 0	53 ****** Total 4 8 15
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 2TED 3 SUMMARY Allowed 	0 0 *********** Blocked 0 8 0 0 34	53 ****** Total 4 8 15 27 34
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 2TED 3 SUMMARY Allowed 4 0 15 27 0 61	0 0 *********** Blocked 0 8 0 0 34 1	53 ****** Total 4 8 15 27 34 62
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 2TED 3 SUMMARY Allowed 4 0 15 27 0 61	0 0 *********** Blocked 0 8 0 0 34 1	53 ****** Total 4 8 15 27 34 62
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 2TED 3 SUMMARY Allowed 4 0 15 27 0 61 0 0 0 27	0 0 *********** Blocked 0 8 0 0 34 1 80	53 ****** Total 4 8 15 27 34 62 80
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 2TED 3 SUMMARY Allowed 	0 0 ************ Blocked 0 8 0 0 34 1 80 53	53 ****** Total 15 27 34 62 80 53
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 2TED 3 SUMMARY Allowed 	0 0 ************ Blocked 0 8 0 0 34 1 80 53	53 ****** Total 15 27 34 62 80 53
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 ZTED S SUMMARY Allowed 15 27 0 61 0 0 61 0 0 27 0 61 0 0 27 0 61 0 0 27 0 4 27 0 61 0 0 27 0 4 15 27 0 4 15 27 0 4 15 27 0 4 15 27 27 0 4 27 0 27 0 4 27 0 27 0 27 27 27 27 27 27 27 27 27 27 27 27 27	0 0 **********************************	53 ****** Total 4 8 15 27 34 62 80 53
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 ZTED S SUMMARY Allowed 15 27 0 61 0 0 61 0 0 27 0 61 0 0 27 0 61 0 0 27 0 4 27 0 61 0 0 27 0 4 15 27 0 4 15 27 0 4 15 27 0 4 15 27 27 0 4 27 0 27 0 4 27 0 27 0 27 27 27 27 27 27 27 27 27 27 27 27 27	0 0 **********************************	53 Total 4 8 15 27 34 62 80 53 ******* Total
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 ZTED S SUMMARY Allowed 15 27 0 61 0 0 7e4 2D S SUMMARY Allowed	0 0 **********************************	53 Total 4 8 15 27 34 62 80 53 ****** Total
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 ZTED S SUMMARY Allowed 	0 0 ************ Blocked 0 8 0 0 34 1 80 53 ***********************************	53 ******* Total 4 8 15 27 34 62 80 53 ******* Total ******* Total
<pre>Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************</pre>	80 53 2TED 3 SUMMARY Allowed 	0 0 0 *********** Blocked 0 34 1 80 53 *********** Blocked 0 0 0 0 0 0	53 ****** Total 4 8 15 27 34 62 80 53 ******* Total 4 8 15 27
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 2TED 3 SUMMARY Allowed 4 0 15 27 0 61 0 0 724 25 3 SUMMARY Allowed 4 8 15 27 34	0 0 **********************************	53 ****** Total 4 8 15 27 34 62 80 53 ****** Total
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 2TED 3 SUMMARY Allowed 4 0 15 27 0 61 0 0 0 224 2D 3 SUMMARY Allowed 4 8 15 27 34 62	0 0 **********************************	53 Total 4 8 15 27 34 62 80 53 ******* Total 4 8 15 27 34 62 80 53 ********
<pre>Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ****************** TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Undefined CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************</pre>	80 53 2TED 3 SUMMARY Allowed 4 0 15 27 0 61 0 0 724 25 3 SUMMARY Allowed 4 8 15 27 34	0 0 **********************************	53 ****** Total 4 8 15 27 34 62 80 53 ****** Total

Table 35: SWB-17 NIST Software Write Blocker Test Suite V1.2 Output Summary

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SWB-017 Test result analysis

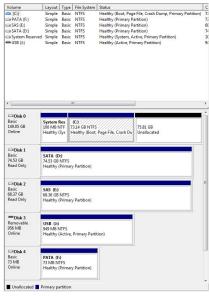
SAFE Block Win7 Version 1.0 had one unexpected result twice in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disks and no commands were blocked to the unprotected disks.

8.18 Test Case SWB-18

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of four drives protected with the pattern PPUU. The expected result of this test is SAFE Block Win7 V1.0 will:

- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives

Figure 36: SWB-18 Drive Configuration



• System Disk

- Blocked SATA Disk
- Blocked SAS Drive
- Unblocked USB Drive
- Unblocked PATA Drive

Figure 37: SWB-18 SAFE Block Win7 v1.0 Configuration



Before SATA (Disk 1)	96ef347150ccc94cff63156afeaee636
After SATA (Disk 1)	96ef347150ccc94cff63156afeaee636
Before SAS (Disk 2)	5daa12dcefbe388806509231a698172b
After SAS (Disk 2)	5daa12dcefbe388806509231a698172b
Before USB (Disk 3)	993f3e07678bdc3d68a51454c982f03e
After USB (Disk 3)	24ae16169801115f34ac591303c93a99
Before PATA (Disk 4)	967720f6b1e42fe64c30ecf57d08dded
After PATA (Disk 4)	c477900b8495d505edfe2be4beddd79d

Table 36: SWB-18 MD5 Hash Values

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Table 37: SWB-18 NIST Software Write Blocker Test Suite V1.2 Output Summary Testing device \\.\PhysicalDrivel Device is software WRITE PROTECTED						
************** TEST RESULTS SUMMARY ************************************						
Test Category						
Read TRP's	4	0	4			
Write IRP's	0	8	8			
Read IRP's Write IRP's Other IRP's	15	0	15			
Read CDB's	27	0	27			
Write CDB's	0	34	34			
Other CDB's	61	1	62			
Vendor SPecific CDB's	0	80	80			
Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's	0	53	53			
Testing device \\.\PhysicalDriv Device is software WRITE PROTEC	ve2					
***** TEST RESULTS	SUMMARY	* * * * * * * * * * *	*****			
Test Category	Allowed	Blocked	Total			
Read IRP's	4	0	4			
Write IRP's	0	Ř	8			
Read IRP's Write IRP's Other IRP's	15	0	15			
Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's	27	Ο	27			
Write CDB's	<u>ک</u> ر	34	2 / २ /			
Other CDB's	61	1	62			
Other CDD 3	01	00	02			
Vondor Specific CDP!s						
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv	0	53	53			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 2D S SUMMARY Allowed	53 *********** Blocked	53 ****** Total			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 2D S SUMMARY Allowed	53 *********** Blocked	53 ****** Total			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 2D S SUMMARY Allowed	53 *********** Blocked	53 ****** Total			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE	0 2D S SUMMARY Allowed	53 *********** Blocked	53 ****** Total			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 2D 3 SUMMARY Allowed 	53 *********** Blocked 0 0 0	53 ****** Total 4 8 15			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 2D 3 SUMMARY Allowed 	53 *********** Blocked 0 0 0	53 ****** Total 4 8 15			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 20 3 SUMMARY Allowed 4 8 15 27 34	53 *********** Blocked	53 ****** Total 4 8 15			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ********************** TEST RESULTS Test Category 	0 20 3 SUMMARY Allowed 4 8 15 27 34 62	53 *********** Blocked 0 0 0 0 0 0 0 0	53 Total 4 8 15 27 34 62			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 20 3 SUMMARY Allowed 4 8 15 27 34 62	53 *********** Blocked 0 0 0 0 0 0 0 0	53 ****** Total 4 8 15 27 34			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ****************** TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's	0 2D 3 SUMMARY Allowed 4 8 15 27 34 62 80 53 77	53 *********** Blocked 0 0 0 0 0 0 0 0 0 0 0 0 0 0	53 ****** Total 4 8 15 27 34 62 80			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************ TEST RESULTS Test Category 	0 229 25 35 35 31 34 4 8 15 27 34 62 80 53 27 34 62 80 53 27	53 ************************************	53 ****** Total 4 8 15 27 34 62 80 53			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ***************** TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Other CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 re3 D S SUMMARY Allowed 4 8 15 27 34 62 80 53 re4 2D S SUMMARY Allowed	53 ************************************	53 Total Total 4 8 15 27 34 62 80 53			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 re3 D S SUMMARY Allowed 4 8 15 27 34 62 80 53 re4 2D S SUMMARY Allowed 	53 ************************************	53 ****** Total 4 8 15 27 34 62 80 53 ******			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ***************** TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Other CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 re3 D S SUMMARY Allowed 4 8 15 27 34 62 80 53 re4 CD S SUMMARY Allowed 	53 ************************************	53 ****** Total 4 8 15 27 34 62 80 53 ****** Total			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ***************** TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 ze3 D S SUMMARY Allowed 4 8 15 27 34 62 80 53 ze4 2D S SUMMARY Allowed 4 8 8 3 27 34 62 80 53 27 34 62 80 53 28 8 8 8 15 27 34 62 80 53 28 8 8 8 8 8 8 8 8 8 8 8 8 8	53 ************************************	53 ****** Total 15 27 34 62 80 53 ****** Total 			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 ze3 D S SUMMARY Allowed 4 8 15 27 34 62 80 53 ze4 2D S SUMMARY Allowed 4 8 8 3 27 34 62 80 53 27 34 62 80 53 28 8 8 8 15 27 34 62 80 53 28 8 8 8 8 8 8 8 8 8 8 8 8 8	53 ************************************	53 ****** 4 8 15 27 34 62 80 53 ****** Total 4 8			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 ze3 D S SUMMARY Allowed 4 8 15 27 34 62 80 53 ze4 CD S SUMMARY Allowed 4 8 15	53 ************************************	53 ****** Total 4 8 15 27 34 62 80 53 ****** Total ****** 4 8 15			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 ze3 D S SUMMARY Allowed 	53 ************************************	53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ***************** TEST RESULTS Test Category Read IRP's Write IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ****************** TEST RESULTS Test Category Read IRP's Write IRP's Write IRP's Read CDB's Write IRP's Write IRP's Write CDB's Coher IRP's Read CDB's Write CDB's Write CDB's Other CDB's Write CDB's Other CDB's Other CDB's Other CDB's Other CDB's	0 ze3 D S SUMMARY Allowed 4 8 15 27 34 62 80 53 ze4 2D S SUMMARY Allowed 4 8 15 27 34 62 80 53 ze4 2D S SUMMARY 	53 ************************************	53 Total Total 4 8 15 27 34 62 80 53 53 ******* Total 15 4 8 15 27 34 62			
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 ze3 D S SUMMARY Allowed 4 8 15 27 34 62 80 53 ze4 2D S SUMMARY Allowed 4 8 15 27 34 62 80 53 ze4 20 53 ze4 15 27 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 62 80 53 ze7 34 53 ze7 34 53 ze7 34 62 80 53 ze7 34 53 ze7 34 80 53 ze7 34 80 53 ze7 34 80 53 ze7 34 80 53 ze7 34 80 53 ze7 34 80 53 ze7 34 80 53 ze7 34 80 53 ze7 34 80 53 ze7 34 80 53 ze7 34 80 53 27 34 53 27 34 80 53 27 34 53 27 34	53 ************************************	53 ******* 4 8 15 27 34 62 80 53 ****** Total 15 27 34 15 27 34			

Table 37: SWB-18 NIST Software Write Blocker Test Suite V1.2 Output Summary

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SWB-018 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result twice in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disks and no commands were blocked to the unprotected disks.

8.19 Test Case SWB-19

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of four drives protected with the pattern PUUU. The expected result of this test is SAFE Block Win7 V1.0 will:

- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives

Figure 38: SWB-19 Drive Configuration



- System Disk
- Blocked SATA Disk
- Unblocked SAS Drive
- Unblocked USB Drive
- Unblocked PATA Drive

Figure 39: SWB-19 SAFE Block Win7 v1.0 Configuration



Before SATA (Disk 1)	96ef347150ccc94cff63156afeaee636
After SATA (Disk 1)	96ef347150ccc94cff63156afeaee636
Before SAS (Disk 2)	2277d1cf1fd6736832ab737a4f52ebfc
After SAS (Disk 2)	ca3a1ebc5c19a07ec83e07db19353d43
Before USB (Disk 3)	3ff88a4f3fd95136478f911dc784d4a5
After USB (Disk 3)	03d0fd3e81cb718b860912550732604f
Before PATA (Disk 4)	97452346c0ccfb38714cca266f2624d6
After PATA (Disk 4)	d406f72b5883694e0219579ec7fbaa40

Table 38: SWB-19 MD5 Hash Values

Testing device \\.\PhysicalDriv Device is software WRITE PROTEC	vel		
***** TEST RESULTS	S SUMMARY	* * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Read IRP's Write IRP's Other IRP's	4	0	4
Write IRP's	0	8	8
Other IRP's	15	0	15
Read CDB's	27	0	27
Write CDB's	0	34	34
Other CDB's	61	1	62
Vendor SPecific CDB's	0	80	80
Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's	0	53	53
Testing device \\.\PhysicalDriv Device is software WRITE ENABLE	ve2		
***** TEST RESULTS	S SUMMARY	* * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Read IRP's	4	0	4
Write IRP's	- 8	0	8
Read IRP's Write IRP's Other IRP's	15	0	15
Read CDRIA	07	0	07
RDAU LURIS	27	U	27
Read CDB's	.34	0	34
Write CDB's	~~~		
Other CDB's	62	0	62
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's	80 53	0	62 80 53
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************</pre>	80 53 20 3 SUMMARY	0 0	80 53 *****
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************</pre>	80 53 20 3 SUMMARY Allowed	0 0 *********** Blocked	80 53 ****** Total
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************</pre>	80 53 20 3 SUMMARY Allowed	0 0 *********** Blocked	80 53 ****** Total
Write CDB'S Other CDB'S Vendor SPecific CDB'S Undefined CDB'S Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	80 53 20 3 SUMMARY Allowed	0 0 *********** Blocked	80 53 ****** Total
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************</pre>	80 53 20 3 SUMMARY Allowed	0 0 *********** Blocked	80 53 ****** Total
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ***************** TEST RESULTS Test Category </pre>	80 53 2D 3 SUMMARY Allowed 4 8 15	0 0 *********** Blocked 0 0 0	80 53 ****** Total 4 8 15
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ***************** TEST RESULTS Test Category </pre>	80 53 2D 3 SUMMARY Allowed 4 8 15	0 0 *********** Blocked 0 0 0	80 53 ****** Total 4 8 15
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ***************** TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's</pre>	80 53 2D 5 SUMMARY Allowed 4 8 15 27 34	0 0 *********** Blocked 0 0 0 0 0	80 53 ****** Total 4 8 15 27 34
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ***************** TEST RESULTS Test Category </pre>	80 53 2D 5 SUMMARY Allowed 4 8 15 27 34 62	0 0 *********** Blocked 0 0 0 0 0 0 0 0 0	80 53 ****** Total 4 8 15 27 34 62
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************</pre>	80 53 2D 5 SUMMARY Allowed 4 8 15 27 34 62 80	0 0 *********** Blocked 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	80 53 ****** Total 4 8 15 27 34 62 80
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ***************** TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Other CDB's Other CDB's</pre>	80 53 2D 5 SUMMARY Allowed 4 8 15 27 34 62 80 53 274	0 0 *********** Blocked 0 0 0 0 0 0 0 0 0	80 53 ****** Total 4 8 15 27 34 62
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ***************** TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's Other IRP's Write CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv</pre>	80 53 20 3 SUMMARY Allowed 4 8 15 27 34 62 80 53 27 4 20	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************</pre>	80 53 ZD S SUMMARY Allowed 	0 0 **********************************	80 53 ****** Total 15 27 34 62 80 53 ******
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ***************** TEST RESULTS Test Category </pre>	80 53 ZD 5 SUMMARY Allowed 	0 0 **********************************	80 53 ****** Total 15 27 34 62 80 53 ******
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ****************** TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's Other IRP's Write CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************</pre>	80 53 ZD S SUMMARY Allowed 	0 0 **********************************	80 53 ****** Total 15 27 34 62 80 53 ****** Total
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************</pre>	80 53 222 3 SUMMARY Allowed 	0 0 **********************************	80 53 ****** 4 8 15 27 34 62 80 53 ****** Total
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ***************** TEST RESULTS Test Category Read IRP's Other IRP's Read CDB's Other CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************</pre>	80 53 ZeB S SUMMARY Allowed 4 8 15 27 34 62 80 53 Ze4 2D S SUMMARY Allowed 4 8 15	0 0 **********************************	80 53 ****** 4 8 15 27 34 62 80 53 ****** Total 4 8 15
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************</pre>	80 53 20 5 SUMMARY Allowed 4 8 15 27 34 62 80 53 24 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 53 27 34 62 80 53 27 34 62 80 53 27 34 62 80 53 27 34 53 27 32 53 27 34 53 27 34 53 27 34 53 27 34 53 27 34 53 27 27 34 53 27 34 53 27 34 53 27 53 27 53 27 53 27 53 27 53 27 53 27 53 27 53 27 53 53 53 52 53 53 53 53 53 53 53 53 53 53 53 53 53	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ****** Total ****** 4 8 15 27 27
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************</pre>	80 53 2D 5 SUMMARY Allowed 4 8 15 27 34 62 80 53 27 4 8 5 53 27 4 8 5 53 27 34 5 53 27 34 5 53 27 34 5 53 27 34	0 0 **********************************	80 53 ****** 4 8 15 27 34 62 80 53 ****** Total 4 8 15 27 34
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************</pre>	80 53 723 55 55 55 55 55 55 55 55 55 55 55 55 55	0 0 **********************************	80 53 ****** 4 8 15 27 34 62 80 53 ****** Total 15 4 8 15 27 34 62 80 53
<pre>Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************</pre>	80 53 2D 5 SUMMARY Allowed 4 8 15 27 34 62 80 53 27 4 8 5 53 27 4 8 5 53 27 34 5 53 27 34 5 53 27 34 5 53 27 34	0 0 **********************************	80 53 ****** 4 8 15 27 34 62 80 53 ****** Total 4 8 15 27 34

Table 39: SWB-19 NIST Software Write Blocker Test Suite V1.2 Output Summary

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SWB-019 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disks and no commands were blocked to the unprotected disk.

8.20 Test Case SWB-20

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of four drives protected with the pattern UPPU. The expected result of this test is SAFE Block Win7 V1.0 will:

- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives

Figure 40: SWB-20 Drive Configuration

■ATA (F) Simple Basic NTTS Healthy (Primary Partition) 7 ■ ■ATA (F) Simple Basic NTTS Healthy (Primary Partition) 6 ■ ■ATA (C) Simple Basic NTTS Healthy (Primary Partition) 7 ■ ■ ■ ■ ΔTA (C) Simple Basic NTTS Healthy (Primary Partition) 1 ■ USB (J) Simple Basic NTTS Healthy (Active, Primary Partition) 9	Volume	Layout Typ	e File System	Status		C
BAS (E) Simple Baic NTFS Hashty (Primary Particion) 6 System Reserved Simple Baic NTFS Healthy (System, Active, Primary Particion) 7 System Reserved Simple Baic NTFS Healthy (System, Active, Primary Particion) 1 USB (d) Simple Baic NTFS Healthy (Active, Primary Particion) 1 USB (d) Simple Baic NTFS Healthy (Active, Primary Particion) 1	🖙 (C:)	Simple Bas	ic NTFS	Healthy (Boot, Pag	e File, Crash Dump, Primary Partition)	
a)17.1 (b) Simple Basic NTFS Healthy (Pinnary Partition) 7 a)17.1 (b) Simple Basic NTFS Healthy (Active, Primary Partition) 9 a)18.0 (c) Simple Basic NTFS Healthy (Active, Primary Partition) 9 a)17.1 (c) Simple Basic NTFS Healthy (Active, Primary Partition) 9 a)17.6 (c) Simple Basic NTFS Healthy (Active, Primary Partition) 9 a)17.6 (c) Simple Basic NTFS Healthy (Active, Primary Partition) 9 a)17.6 (c) Simple Basic NTFS Healthy (Active, Primary Partition) 9 a)16.0 (c) Simple Basic NTFS Healthy (Boot, Page File, Crash DU 75.81 (G) a)16.0 (c) Table (FF T) Table (S) (G) 10 a)16.0 (c) Table (S) (G) Healthy (Pinnary Partition) 10 a)16.4 (c) Sim (G) (FF T) Table (S) (G) (FF T) Table (S) (G) (FF T) a)16.4 (c) Sim (G) (FF T) Sim (G) (FF T) Table (S) (G) (FF T) a)16.4 (c) Sim (G) (FF T) Sim (G) (FF T) Sim (G) (FF T) a)16.4 (c) Sim (G) (FF T) Sim (G) (FF T) Sim (G) (FF T) a)16.4 (c) Sim (G) (FF T) Healthy (Pinnary Partition) 10 a)16.4 (c) Sim (G) (FF T) Healthy (Pinnary Partition)						
System Reserved Simple Basic NTFS Healthy (System (Active, Primary Partition) 31 USB (J) Simple Basic NTFS Healthy (Active, Primary Partition) 9 Healthy (Active, Primary Partition) 9 Healthy (Active, Primary Partition) 9 Port of the state						
USB (J) Simple Basic NITS Healthy (Active, Primary Partition) P						
Color C						
Choke 0 Bacc Bacc Statistics Get Statistics Get Files System Rev 17,214 GE NTTS Heatby (Societ Page File, Crash Du Unationated 7,231 GB Unationated Choke 1 Bacc Statistics Cholmen SAN (D) 24,33 GB NTTS 24,33 GB NTTS Bacc Statistics Cholmen SAN (D) 24,33 GB NTTS Bacc Statistics Cholmen Statistics Cho				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Baic Baic Baic Baic Coline Coline Baic Baic Baic Baic Baic Baic Coline Baic Baic Baic Baic Baic Baic Baic Baic	•		Π			•
148:05:00 1200:08:01 72.14:08:01/15 75.81:08 Ornine Healthy (Sys: Healthy (Boct, Page File, Crash Du Uhallocated Bacic SATA (D) 100:00 PDak 1 Bacic SATA (D) PDak 2 SAS: 60:175 100:00 68:37:08:07 65:36:08 (TITS 65:36:08 (TITS 68:37:08 56:36:08 (TITS 65:36:08 (TITS 68:37:08 58:40 100:00 PDak 2 SAS: 60:10 100:00 PSW 36 59:08 (D) 100:00 PDak 4 SHE (TITS Healthy (Primary Partition)) 100:00 PDak 4 TANE TITS Healthy (Primary Partition) 100:00 Page 4:00 SHE (TITS Healthy (Primary Partition)) 100:00 PDak 4 TATE (T) 100:00 Page 4:10 TANE TITS Healthy (Primary Partition) 100:00						h
Online Healthy (Boot, Page File, Crash Du) Unallocated TOLk 1 SAN (D) 123 06 1175 Back SAN (D) 124 30 06 1175 Colline Usable Case of the second se						
Total 1 Protect (sp) Outling Under (sp) Protect (sp) Protect (sp) Total 1 SATA (D) Protect (sp) Protect (sp) ZA (c) SATA (D) SATA (D) ZA (c) SATA (D) SATA (D) Protect (sp) SATA (D) Protect (sp) Protect (sp) SATA (D) Protect (sp) Protect (sp) Protect (sp) Protect (sp)						
Basic Chiline SATA (D) Hastity (Primary Partition) CPUA: 2 Back 68.37 GB (TS 68.37 GB (TS 73 MB (TS) 73 MB (TS)	Online	Healthy (Sys	Healthy (Boot,	Page File, Crash Du	Unallocated	
Back GAJ GB (SAS GE) Read Only (Finally Particion) Toka 3 Benoroaba Seo MB (MTS Headby (Active, Primary Particion) Toka 4 Partial (F) Table 4 Partial (F) Table 7 Table 7	Basic 74.53 GB	74.53 GB NTF				
Removable Seed Only USB (J) Healthy (Active, Primary Partition) CPDr64 Back 72 MB NTF5 Healthy (Primary Partition)	Basic 68.37 GB	68.36 GB NTF				ш
Removable Seed Only USB (J) Healthy (Active, Primary Partition) CPDr64 Back 72 MB NTF5 Healthy (Primary Partition)	Click 3]	
Read Only Healthy (Active, Primary Partition) Date 4 PATA (P) PAT	Removable	USB (J:)				
Dick 4 Baic 73 MB VITS Online Healtry (Primary Partition)						
Basic PATA (F3) 13 MB 21 3 MB 2173 Online Healthy (Primary Partition)	Read Only	Healthy (Activ	re, Primary Partif	tion)		
73 MB 73 MB NTFS Online Healthy (Primary Partition)	Disk 4					Ш
Online Healthy (Primary Partition)						
- canny (consult) - consulty						
	Unline	Healthy (Print	ary Partition)			
						*

- System Disk •
- Unblocked SATA Disk
- **Blocked SAS Drive**
- Blocked USB Drive
- Unblocked PATA Drive •

Figure 41: SWB-20 SAFE Block Win7 v1.0 Configuration



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Before SATA (Disk 1)	032081138c0218d8fbe2991814e13330
After SATA (Disk 1)	14311bd2f985de0861a3575ee472e2e4
Before SAS (Disk 2)	3cd941bcf192277e1baefaf7ac848cc9
After SAS (Disk 2)	3cd941bcf192277e1baefaf7ac848cc9
Before USB (Disk 3)	f91dc6162ad3777d021f700bda53a40f
After USB (Disk 3)	f91dc6162ad3777d021f700bda53a40f
Before PATA (Disk 4)	3cd941bcf192277e1baefaf7ac848cc9
After PATA (Disk 4)	d858d8f9df6ff883c210d5b2f483545f

Table 40: SWB-20 MD5 Hash Values

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Table 41: SWB-20 NIST Software Write B	701			лу	
Testing device \\.\PhysicalDriv Device is software WRITE ENABLE					
***** TEST RESULTS	S SUMMARY	* * * * * * * * * * *	* * * * * *		
Test Category	Allowed	Blocked	Total		
Read IRP's Write IRP's Other IRP's	4	0	4		
Write IRP's	8	0	8		
Other IRP's	15	0	15		
Read CDB's Write CDB's	27	0	27		
Write CDB's	34	0	34		
Other CDB's	62	0	62		
Other CDB's Vendor SPecific CDB's	80	0	80		
Undefined CDB's	53	0	53		
Testing device \\.\PhysicalDriv Device is software WRITE PROTEC					
**************************************	S SUMMARY	* * * * * * * * * * *	*****		
Test Category	Allowed	Blocked	Total		
Read IRP's	4	 0	4		
Write IRP's	0	8	8		
Read IRP's Write IRP's Other IRP's	15	0	15		
Write CDB's	27	34	34		
		54	54		
Other CDB's	61	1	62		
Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's	61 0	1 80	62 80		
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv	0 0 7e3	1 80 53	62 80 53		
Vendor SPecific CDB's Undefined CDB's Iesting device \\.\PhysicalDriv Device is software WRITE PROTEC	0 0 7e3 CTED	80 53	80 53		
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC *********************** TEST RESULTS Test Category	0 0 CTED S SUMMARY Allowed	80 53 *********** Blocked	80 53 ***** Total		
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC *********************** TEST RESULTS Test Category	0 0 CTED S SUMMARY Allowed	80 53 *********** Blocked	80 53 ***** Total		
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 0 CTED S SUMMARY Allowed	80 53 *********** Blocked	80 53 ***** Total		
Vendor SPecific CDB's Undefined CDB's Sesting device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 0 CTED S SUMMARY Allowed 4 0 15	80 53 *********** Blocked 0 8 0	80 53 ****** Total 4 8 15		
Vendor SPecific CDB's Undefined CDB's Festing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 0 CTED S SUMMARY Allowed 4 0 15	80 53 *********** Blocked 0 8 0	80 53 ****** Total 		
Vendor SPecific CDB's Undefined CDB's Device is software WRITE PROTEC ************************************	0 0 CTED S SUMMARY Allowed 15 27 0	80 53 *********** Blocked 0 8 0	80 53 ****** Total 		
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 0 CTED S SUMMARY Allowed 15 27 0 61	80 53 ********** Blocked 0 8 0 0 34 1	80 53 ****** Total 		
Vendor SPecific CDB's Undefined CDB's Cesting device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 0 2TED 5 SUMMARY Allowed 15 27 0 61 0	80 53 ********** Blocked 0 8 0 0 34 1 80	80 53 ****** Total 4 8 15 27 34 62 80		
Vendor SPecific CDB's Undefined CDB's Device is software WRITE PROTEC ************************************	0 0 CTED S SUMMARY Allowed 15 27 0 61	80 53 *********** Blocked 0 8 0 0 34 1	80 53 ****** Total 4 8 15 27 34 62		
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ******************* TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's Other IRP's Write CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv	0 0 0 2TED 3 SUMMARY Allowed 4 0 15 27 0 61 0 0 0 7724	80 53 ********** Blocked 0 8 0 0 34 1 80	80 53 ****** Total 4 8 15 27 34 62 80		
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 0 7e3 CTED S SUMMARY Allowed 15 27 0 61 0 0 0 274 ED	80 53 *********** Blocked 0 8 0 0 34 1 80 53	80 53 ****** Total 4 8 15 27 34 62 80 53		
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 0 27E3 2TED 3 SUMMARY Allowed 4 0 15 27 0 61 0 0 0 27 4 0 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	80 53 ***********************************	80 53 ****** Total 4 8 15 27 34 62 80 53		
Vendor SPecific CDB's Undefined CDB's Device is software WRITE PROTEC ************************************	0 0 0 2TED 3 SUMMARY Allowed 15 27 0 61 0 0 0 274 20 5 SUMMARY Allowed	80 53 ***********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ******		
Vendor SPecific CDB's Undefined CDB's Device is software WRITE PROTEC ****************** TEST RESULTS Test Category Read IRP's Write IRP's Read CDB's Write CDB's Vendor SPecific CDB's Undefined CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 0 7e3 CTED S SUMMARY Allowed 0 15 27 0 61 0 0 0 7e4 2D S SUMMARY Allowed 	80 53 *********** Blocked 0 8 0 0 34 1 80 53 ***********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ******* Total		
Vendor SPecific CDB's Undefined CDB's Device is software WRITE PROTEC ************************************	0 0 7e3 CTED S SUMMARY Allowed 0 15 27 0 61 0 0 0 7e4 2D S SUMMARY Allowed 	80 53 *********** Blocked 0 8 0 0 34 1 80 53 ***********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ****** * Total 		
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ****************** TEST RESULTS Test Category Read IRP's Write IRP's Read CDB's Read CDB's Write CDB's Other CDB's Undefined CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ******************* TEST RESULTS Test Category Read IRP's Write IRP's Write IRP's Write IRP's	0 0 7e3 CTED S SUMMARY Allowed C SUMMARY Allowed Allowed 4 8 5	80 53 *********** Blocked 0 8 0 0 34 1 80 53 *********** Blocked 0 0	80 53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 		
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ***************** TEST RESULTS Test Category Read IRP's Write IRP's Read CDB's Read CDB's Write CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE ************************************	0 0 27e3 CTED 3 SUMMARY Allowed 0 15 27 0 61 0 0 0 7re4 2D 5 SUMMARY Allowed 	80 53 *********** Blocked 0 8 0 0 34 1 80 53 *********** Blocked 0 0 0 0 0	80 53 ****** Total 4 8 15 27 34 62 80 53 ******* Total 4 8		
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ***************** TEST RESULTS Test Category Read IRP's Write IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLE **************** TEST RESULTS Test Category Read IRP's Write IRP's Write IRP's Write IRP's Write IRP's Write IRP's Read CDB's	0 0 723 CTED 3 SUMMARY Allowed 4 0 15 27 0 61 0 0 0 724 2D 3 SUMMARY Allowed 4 8 15 27	80 53 ***********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 4 8 15 27		
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 0 7e3 CTED S SUMMARY Allowed 4 0 15 27 0 61 0 0 0 7e4 ED S SUMMARY Allowed 4 8 15 27 34	80 53 ***********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 		

Table 41: SWB-20 NIST Software Write Blocker Test Suite V1.2 Output Summary

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SWB-020 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result twice in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disks and no commands were blocked to the unprotected disks.

8.21 Test Case SWB-21

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of four drives protected with the pattern PPPU. The expected result of this test is SAFE Block Win7 V1.0 will:

- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives

Figure 42: SWB-21 Drive Configuration

Layout Typ	pe File System	Status	
Simple Bas	sic NTFS	Healthy (Boot, Page	e File, Crash Dump, Primary Partition
Simple Bas	sic NTFS	Healthy (Primary Pa	artition)
Simple Bas	sic NTFS	Healthy (Primary Pa	artition)
Simple Bas	sic NTFS	Healthy (Primary P.	artition)
Simple Bas	sic NTFS	Healthy (System, A	ctive, Primary Partition)
Simple Bas	sic NTFS	Healthy (Active, Pri	mary Partition)
	ш		nin faturae
	10.3		
			75.81 GB
Healthy (bys	Healthy (Boot,	Page File, Crash Du	Unallocated
USB (I-)			
		ion)	
		1	
PATA (E)			
PATA (F:)			
72 MAD NITES			
73 MB NTFS	hary Partition)		
	Simple Bas Simple Bas	Simple Back NTFS Simple Back NTFS Source Back NTFS Source Back NTFS Source Back NTFS State On NTS Task Ob NTS Task Ob NTS SAS CE) SAS CE	Simple Baic NTTS Healthy (Bock per Simple Baic NTS Healthy (Primary P Simple Baic NTS Healthy (Active, Primary System Res System Res

- System Disk
- Blocked SATA Disk
- Blocked SAS Drive
- Blocked USB Drive
- Unblocked PATA Drive

Figure 43: SWB-21 SAFE Block Win7 v1.0 Configuration



Before SATA (Disk 1)	78c8a51e023858f783e4f48c7b8cdc76
After SATA (Disk 1)	78c8a51e023858f783e4f48c7b8cdc76
Before SAS (Disk 2)	c3dec07f60c56ba59bafc84854bb2d0c
After SAS (Disk 2)	c3dec07f60c56ba59bafc84854bb2d0c
Before USB (Disk 3)	f91dc6162ad3777d021f700bda53a40f
After USB (Disk 3)	f91dc6162ad3777d021f700bda53a40f
Before PATA (Disk 4)	68e23e5fcd87ffb6ee95a7e301bc8a80
After PATA (Disk 4)	ebe63108df800cea1841e6e5a22c11da

Table 42: SWB-21 MD5 Hash Values

Testing device \\.\PhysicalDriv Device is software WRITE PROTE			
***** TEST RESULT:		* * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Read IRP's	4	0	4
Write IRP's	0	8	8
Read IRP's Write IRP's Other IRP's	15	0	15
Read CDB's	27	0	27
Write CDB's	0	34	34
Other CDB's	61	1	62
Vendor SPecific CDB's	0	80 E 3	80
Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's		53	53
Testing device \\.\PhysicalDriv Device is software WRITE PROTEC			
***** TEST RESULT:	S SUMMARY	* * * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Read IRP's	4	0	4
Write IRP's	0	8	8
Read IRP's Write IRP's Other IRP's			
Read CDB's	27	Ο	27
Write CDB's	0	34	34
Other CDB's	61	1	62
	0 1	±	02
Vendor Specific CDR's	\cap	XII	
Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDri	7e3	80 53	53
Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	ve3 CTED S SUMMARY Allowed	************** Blocked	****** Total
Testing device \\.\PhysicalDriv Device is software WRITE PROTE ************************************	ve3 CTED S SUMMARY Allowed	************** Blocked	****** Total
Testing device \\.\PhysicalDriv Device is software WRITE PROTE ************************************	ve3 CTED S SUMMARY Allowed	************** Blocked	****** Total
Testing device \\.\PhysicalDrig Device is software WRITE PROTEC ****************** TEST RESULT: Test Category 	27E3 CTED S SUMMARY Allowed 4 0 15	********** Blocked 0 8 0	****** Total 4 8 15
Testing device \\.\PhysicalDri Device is software WRITE PROTEC ************************************	27E3 CTED S SUMMARY Allowed 4 0 15	********** Blocked 0 8 0	****** Total 4 8 15
Testing device \\.\PhysicalDriy Device is software WRITE PROTE ************************************	27E3 CTED S SUMMARY Allowed 4 0 15	********** Blocked 0 8 0	****** Total 4 8 15
Testing device \\.\PhysicalDrig Device is software WRITE PROTEC ****************** TEST RESULT: Test Category 	2783 CTED S SUMMARY Allowed 4 0 15 27 0 61	**************************************	****** Total 4 8 15 27 34 62
Testing device \\.\PhysicalDri Device is software WRITE PROTEC ****************** TEST RESULT Test Category 	2783 CTED S SUMMARY Allowed 4 0 15 27 0 61	**************************************	****** Total 4 8 15 27 34 62
Testing device \\.\PhysicalDrig Device is software WRITE PROTEC ****************** TEST RESULT: Test Category 	2783 CTED S SUMMARY Allowed 4 0 15 27 0 61	**************************************	****** Total 4 8 15 27 34 62
Testing device \\.\PhysicalDrig Device is software WRITE PROTEC ***************** TEST RESULT: Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's	7e3 CTED 5 SUMMARY Allowed 4 0 15 27 0 61 0 0 0	*********** Blocked 0 8 0 0 34 1 80	****** Total 4 8 15 27 34 62 80
Testing device \\.\PhysicalDrig Device is software WRITE PROTECT ***********************************	Allowed S SUMMARY Allowed 4 0 15 27 0 61 0 0 27 0 61 0 0 0 0 0 0 0 0 0 0 0 0 0	*********** Blocked 0 8 0 0 34 1 80 53	Total 4 8 15 27 34 62 80 53
Testing device \\.\PhysicalDrig Device is software WRITE PROTECT ***********************************	Allowed S SUMMARY Allowed 4 0 15 27 0 61 0 0 724 ED S SUMMARY	**************************************	****** Total 4 8 15 27 34 62 80 53 ******
Testing device \\.\PhysicalDrig Device is software WRITE PROTECT ***********************************	Allowed S SUMMARY Allowed 4 0 15 27 0 61 0 0 7 24 5 S SUMMARY Allowed	**************************************	Total 4 8 15 27 34 62 80 53
Testing device \\.\PhysicalDrig Device is software WRITE PROTECT ***********************************	Allowed S SUMMARY Allowed 4 0 15 27 0 61 0 0 7 24 5 S SUMMARY Allowed	**************************************	****** Total 4 8 15 27 34 62 80 53 ******
Testing device \\.\PhysicalDrig Device is software WRITE PROTECT ***********************************	Allowed S SUMMARY Allowed 4 0 15 27 0 61 0 0 7 24 S SUMMARY Allowed Allowed	**************************************	****** Total 4 8 15 27 34 62 80 53 ****** Total 4
Testing device \\.\PhysicalDrig Device is software WRITE PROTECT ***********************************	Allowed S SUMMARY Allowed 4 0 15 27 0 61 0 0 0 7e4 2D S SUMMARY Allowed 4 8 15	**************************************	Total 4 8 15 27 34 62 80 53 ****** Total 4 8 15
Testing device \\.\PhysicalDrig Device is software WRITE PROTECT ***********************************	Allowed S SUMMARY Allowed 4 0 15 27 0 61 0 0 0 224 25 S SUMMARY Allowed 4 8 15 27	**************************************	Total 4 8 15 27 34 62 80 53 ****** Total 4 8 15 27
Testing device \\.\PhysicalDrig Device is software WRITE PROTECT ***********************************	2783 CTED S SUMMARY Allowed 	**************************************	Total 4 8 15 27 34 62 80 53 ****** Total 4 8 15 27 34
Testing device \\.\PhysicalDright Device is software WRITE PROTECT ***********************************	2783 CTED S SUMMARY Allowed 	**************************************	****** Total 4 8 15 27 34 62 80 53 53 ******* Total 15 27 34 62
Testing device \\.\PhysicalDrig Device is software WRITE PROTECT ***********************************	2783 CTED S SUMMARY Allowed 	**************************************	Total 4 8 15 27 34 62 80 53 ****** Total 4 8 15 27 34

Table 43: SWB-21 NIST Software Write Blocker Test Suite V1.2 Output Summary

University of Rhode Island Department of Computer Science Technical Report TR10-328

SWB-021 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result three times in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disks and no commands were blocked to the unprotected disk.

8.22 Test Case SWB-22

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-06. It issues all possible commands to a set of four drives protected with the pattern UUUP. The expected result of this test is SAFE Block Win7 V1.0 will:

- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives

Figure 44: SWB-22 Drive Configuration

Volume	Layout Typ	e File System	Status		C
👄 (C:)	Simple Bas	ic NTFS		E File, Crash Dump, Primary Partition)	7
PATA (F:)	Simple Bas		Healthy (Primary Pa		3
SAS (E:)	Simple Bas		Healthy (Primary Pa		6
SATA (D:)	Simple Bas		Healthy (Primary Pa		7
System Reserve	d Simple Bas Simple Bas		Healthy (System, A Healthy (Active, Pri	ctive, Primary Partition)	1
	Sample Dos		really years, ro		
٠ [1	•
Disk 0					-
Basic	System Res	(C;)			
149.05 GB	100 MB NTF	73.14 GB NTFS		75.81 GB	
Online	Healthy (Sys	Healthy (Boot,	, Page File, Crash Du	Unallocated	
Disk 1 Basic 74.53 GB Online	SATA (D:) 74.53 GB NTF Healthy (Prim				
Disk 2 Basic 68.37 GB Online	SAS (E:) 68.36 GB NTF Healthy (Prim				
= Disk 3	1				
Removable 956 MB Online	USB (J:) 949 MB NTFS Healthy (Acti	ve, Primary Parti	ition)		
Disk 4			•		
Basic 73 MB Read Only	PATA (F:) 73 MB NTFS Healthy (Print	ary Partition)			
	73 MB NTFS Healthy (Prin				

- System Disk •
- Unblocked SATA Disk
- Unblocked SAS Drive
- Unblocked USB Drive
- Blocked PATA Drive •

Figure 45: SWB-22 SAFE Block Win7 v1.0 Configuration



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Before SATA (Disk 1)	d175b25574cedea41916ba6e2b8ccaf4
After SATA (Disk 1)	9b9d12b7bf755300f2963e5b0a3ae6ae
Before SAS (Disk 2)	850eb01ff383d2242534db6705d7605e
After SAS (Disk 2)	4c69e0ca316def6d54cc3d7ce5f2bf63
Before USB (Disk 3)	f91dc6162ad3777d021f700bda53a40f
After USB (Disk 3)	36042d29ed02d44070d7e83667e60113
Before PATA (Disk 4)	9fe4600db166cee3d9646b09aeab5129
After PATA (Disk 4)	9fe4600db166cee3d9646b09aeab5129

Table 44: SWB-22 MD5 Hash Values

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Table 45: SWB-22 NIST Software Write E Testing device \\.\PhysicalDriv	vel			л у	
Device is software WRITE ENABL	ED				
***** TEST RESULT:	S SUMMARY	* * * * * * * * * * *	*****		
Test Category					
Read IRP's Write IRP's Other IRP's	4	0	4		
Write IRP's	8	0	1 5		
Read CDB's Write CDB's	27	0	27		
Write CDB's	34	0	34		
Other CDB's Vendor SPecific CDB's	62	0	62		
Vendor SPecific CDB's	80	0	80 50		
Undefined CDB's	53	U	53		
Testing device \\.\PhysicalDriv Device is software WRITE ENABL					
***** TEST RESULT:	S SUMMARY	* * * * * * * * * * *	* * * * * *		
Test Category	Allowed	Blocked	Total		
Kead IKP'S	4	U	4		
Read IRP's Write IRP's Other IRP's	0 15	0	0 15		
Dood CDDIC	27	0	27		
Read CDB's	2.4	0	34		
Write CDB's	34	0	<u> </u>		
Write CDB's Other CDB's	34 62	0			
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Iesting device \\.\PhysicalDriv	80 53 ve3	0 0 0	62 80 53		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY	80 53 7e3 ED	0 0	80 53		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABL ************************************	80 53 Ve3 55 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0 0 ************ Blocked	80 53 ****** Total		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Desting device \\.\PhysicalDriy Device is software WRITE ENABL ************************************	80 53 Ve3 55 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0 0 ************ Blocked	80 53 ****** Total		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Sesting device \\.\PhysicalDriv Device is software WRITE ENABL ************************************	80 53 Ve3 55 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0 0 ************ Blocked	80 53 ****** Total		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Cesting device \\.\PhysicalDri Device is software WRITE ENABLY	80 53 Ve3 55 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0 0 ************ Blocked	80 53 ****** Total		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Sesting device \\.\PhysicalDriv Device is software WRITE ENABLY Test Category Read IRP's Write IRP's Other IRP's	80 53 Ve3 55 SUMMARY Allowed 4 8 15	0 0 ************ Blocked 0 0 0	80 53 ****** Total 4 8 15		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABL ************************************	80 53 ED 5 SUMMARY Allowed 4 8 15 27	0 0 *********** Blocked 0 0 0 0	80 53 ****** Total 4 8 15		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY Test Category Read IRP's Write IRP's Other IRP's Read CDB's	80 53 2D 5 SUMMARY Allowed 4 8 15 27 34 62	0 0 ************ Blocked 0 0 0 0 0 0 0 0	80 53 ****** Total 4 8 15 27		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Sesting device \\.\PhysicalDri Device is software WRITE ENABLY Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's	80 53 Ve3 ED S SUMMARY Allowed 4 8 15 27 34 62	0 0 ************ Blocked 0 0 0 0 0 0 0 0	80 53 Total 4 8 15 27 34		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Sesting device \\.\PhysicalDri Device is software WRITE ENABLY Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Other CDB's	80 53 2D 5 SUMMARY Allowed 4 8 15 27 34 62	0 0 ************ Blocked 0 0 0 0 0 0 0	80 53 ****** Total 4 8 15 27 34 62		
Write CDB's Other CDB's Vendor SPecific CDB's Indefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ************************************	80 53 Ve3 55 SUMMARY Allowed 	0 0 *********** Blocked 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	80 53 ****** Total 4 8 15 27 34 62 80		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Device is software WRITE ENABLY Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's Other CDB's Undefined CDB's Undefined CDB's Iesting device \\.\PhysicalDriv Device is software WRITE PROTECT	80 53 Ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 Ve4 CTED	0 0 *********** Blocked 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	80 53 ****** Total 4 8 15 27 34 62 80 53		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ************************************	80 53 Ve3 55 SUMMARY Allowed 4 8 15 27 34 62 80 53 Ve4 CTED 55 SUMMARY Allowed	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ****** Total		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ********************* TEST RESULT: Test Category Read IRP's Write IRP's Read CDB's Write CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 Ve3 ED S SUMMARY Allowed 53 Ve4 CTED S SUMMARY Allowed	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ****** Total		
Write CDB's Other CDB's Vendor SPecific CDB's Indefined CDB's Device is software WRITE ENABLY ************************************	80 53 Ve3 ED S SUMMARY Allowed 53 Ve4 CTED S SUMMARY Allowed	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ****** * Total		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ******************** TEST RESULT: Test Category Read IRP's Write IRP's Read CDB's Write CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 Ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 Ve4 CTED S SUMMARY Allowed 4 0	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 4		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Device is software WRITE ENABL Test Category Read IRP's Write IRP's Other IRP's Read CDB's Other CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Esting device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 Ve3 ED S SUMMARY Allowed CTED S SUMMARY Allowed 15	0 0 ************ Blocked 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	80 53 ****** Total 15 27 34 62 80 53 ****** Total 4 8 15		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE ENABLY ************************************	80 53 Ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 Ve4 CTED S SUMMARY Allowed 4 0 15 27	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 4 8		
Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Device is software WRITE ENABLY Testing device \\.\PhysicalDriv Test Category Read IRP's Write IRP's Other IRP's Read CDB's Vendor SPecific CDB's Undefined CDB's Undefined CDB's Esting device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	80 53 Ve3 ED S SUMMARY Allowed 4 8 15 27 34 62 80 53 Ve4 CTED S SUMMARY Allowed 4 0 15 27 0	0 0 *********** Blocked 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	80 53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 4 8 15 27		
Write CDB's	80 53 Ve3 ED 5 SUMMARY Allowed 4 8 15 27 34 62 80 53 Ve4 CTED 5 SUMMARY Allowed 	0 0 **********************************	80 53 ****** Total 4 8 15 27 34 62 80 53 ****** Total 4 8 15 27 34		

Table 45: SWB-22 NIST Software Write Blocker Test Suite V1.2 Output Summary

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SWB-022 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disk and no commands were blocked to the unprotected disks.

8.23 Test Case SWB-23

This case tests SAFE Block Win7 V1.0's compliance with optional assertions SWB-AO-01 through SWB-AO-08. It is run using the BOOT protocol, in which all configured drives are protected, the system is rebooted and all possible commands issued to all drives. The expected result of this test is SAFE Block Win7 V1.0 will:

- Block all commands from the WRITE, VENDOR_SPECIFIC, and UNDEFINED categories issued to protected drives
- Pass all commands from the READ and OTHER categories issued to protected drives
- Pass all commands from all categories issued to unprotected drives
- Display a message indicating each command blocked

Figure 46: SWB-23 Drive Configuration

Layout Typ	e File System	Status		0
				7
				7
Simple Bas	ic NTFS			e
				7
				-
Simple Bas	ic NTFS	Healthy (Active, Pri	imary Partition)	-
	m			+
	(6)			
			75 91 CP	
Healthy (Prim SAS (E:) 68.36 GB NTF:	ary Partition)			
USB (J:) 949 MB NTFS Healthy (Activ	ve, Primary Parti	tion)		
PATA (F:) 73 MB NTFS Healthy (Prim	ary Partition)			
	Simple Bas Simple Bas	System Res (C)	Simple Basic NTS Simple Basic NTS Simple Basic NTS Simple Basic NTS Healthy (Primary P Simple Basic NTS Healthy (Primary P Healthy (Primary P Healthy (Construction) System Res (C) System Res (C) System Res (C) Source P Healthy (Decker P Healthy (Construction) SATA ID) 73.53 (B NTS Healthy (Primary Partition) USB (D) ABO MITS Healthy (Primary Partition) SATA ID) ASS (E) ABO MITS Healthy (Primary Partition)	Simple Saic INTS Healthy Voc Page File, Cash Dum, Primary Partition) Simple Saic INTS Healthy Vormay Partition) Simple Saic INTS Healthy Vormay Partition) Simple Saic INTS Healthy Vormay Partition) Simple Saic INTS Healthy (Active Primary Partition) System Rev Voc Page File, Cash Du 75 St GB Healthy (Primary Partition) Sol MNTS Healthy (Primary Partition) USB (J) SAS (E) SAS (F) Sale Sol NTS Sea Sol NTS Sea Sol NTS Healthy (Primary Partition) USB (J) SAS (F) Sale Sol NTS Healthy (Primary Partition) USB (J) SAS (F) Sale Sol NTS Healthy (Primary Partition)

Blocked SATA Disk

•

Blocked SAS Drive

System Disk

- Blocked USB Drive
- Blocked PATA Drive

Figure 47: SWB-23 SAFE Block Win7 v1.0 Configuration

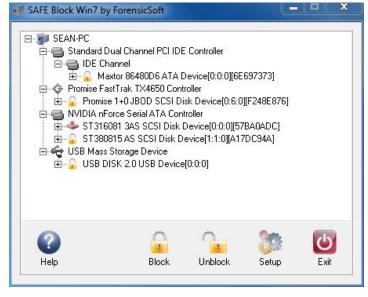


Table 46: SWB-23 MD5 Hash Values

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Before SATA (Disk 1)	e68395bf2c8afdf927980b4263eec33e
After SATA (Disk 1)	e68395bf2c8afdf927980b4263eec33e
Before SAS (Disk 2)	ba212f394153e2d950d54c87dc1b2db8
After SAS (Disk 2)	ba212f394153e2d950d54c87dc1b2db8
Before USB (Disk 3)	7b5cb46cd74238c434d76f49237b0916
After USB (Disk 3)	7b5cb46cd74238c434d76f49237b0916
Before PATA (Disk 4)	9fe4600db166cee3d9646b09aeab5129
After PATA (Disk 4)	9fe4600db166cee3d9646b09aeab5129

Device is software WRITE PROTEC	vel CTED		
***** TEST RESULTS	S SUMMARY	* * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Read IRP's	4	0	4
Write IRP's	0	8	8
Read IRP's Write IRP's Other IRP's	15	0	15
Read CDB's	27	0	27
Write CDB's	0	34	34
Other CDB's	61	1	62
Vendor SPecific CDB's	0	80	80
Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's	0	53	53
Testing device \\.\PhysicalDriv Device is software WRITE PROTE			
***** TEST RESULT:	S SUMMARY	* * * * * * * * * * *	*****
Test Category	Allowed	Blocked	Total
Read IRP's	4	0	4
Write IRP's	0	8	8
Read IRP's Write IRP's Other IRP's			
Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's			
Mrite CDR's	∠ / ∩	ں ۲	21
Other CDB's	61	24 1	34 60
OCHET CDD 2	0	⊥ ۵0	02 Q N
Vender Specific CDPIc		0.0	0.0
Vendor SPecific CDB's Undefined CDB's Testing device \\.\PhysicalDriv	0	53	53
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTE(************************************	0 ZEB SUMMARY Allowed	53 ************ Blocked	53 ****** Total
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTE(************************************	0 ZEB SUMMARY Allowed	53 ************ Blocked	53 ****** Total
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTE(************************************	0 ZEB SUMMARY Allowed	53 ************ Blocked	53 ****** Total
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTE(************************************	0 ZEB SUMMARY Allowed	53 ************ Blocked	53 ****** Total
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ***************** TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's	0 CTED S SUMMARY Allowed 4 0 15	53 *********** Blocked 0 8 0	53 ****** Total 4 8 15
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ***************** TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's	0 CTED S SUMMARY Allowed 4 0 15	53 *********** Blocked 0 8 0	53 ****** Total 4 8 15
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTE(************************************	0 CTED S SUMMARY Allowed 0 15 27 0	53 *********** Blocked 0 8 0	53 ****** Total 4 8 15
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ***************** TEST RESULTS Test Category Read IRP's Write IRP's Other IRP's Read CDB's Write CDB's	0 CTED S SUMMARY Allowed 4 0 15 27 0 61	53 *********** Blocked 	53 ****** Total 4 8 15 27 34 62
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 CTED S SUMMARY Allowed 4 0 15 27 0 61	53 *********** Blocked 	53 ****** Total 4 8 15 27 34 62
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 723 CTED 5 SUMMARY Allowed 4 0 15 27 0 61 0 0 0 724	53 ********** Blocked 0 8 0 0 34 1 80	53 ****** Total 4 8 15 27 34 62 80
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 ZTED S SUMMARY Allowed 4 0 15 27 0 61 0 0 27 0 7 0 61 0 0 27 0 7 0 61 0 0 0 7 7 0 7 0 7 7 0 7 7 7 0 7 7 7 7 7 7 7 7 7 7 7 7 7	53 ************************************	53 Total 4 8 15 27 34 62 80 53
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 ZTED S SUMMARY Allowed 4 0 15 27 0 61 0 0 ZED S SUMMARY Allowed	53 ************************************	53 Total 4 8 15 27 34 62 80 53
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 ZTED S SUMMARY Allowed 4 0 15 27 0 61 0 0 ZED S SUMMARY Allowed	53 ************************************	53 Total 75 4 8 15 27 34 62 80 53
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 ZTED S SUMMARY Allowed 4 0 15 27 0 61 0 0 ZED S SUMMARY Allowed 	53 ************************************	53 ****** Total 4 8 15 27 34 62 80 53 ******* Total
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 7e3 CTED S SUMMARY Allowed 4 0 15 27 0 61 0 0 7e4 CTED S SUMMARY Allowed 4	53 ************************************	53 ******* Total 4 8 15 27 34 62 80 53 ****** Total
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 ze3 CTED S SUMMARY Allowed 4 0 15 27 0 61 0 0 ve4 CTED S SUMMARY Allowed 4 0 15 27 0 61 0 0 15 27 0 61 0 0 15 27 15 27 0 61 0 15 27 0 61 0 15 27 0 61 0 15 27 0 61 0 15 27 0 61 0 15 27 0 61 0 0 15 27 0 61 0 0 15 27 0 61 0 15 27 0 61 0 0 15 27 0 61 0 0 15 27 0 61 0 0 15 27 0 61 0 0 15 27 0 61 0 0 15 27 0 61 0 0 15 27 0 61 0 0 15 27 0 61 0 0 15 27 0 61 0 0 15 27 15 27 0 61 0 0 15 27 0 61 0 0 15 27 0 61 0 0 15 27 15 27 15 27 0 61 0 0 15 27 15 27 15 27 15 27 15 27 15 27 15 27 15 27 15 27 15 27 15 27 15 27 15 27 15 27 15 27 15 27 15 15 15 15 15 15 15 15 15 15	53 ************************************	53 Total Total 4 8 15 27 34 62 80 53 ******* Total ******* Total 15 27 34 62 80 53 ********
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 ze3 CTED S SUMMARY Allowed 27 0 61 0 0 27 0 61 0 0 ze4 CTED S SUMMARY Allowed 	53 ************************************	53 Total Total 4 8 15 27 34 62 80 53 ******* Total ******* Total 4 8 15 27 34 62 80 53 ******** ******** ******** ********
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 re3 CTED S SUMMARY Allowed 	53 ************************************	53 ******* Total 4 8 15 27 34 62 80 53 ******* Total 4 8 15 27 34
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 7e3 CTED 5 SUMMARY Allowed 4 0 15 27 0 61 0 0 7e4 CTED 5 SUMMARY Allowed 4 0 15 27 0 61 0 0 7 0 61 0 0 7 0 61 0 0 7 0 61 0 0 0 7 0 61 0 0 0 7 0 61 0 0 0 61 0 0 0 61 0 0 0 61 0 0 61 0 0 61 0 0 0 61 0 0 61 0 0 61 0 0 61 0 0 61 0 0 61 0 0 61 0 0 61 0 0 61 0 0 61 0 0 61 0 0 61 0 0 61 0 0 61 0 0 61 0 0 61 0 0 61 0 0 0 61 0 0 0 61 0 61 0 61 0 61 0 61 0 61 0 61 0 61 0 61 0 61 0 61 0 61 0 61 61 61 61 61 61 61 61 61 61	53 ************************************	53 ******* Total 4 8 15 27 34 62 80 53 ******* Total 4 8 15 27 34 62
Undefined CDB's Testing device \\.\PhysicalDriv Device is software WRITE PROTEC ************************************	0 re3 CTED S SUMMARY Allowed 	53 ************************************	53 ******* Total 4 8 15 27 34 62 80 53 ******* Total 4 8 15 27 34

Table 47: SWB-23 NIST Software Write Blocker Test Suite V1.2 Output Summary

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SWB-023 Test result analysis

SAFE Block Win7 Version 1.0 had one unexpected result four times in this test – Variation 1 described in Section 2.1. Note that this is conservative write blocking, which is considered good practice in digital forensics. Otherwise, all write commands were blocked to the protected disks.

8.24 Test Case SWB-24

This case tests SAFE Block Win7 V1.0's compliance with mandatory assertions SWB-MO-03 through SWB-MO-09 and optional assertion SWB-AO-07. It is run using the UNINSTALL protocol, in which SAFE Block Win7 V1.0 is de-installed, the system is rebooted and all possible commands are issued to all drives. The expected result of this test is that commands from any category will not be blocked for any drive.

Figure 48:	SWB-24	Drive	Configuration

Volume	Layout Typ	e File System	Status	
(C:)		ic NTFS	Healthy (Boot, Page	File, Crash Dump, Primary Partition
PATA (F:)	Simple Bar	ic NTFS	Healthy (Primary Pa	
SAS (E:)	Simple Bas		Healthy (Primary Pa	
SATA (D:)	Simple Bas		Healthy (Primary Pa	
System Reserved	Simple Bas	ic NTFS	Healthy (System, Ar	tive, Primary Partition)
USB (J:)	Simple Bas		Healthy (Active, Prin	
•				
Disk 0				
Basic	System Res	(C:)		
149.05 GB	100 MB NTF	73.14 GB NTFS	///////////////////////////////////////	75.81 GB
Online	Healthy (Sys		Page File, Crash Du	Unallocated
Disk 1 Basic 74.53 GB Online	SATA (D:) 74.53 GB NTF Healthy (Prim			
Disk 2 Basic 68.37 GB Online	SAS (E:) 68.36 GB NTF Healthy (Prin			
Basic 68.37 GB	68.36 GB NTF			
Basic 68.37 GB Online Disk 3 Removable	68.36 GB NTF			
Basic 68.37 GB Online Disk 3 Removable 956 MB	68.36 GB NTF Healthy (Prin USB (J:) 949 MB NTFS	hary Partition)		
Basic 68.37 GB Online Disk 3 Removable	68.36 GB NTF Healthy (Prin USB (J:) 949 MB NTFS	hary Partition)	ion)	
Basic 68.37 GB Online Disk 3 Removable 956 MB	68.36 GB NTF Healthy (Prin USB (J:) 949 MB NTFS	hary Partition)	ion)	
Basic 68.37 GB Online Disk 3 Removable 956 MB Online Disk 4 Basic	68.36 GB NTF Healthy (Prin USB (J:) 949 MB NTFS Healthy (Acti PATA (F:)	hary Partition)	ion)	
Basic 68.37 GB Online Disk 3 Removable 956 MB Online Disk 4 Basic 73 MB	68.36 GB NTF Healthy (Prin USB (J:) 949 MB NTFS Healthy (Acti PATA (F:) 73 MB NTFS	ve, Primary Partit	ion)	
Basic 68.37 GB Online Disk 3 Removable 956 MB Online Disk 4 Basic 73 MB	68.36 GB NTF Healthy (Prin USB (J:) 949 MB NTFS Healthy (Acti PATA (F:)	ve, Primary Partit	ion)	

- System Disk
- Unblocked SATA Disk
- Unblocked SAS Drive
- Unblocked USB Drive
- Unblocked PATA Drive

Table 48: SWB-24 MD5 Hash Values

Before SATA (Disk 1)	e68395bf2c8afdf927980b4263eec33e
After SATA (Disk 1)	e5772b96cc3660694810172ad4d8f2ef
Before SAS (Disk 2)	ba212f394153e2d950d54c87dc1b2db8
After SAS (Disk 2)	845759590bd453f96622a03f56f98441
Before USB (Disk 3)	7b5cb46cd74238c434d76f49237b0916
After USB (Disk 3)	5b7418da07805c732f45c684a9f7ad60
$=====(\mathbf{D} \operatorname{Ion} \mathbf{U})$	
Before PATA (Disk 4)	9fe4600db166cee3d9646b09aeab5129

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Table 49: SWB-24 NIST Software Write Blocker Test Suite V1.2 Output Summary	
Table 45. SWD-24 INST SOLIWARE WITLE BIOLKET TEST SUILE VILLE OULPUL SUITINALY	

Table 49: SWB-24 NIST Software Write	Blocker Test S	Suite V1.2 Out	out Summa	ry
Testing device \\.\PhysicalDri	vel			
Device is software WRITE ENABL	ED			
**************************************	TS SUMMARY	*******	******	
Test Category	Allowed	Blocked	Total	
Read IRP's	4	0	4	
Write IRP's	8	0	8	
Write IRP's Other IRP's	15	0	15	
Read CDB's	27	0	27	
Write CDB's	34	0		
Write CDB's Other CDB's	62	0	34 62	
Vendor SPecific CDB's		0		
Undefined CDB's	53	0	80 53	
Testing device \\.\PhysicalDri	ve2			
Device is software WRITE ENABL				
****************** TEST RESULT	S SUMMARY	* * * * * * * * * * *	* * * * * *	
Test Categorv	Allowed	Blocked	Total	
Test Category				
Read IRP's	4	0 0	4	
Write IRP's	8	0	8	
Other IRP's	15	0	15	
	10	0	10	
Read CDB's	27	0	27	
Read CDB's Write CDB's	34	0	34	
Other CDB's	62	0	62	
Other CDB's Vendor SPecific CDB's	80	0	62 80	
Undefined CDB's			53	
onactinea obb billion	00	0	55	
Testing device \\.\PhysicalDri	103			
Device is software WRITE ENABL				
Device is soleware write Enrol	60			
**************************************	S STIMMADY	****	*****	
IESI KESULI	5 SUMMARI			
Test Category	Allowed	Blocked	Total	
	AIIOweu	DIOCKEU	IOCAL	
Read IRP's Write IRP's	4	0	4	
Other IRP's	1 5	0	。 15	
OUNEL INF 5	10	U	CΤ	
Read CDB's	27	0	27	
Write CDB's		0	27	
		0	34 62	
Other CDB's Vendor SPecific CDB's				
Undefined CDB's	80 53	0	80 53	
undertned CDR.2	53	U	53	
Testing design \\ \Dhusigslowi	1			
Testing device \\.\PhysicalDri				
Device is software WRITE ENABL	5U			
**************************************	C CLIMMA DV	****	*****	
LESI RESULT	S SUMMARY			
Toot Cotore	۰ ۱ ۱ ۲	D111	T 1	
Test Category	Allowed	Blocked	Total	
Read IRP's	л		л	
		0	4	
Write IRP's		0	8	
Other IRP's	15	0	15	
	0.7	0	0.7	
Read CDB's		0	27	
Write CDB's		0	34	
Other CDB's	62	0	62	
Vendor SPecific CDB's	80	0	80	
Undefined CDB's	53	0	53	

SWB-024 Test result analysis

The de-installation of SAFE Block Win7 Version 1.0 performed correctly - all commands were issued and allowed on the unprotected disks.

8.25 Test Case SWB-25

This case tests SAFE Block Win7 V1.0's compliance with mandatory assertion SWB-AM-10. The expected result of this test is that the IMAGE operation will fail with an I/O error and the disk hash of the test disk will be unchanged by the test. The IMAGE operation was attempted using AccessData FTK Imager 2.7.0 [4].

Volume	Lavout	Type	File System	Status		0
■ (C:) ■ System Reserved ■ USB (J:)	Simple	Basic Basic	NTFS NTFS			719
• [1	11			•
149.05 GB	System F 100 MB N Healthy (ITF: 7	(C:) 73.14 GB NTF9 Healthy (Boot,	Page File, Crash Dun	75.81 GB Unallocated	
	USB (J:) 949 MB N Healthy (Primary Partit	ion)		
	rimary pa					

System DiskBlocked USB Disk

Figure 50: SWB-25 SAFE Block Win7 v1.0 Configuration



Table 50: SWB-25 MD5 Hash Values

Before USB Disk	0e7a3e041653b210d14bf97601b7288d
After USB Disk	0e7a3e041653b210d14bf97601b7288d

Q AccessData FTK Imager 2.9.0.1385						
Ele View Mode Help		-				
A A A A B B B & A > M		* 20 20 20 .				
	File List					>
	Name	Size Ty	/pe Dat	e Modified		
		Creating Image			23	
		creating image				
		Image Source: C:	Users\Sean\Download	s		
		Destination: J:V	test			
		Status: Fa	ilure: The media is writ	protected. (19). Filename	= "J:\t	
	00000000 33 C0 8E D					
Custom Content Sources >	00000010 06 B9 00 0	-				
Evidence:File System Path File Options	00000030 E2 F1 CD 1	8				
	00000040 B4 41 BB A 00000050 F7 C1 01 0					
	00000050 F7 C1 01 0 00000060 26 66 68 0		time:			
	00000070 70 68 01 0	Estimate	d time left:			
	00000080 9F 83 C4 1 00000090 8A 76 01 8			- (
	00000000 4E 11 0F 8		Close			
	000000b0 EB 82 55 3					
	000000c0 7D 55 AA 7					
	000000d0 D1 E6 64 E					
	000000e0 64 E8 71 0 000000f0 FB 54 43 5					
	00000100 BB 00 00 6					
۲. III. I	00000110 53 66 53 6					
New Edk Remove Remove All Greate Image	00000120 00 66 61 6	8 00 00 07 CD-1A 5	A 32 F6 EA 00 7	00 -fah Í - Z2öê -		
Rew Enr Remove Kennove Bill Theare marke	00000130 00 CD 18 A	0 B7 07 EB 08-A0 B	6 07 EB 03 A0 B	5 07 -1 · · · ē · ¶ ·ē · p	1.	-
Properties Hex Value Int Custom Conte	Cursor pos = 0; phy sec = 0					

Figure 51: SWB-25 IMAGE operation result

SWB-025 Test result analysis

SAFE Block Win7 Version 1.0 performed correctly - the image operation failed and the hashes did not change.

8.26 Test Case SWB-26

This case tests SAFE Block Win7 V1.0's compliance with mandatory assertion SWB-AM-10 and optional assertion SWB-AO-08. The expected result of this test is that the ACQUIRE operation will fail with an I/O error, and the disk hash of the test disk will be unchanged by the test. The ACQUIRE operation was attempted using Guidance Software EnCase Forensic Version 6 [7].

Layout	Type	File System	Status	0
Simple	Basic	NTFS	Healthy (Boot, Page File, Crash Dump, Primary Partition)	7
Simple	Basic	NTFS	Healthy (System, Active, Primary Partition)	1
Simple	Basic	NTFS	Healthy (Active, Primary Partition)	g
		11		
	1.19			•
				•
System R 100 MB N Healthy (S	ITF: 7	(C:) 73.14 GB NTF9 Healthy (Boot,	Page File, Crash Dun Unallocated	•
100 MB N	ITF: 7	3.14 GB NTFS		•
	Simple	Simple Basic Simple Basic	Simple Basic NTFS Simple Basic NTFS Simple Basic NTFS	Simple Basic NTFS Healthy (System, Active, Primary Partition) Simple Basic NTFS Healthy (Active, Primary Partition)

- System Disk
- Blocked USB Disk

Figure 53: SWB-26 SAFE Block Win7 v1.0 Configuration
SAFE Block Win7 by ForensicSoft



Table 51: SWB-26 MD5 Hash Values

Before USB Disk	0e7a3e041653b210d14bf97601b7288d
After USB Disk	0e7a3e041653b210d14bf97601b7288d

Figure 54: SWB-26 ACQUIRE operation result

EnCase Acquisition		
File Edit View Tools Help		_
🗋 New 📴 Open 🚽 Save 🎿 Print 😓 Add Device 📳 Refresh 🕯	X close US Acquire	
Cases ×	Table	
Home Strentries DBookmarks Q Search Hits = ()	Options Is prature Description Is A	Last
🔁 Home 🕫 File Extents 🔒 Permissions 🔞 Refere (🕨 🗌 1	Gutput Path	1
-OC & Entries	Computer + USB (F:) + NIST + + 4 Search NIST P	
	Organize 🕶 👔	1
	Devi Coupe Path Point Devi Devi	
· · ·	File name: C.601	
Report Console Dutput Lock Codepage 0/ Name Unallocated Clusters File Acquire 07/02/10 10-16-13AM Logical Size 500.000.882,176	Sive as type (at Files (*.*) Hide Folders Sove Cancel	
Initialized Size 500,000.882,176 Physical Size 500,000.882,176 Starting Extent 1C-C0 File Extents 1 Cose 1/C/Undicated Clusters PS 0 LS 0 CL 0 S0 000 PO 0 LE 0		

SWB-026 Test result analysis

SAFE Block Win7 Version 1.0 performed correctly - the operation failed and the hashes did not change.

8.27 Test Case SWB-27

This case tests SAFE Block Win7 V1.0's compliance with assertion SWB-AM-10. It is run using the typical protocol. The expected result of this test is that the COPY command will fail with an error message, and the hash value of the target disk will be unchanged after the test. The COPY operation was attempted using a standard Windows® Command Prompt.

Volume	Lavout	Type	File System	Status		0
 (C:) System Reserved USB (J:) 	Simple	Basic Basic	NTFS NTFS			719
	System R		" (C:)////// /3.14 GB NTFS		75.81 GR	•
Online	Healthy (S			Page File, Crash Dun	Unallocated	
956 MB	USB (J:) 949 MB N Healthy (A		Primary Partit	tion)		

- System Disk
- Blocked USB Disk

Figure 56: SWB-27 SAFE Block Win7 v1.0 Configuration
SAFE Block Win7 by ForensicSoft



Table 52: SWB-27 MD5 Hash Values

Before USB Disk	0e7a3e041653b210d14bf97601b7288d
After USB Disk	0e7a3e041653b210d14bf97601b7288d



SWB-027 Test result analysis

SAFE Block Win7 Version 1.0 performed correctly - the operation failed and the hashes did not change.

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Figure 57: SWB-27 COPY operation result

8.28 Test Case SWB-28

This case tests SAFE Block Win7 V1.0's compliance with assertion SWB-AM-10. It is run using the typical protocol. The expected result of this test is that the DROP operation will fail with an error message and the hash value of the target disk will be unchanged after the test. The DROP operation was attempted using a Drag-and-Drop operation in Windows® Explorer.

Figure 58: SWB-28 Drive Configuration

Layout	Type	File System	Status	0
Simple			Healthy (Boot, Page File, Crash Dump, Primary Partition	on) 7
Simple	Basic	NTFS	Healthy (System, Active, Primary Partition)	1
Simple	Basic	NTFS	Healthy (Active, Primary Partition)	ġ
	,	11		•
				,
System R	tesi 🖡	(C:)	75 81 68	,
System R 100 MB N Healthy (S	tesi ITF:	(C:) /3.14 GB NTF9	Page File, Crash Duni Unallocated	•
100 MB N	tesi ITF:	(C:) /3.14 GB NTF9		4
	Simple Simple	Simple Basic Simple Basic		Simple Basic NTFS Healthy (Boot, Page File, Crash Dump, Primary Partition) Simple Basic NTFS Healthy (System, Active, Primary Partition)

- System Disk
- Blocked USB Disk

Figure 59: SWB-28 SAFE Block Win7 v1.0 Configuration
SAFE Block Win7 by ForensicSoft

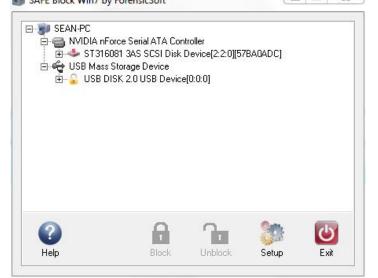


Table 53: SWB-28 MD5 Hash Values

Before USB Disk	0e7a3e041653b210d14bf97601b7288d
After USB Disk	0e7a3e041653b210d14bf97601b7288d

Figure 60: SWB-28 DROP operation result

Copy Folder	-		23
The disk is write-	protected.		
Remove the write	-protection or use an	other <mark>disk.</mark>	
		5/13/2010 6:55 PM	
		Try Again	Cancel

SWB-028 Test result analysis

SAFE Block Win7 Version 1.0 performed correctly - the operation failed and the hashes did not change.

8.29 Test Case SWB-29

This case tests SAFE Block Win7 V1.0's compliance with assertions SWB-AM-10 and SWB-AO-08. The expected result of this test is that the PASTE operation will fail with an error message, and the hash value of the target disk will be unchanged after the test. The PASTE operation was attempted using a Copy-Paste operation in Windows® Explorer.

Figure 61: SWB-29 Drive Configuration

(())	Layout	Type	File System	Status		0
(C:)	Simple I	Basic	NTFS	Healthy (Boot, Page F	ile, Crash Dump, Primary Partition)	7
System Reserved	Simple I	Basic	NTFS	Healthy (System, Acti	ve, Primary Partition)	1
USB (J:)	Simple I	Basic	NTFS	Healthy (Active, Prim	ary Partition)	9
	System Re		C.)		75.81 GR	,
	Healthy (S			Page File, Crash Dun	Unallocated	
	,		///////////////////////////////////////			
	,					

- System Disk
- Blocked USB Disk

Figure 62: SWB-29 SAFE Block Win7 v1.0 Configuration



Table 54: SWB-29 MD5 Hash Values

Before USB Disk	0e7a3e041653b210d14bf97601b7288d
After USB Disk	0e7a3e041653b210d14bf97601b7288d

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Figure 63: SWB-29 PASTE operation result

ganize 👻 Share with 👻					855	•	(?
Favorites Pavorites Position Desktop Downloads Wir Wornes Downloads Libraires Videos Local Disk (C2) US (b) VOS (b)	77.86 Copy Folder The disk is write- Remove the write- Remove the write-	e-protection or use another disk. NIST Testing Date created: 6/13/2010	File folder	Size			

SWB-029 Test result analysis

SAFE Block Win7 Version 1.0 performed correctly - the operation failed and the hashes did not change.

8.30 Test Case SWB-30

This case tests SAFE Block Win7 V1.0's compliance with mandatory assertion SWB-AM-10 and optional assertion SWB-AO-08. The expected result of this test is that the SAVE AS operation will fail with an I/O error and the hash value of the test disk will be unchanged by the test. The SAVE AS operation was attempted using Windows® Notepad.

Volume	Layout	Type	File System	Status		0
 ■ (C:) ■ System Reserved ■ USB (<i>i</i>:) 					age File, Crash Dump, Primary Partition) , Active, Primary Partition) Primary Partition)	
< Disk 0						Þ
149.05 GB	System R 100 MB N Healthy (S	TF: 7	(C:) 13.14 GB NTFS Healthy (Boot,	, Page File, Crash Dun	75.81 GB Unallocated	
956 MB	USB (J:) 949 MB N [*] Healthy (A		Primary Parti	tion)		

System Disk • Blocked USB Disk

•

Figure 65: SWB-30 SAFE Block Win7 v1.0 Configuration SAFE Block Win7 by ForensicSoft

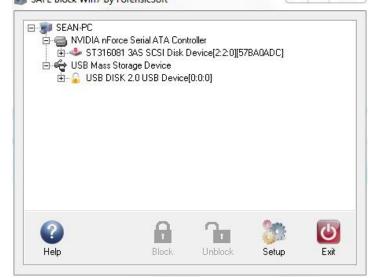


Table 55: SWB-30 MD5 Hash Values

Before USB Disk	0e7a3e041653b210d14bf97601b7288d
After USB Disk	0e7a3e041653b210d14bf97601b7288d

Figure 66: SWB-30 SAVE AS operation result

Image: Second ANST Image: Second ANST Image: Second Anst Image: Second Anst <th>Orgenize • Item modified Type Outer modified Type Size Decomments Win2dd Size As Pictures Win2dd Size As Pictures Videos Size As Computer Size As Size As File computer Size As Size As File computer Size As Size As</th> <th>Save As</th> <th></th> <th></th>	Orgenize • Item modified Type Outer modified Type Size Decomments Win2dd Size As Pictures Win2dd Size As Pictures Videos Size As Computer Size As Size As File computer Size As Size As File computer Size As Size As	Save As		
Winds Name Date modified Type Site Muldic Win7:85 Views Image: Computer Noncest Muldic Views Views Image: Computer Noncest Muldic Views Image: Computer Image: Computer Multic Image: Computer Image: Computer Image: Computer Multic Image: Computer <td< th=""><th></th><th>COOR Computer + USB (); + NIST +</th><th>- 4+ Search NIST P</th><th></th></td<>		COOR Computer + USB (); + NIST +	- 4+ Search NIST P	
Warne Date modified Type Sore Documents Win3d6 Save As Sore Videos Videos Image of the sore Sore Videos Videos Computer Computer Videos Image of the sore Computer Sore Videos Image of the sore Computer Sore Videos Image of the sore Sore Computer Videos Image of the sore Sore Computer Videos Image of the sore Sore Computer Videos Image of the sore Sore Sore Sore as type Tet bocuments ('tot) Image of the sore Sore	Name Date modified Type Size Documents Win366 Size AS Size AS Pictures Videos Videos Size AS Videos Videos OK OK Videos Videos OK OK Videos Videos Videos Videos Videos Videos OK OK Videos Videos Videos Videos Sive as type Teta bacuments (*tat) Videos Videos		iii • 🔞	
Save as type: Test Documents (".txt)	Sive is type [Test Documents (".tst)	Computer Co	Save As	
) •				
Hide Folders Encoding: ANSI Save Cancel	Hide Folders Encoding: ANSI Save Cancel	Save as type: Text Documents (*.bit)	•	
		Hide Folders	Encoding: ANSI	

SWB-030 Test result analysis

SAFE Block Win7 Version 1.0 performed correctly -the operation failed and the hashes did not change.

Appendix A – Sample NIST Software Write Blocker Test Suite V1.2 Complete Log File Listing

Log File for test SWB-11

NIST Software Write Blo		Suite V1.	2	
Tue Jun 22 20:29:25 201	C			
Test case: SWB-				
Command set: RWO	VU			
Number of drives: 4				
Protection pattern: UUP				
Test administered by:	SA			
Testing device ¥¥.¥Phys.	icalDrive1			
Device is software WRIT	E ENABLED			
IRP Function		Code	Result	
		(0-00)		
IRP_MJ_CREATE	ישר		ALLOWED	
IRP_MJ_CREATE_NAMED_PI	ГL.		ALLOWED	
IRP_MJ_CLOSE			ALLOWED	
IRP_MJ_READ			ALLOWED ALLOWED	
IRP_MJ_WRITE IRP_MJ_QUERY_INFORMATIO	INC		ALLOWED	
IRP_MJ_SET_INFORMATION	JIN		ALLOWED	
IRP_MJ_QUERY_EA			ALLOWED	
IRP_MJ_SET_EA			ALLOWED	
IRP_MJ_FLUSH_BUFFERS			ALLOWED	
IRP_MJ_QUERY_VOLUME_IN	FORMATION		ALLOWED	
IRP_MJ_SET_VOLUME_INFO			ALLOWED	
IRP_MJ_DIRECTORY_CONTROL			ALLOWED	
IRP_MJ_FILE_SYSTEM_CON			ALLOWED	
IRP_MJ_DEVICE_CONTROL	-	(0x0E)	ALLOWED	
IRP_MJ_SCSI		(0x0F)		
SCSI Operation	Opcode			
TEST_UNIT_READY	(0x00)		ALLOWED	
REWIND	(0x01)		ALLOWED	
VENDOR_SPECIFIC_CDB			ALLOWED	
REQUEST_SENSE	(0x03)		ALLOWED	
FORMAT_UNIT	(0x04)		ALLOWED	
	(0x05)		ALLOWED	
VENDOR_SPECIFIC_CDB	(0x06)		ALLOWED	
REASSIGN_BLOCKS	(0x07)		ALLOWED	
READ6	(0x08)		ALLOWED	
VENDOR_SPECIFIC_CDB	(0x09)		ALLOWED	
WRITE6	(0x0A)		ALLOWED	
SEEK6	(0x0B)		ALLOWED	
VENDOR_SPECIFIC_CDB	(0x0C)		ALLOWED	
VENDOR_SPECIFIC_CDB	(0x0D)		ALLOWED	

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	(0.07)	
VENDOR_SPECIFIC_CDB	(0x0E)	ALLOWED
READ_REVERSE6	(0x0F)	ALLOWED
WRITE_FILEMARKS	(0x10)	ALLOWED
SPACE	(0x11)	ALLOWED
INQUIRY	(0x12)	ALLOWED
VERIFY6	(0x13)	ALLOWED
RECOVER_BUF_DATA	(0x14)	ALLOWED
MODE_SELECT	(0x15)	ALLOWED
RESERVE_UNIT	(0x16)	ALLOWED
RELEASE_UNIT	(0x17)	ALLOWED
COPY	(0x18)	ALLOWED
ERASE	(0x19)	ALLOWED
MODE_SENSE	(0x1A)	ALLOWED
START_STOP_UNIT	(0x1B)	ALLOWED
RECEIVE_DIAGNOSTIC	(0x1C)	ALLOWED
SEND_DIAGNOSTIC	(0x1D)	ALLOWED
MEDIUM_REMOVAL	(0x1E)	ALLOWED
UNDEFINED_CDB	(0x1F)	ALLOWED
VENDOR_SPECIFIC_CDB	(0x20)	ALLOWED
VENDOR_SPECIFIC_CDB	(0x21)	ALLOWED
VENDOR_SPECIFIC_CDB	(0x22)	ALLOWED
VENDOR_SPECIFIC_CDB	(0x23)	ALLOWED
SET_WINDOW	(0x24)	ALLOWED
READ_CAPACITY	(0x25)	ALLOWED
VENDOR_SPECIFIC_CDB	(0x26)	ALLOWED
VENDOR_SPECIFIC_CDB	(0x27)	ALLOWED
READ10	(0x28)	ALLOWED
READ_GENERATION	(0x29)	ALLOWED
WRITE10	(0x2A)	ALLOWED
SEEK10	(0x2B)	ALLOWED
ERASE10	(0x2C)	ALLOWED
VENDOR_SPECIFIC_CDB	(0x2D)	ALLOWED
WRITE_AND_VERIFY10	(0x2E)	ALLOWED
VERIFY	(0x2F)	ALLOWED
SEARCH DATA HIGH	(0x30)	ALLOWED
SEARCH_DATA_EQUAL	(0x31)	ALLOWED
SEARCH_DATA_LOW	(0x32)	ALLOWED
SET_LIMITS	(0x33)	ALLOWED
READ_POSITION	(0x34)	ALLOWED
SYNCHRONIZE_CACHE	(0x35)	ALLOWED
LOCK_UNLOCK_CACHE	(0x36)	ALLOWED
READ DEFECT DATA	(0x37)	ALLOWED
MEDIUM_SCAN	(0x38)	ALLOWED
COMPARE	(0x39)	ALLOWED
COPY_COMPARE	(0x3A)	ALLOWED
WRITE_DATA_BUFF	(0x3B)	ALLOWED
READ_DATA_BUFF	(0x3C)	ALLOWED
UNDEFINED_CDB	(0x3D)	ALLOWED
READ_LONG10	(0x3E)	ALLOWED
WRITE_LONG10	(0x3E) (0x3F)	ALLOWED
CHANGE_DEFINITION	(0x3r) (0x40)	ALLOWED
WRITE_SAME10	(0x40) (0x41)	ALLOWED
READ_SUB_CHANNEL	(0x41) (0x42)	ALLOWED
READ_SOB_CHANNEL READ_TOC	(0x42) (0x43)	ALLOWED
100 <u>100</u> 100	(UAIJ)	

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READ_HEADER	(0x44)	ALLOWED
PLAY_AUDIO	(0x45)	ALLOWED
GET_CONFIGURATION	(0x46)	ALLOWED
PLAY_AUDIO_MSF	(0x47)	ALLOWED
PLAY_TRACK_INDEX	(0x48)	ALLOWED
PLAY_TRACK_RELATIVE	(0x49)	ALLOWED
GET_EVENT_STATUS	(0x4A)	ALLOWED
PAUSE_RESUME	(0x4B)	ALLOWED
LOG_SELECT	(0x4C)	ALLOWED
LOG_SENSE	(0x4D)	ALLOWED
STOP_PLAY_SCAN	(Ox4E)	ALLOWED
UNDEFINED_CDB	(Ox4F)	ALLOWED
XDWRITE10	(0x50)	ALLOWED
XPWRITE10	(0x51)	ALLOWED
XDREAD10	(0x52)	ALLOWED
XDWRITucRead10	(0x53)	ALLOWED
SEND_OPC_INFORMATION	(0x54)	ALLOWED
MODE_SELECT10	(0x55)	ALLOWED
RESERVE_UNIT10	(0x56)	ALLOWED
RELEASE_UNIT10	(0x57)	ALLOWED
REPAIR_TRACK	(0x58)	ALLOWED
UNDEFINED_CDB	(0x59)	ALLOWED
MODE_SENSE10	(0x5A)	ALLOWED
CLOSE_TRACK_SESSION	(0x5B)	ALLOWED
READ_BUFFER_CAPACITY	(0x5C)	ALLOWED
SEND_CUE_SHEET	(0x5D)	ALLOWED
PERSISTENT_RESERVE_IN	(0x5E)	ALLOWED
PERSISTENT_RESERVE_OUT	(0x5F)	ALLOWED
UNDEFINED_CDB	(0x60)	ALLOWED
UNDEFINED_CDB	(0x61)	ALLOWED
UNDEFINED_CDB	(0x62)	ALLOWED
UNDEFINED_CDB	(0x63)	ALLOWED
UNDEFINED_CDB	(0x64)	ALLOWED
UNDEFINED_CDB	(0x65)	ALLOWED
UNDEFINED_CDB	(0x66)	ALLOWED
UNDEFINED_CDB	(0x67)	ALLOWED
UNDEFINED_CDB	(0x68)	ALLOWED
UNDEFINED_CDB	(0x69)	ALLOWED
UNDEFINED_CDB	(0x6A)	ALLOWED
UNDEFINED_CDB	(0x6B)	ALLOWED
UNDEFINED_CDB	(0x6C)	ALLOWED
UNDEFINED_CDB	(0x6D)	ALLOWED
UNDEFINED_CDB	(0x6E)	ALLOWED
UNDEFINED_CDB	(0x6F)	ALLOWED
UNDEFINED_CDB	(0x70)	ALLOWED
UNDEFINED_CDB	(0x71)	ALLOWED
UNDEFINED_CDB	(0x72)	ALLOWED
UNDEFINED_CDB	(0x73)	ALLOWED
UNDEFINED_CDB	(0x74)	ALLOWED
UNDEFINED_CDB	(0x75)	ALLOWED
UNDEFINED_CDB	(0x76)	ALLOWED
UNDEFINED_CDB	(0x77)	ALLOWED
UNDEFINED_CDB	(0x78)	ALLOWED
UNDEFINED_CDB	(0x79)	ALLOWED

UNDEFINED_CDB	(0x7A)	ALLOWED	
UNDEFINED_CDB	(0x7B)	ALLOWED	
UNDEFINED_CDB	(0x7C)	ALLOWED	
UNDEFINED_CDB	(0x7D)	ALLOWED	
UNDEFINED_CDB	(0x7E)	ALLOWED	
UNDEFINED_CDB	(0x7F)	ALLOWED	
XDWRITE_EXTENDED	(0x80)	ALLOWED	
REBUILD	(0x81)	ALLOWED	
REGENERATE	(0x82)	ALLOWED	
EXTENDED COPY	(0x83)	ALLOWED	
RECEIVE_COPY_RESULTS	(0x84)	ALLOWED	
ATA_PASSTHROUGH16	(0x85)	ALLOWED	
ACCESS_CONTROL_IN	(0x86)	ALLOWED	
ACCESS_CONTROL_OUT	(0x87)	ALLOWED	
READ16	(0x88)	ALLOWED	
UNDEFINED CDB	(0x89)	ALLOWED	
WRITE16	(0x8A)	ALLOWED	
UNDEFINED CDB	(0x8B)	ALLOWED	
READ ATTRIBUTE	(0x8C)	ALLOWED	
WRITE ATTRIBUTE	(0x8D)	ALLOWED	
WRITE_AND_VERIFY16	(0x8E)	ALLOWED	
VERIFY16	(0x8F)	ALLOWED	
PRE-FETCH16	(0x90)	ALLOWED	
SYNCHRONIZE CACHE16	(0x91)	ALLOWED	
LOCK-UNLOCK CACHE	(0x92)	ALLOWED	
WRITE_SAME16	(0x93)	ALLOWED	
UNDEFINED CDB	(0x94)	ALLOWED	
UNDEFINED CDB	(0x95)	ALLOWED	
UNDEFINED CDB	(0x96)	ALLOWED	
UNDEFINED CDB	(0x97)	ALLOWED	
UNDEFINED_CDB	(0x98)	ALLOWED	
UNDEFINED_CDB	(0x99)	ALLOWED	
UNDEFINED_CDB	(0x9A)	ALLOWED	
UNDEFINED_CDB	(0x9B)	ALLOWED	
UNDEFINED CDB	(0x9C)	ALLOWED	
UNDEFINED CDB	(0x9D)	ALLOWED	
UNDEFINED_CDB	(0x9E)	ALLOWED	
UNDEFINED CDB	(0x9E) (0x9F)	ALLOWED	
REPORT_LUNS	(0x30)	ALLOWED	
ATA_PASSTHROUGH12	(0xA0) (0xA1)	ALLOWED	
SEND EVENT	(0xA1) (0xA2)	ALLOWED	
SEND_EVENT SEND_KEY	(0xA2) (0xA3)	ALLOWED	
REPORT KEY	(0xA3) (0xA4)	ALLOWED	
MOVE_MEDIUM	(0xA4) (0xA5)	ALLOWED	
LOAD_UNLOAD_SLOT	(0xA6)	ALLOWED	
SET_READ_AHEAD	(0xA0) (0xA7)	ALLOWED	
READ12	(0xA8)	ALLOWED	
UNDEFINED CDB	(0xA9)	ALLOWED	
WRITE12	(OXAA)	ALLOWED	
UNDEFINED CDB	(OXAA) (OXAB)	ALLOWED	
ERASE12	(OXAD)	ALLOWED	
READ_DVD_STRUCTURE	(OXAC)	ALLOWED	
WRITE_AND_VERIFY12	(OXAD) (OXAE)	ALLOWED	
VERIFY12	(OXAE)	ALLOWED	
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SEARCH_DATA_HIGH12	(0xB0)	ALLOWED
SEARCH_DATA_EQUAL12	(0xB1)	ALLOWED
SEARCH_DATA_LOW12	(0xB2)	ALLOWED
SET_LIMITS12	(0xB3)	ALLOWED
READ_ELEMENT_STATUS_AT	(0xB4)	ALLOWED
REQUEST_VOL_ELEMENT	(0xB5)	ALLOWED
SEND_VOLUME_TAG	(0xB6)	ALLOWED
 READ_DEFECT_DATA12	(0xB7)	ALLOWED
 READ_ELEMENT_STATUS	(0xB8)	ALLOWED
READ_CD_MSF12	(0xB9)	ALLOWED
SCAN12	(0xBA)	ALLOWED
SET_CDROM_SPEED12	(0xBB)	ALLOWED
PLAY_CD12	(0xBC)	ALLOWED
MECHANISM_STATUS	(0xBD)	ALLOWED
READ_CD12	(0xBE)	ALLOWED
SEND_DVD_STRUCTURE	(OxBF)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC0)	ALLOWED
VENDOR SPECIFIC CDB	(0xC1)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC2)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC3)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC4)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC5)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC6)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC7)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC8)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC9)	ALLOWED
VENDOR_SPECIFIC_CDB	(OxCA)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xCB)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xCC)	ALLOWED
VENDOR_SPECIFIC_CDB	(OxCD)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXCE)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXCF)	ALLOWED
VENDOR SPECIFIC CDB	(0xD0)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD1)	ALLOWED
VENDOR SPECIFIC CDB	(0xD2)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD3)	ALLOWED
VENDOR SPECIFIC CDB	(0xD4)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD4)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD6)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD7)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD8)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD9)	ALLOWED
VENDOR_SPECIFIC_CDB	(OxDA)	ALLOWED
VENDOR_SPECIFIC_CDB	(OxDR)	ALLOWED
VENDOR_SPECIFIC_CDB	(OxDC)	ALLOWED
VENDOR_SPECIFIC_CDB	(OxDC) (OxDD)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXDE)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXDE) (OXDF)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xE0)	ALLOWED
VENDOR_SPECIFIC_CDB VENDOR_SPECIFIC_CDB	(0xE0) (0xE1)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xE1) (0xE2)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xE2) (0xE3)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xE3) (0xE4)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xE4) (0xE5)	ALLOWED

VENDOR_SPECIFIC_CDB	(0xE6)		ALLOWED		
VENDOR SPECIFIC CDB	(0xE7)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xE8)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xE9)		ALLOWED		
VENDOR_SPECIFIC_CDB	(OXES)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xEB)		ALLOWED		
VENDOR_SPECIFIC_CDB	(OxEC)		ALLOWED		
VENDOR_SPECIFIC_CDB	(OxED)		ALLOWED		
VENDOR_SPECIFIC_CDB	(OxEE)		ALLOWED		
VENDOR_SPECIFIC_CDB	(OxEF)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xF0)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xF1)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xF2)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xF3)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xF4)		ALLOWED		
VENDOR SPECIFIC CDB					
	(0xF5)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xF6)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xF7)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xF8)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xF9)		ALLOWED		
VENDOR_SPECIFIC_CDB	(OxFA)		ALLOWED		
VENDOR_SPECIFIC_CDB	(OxFB)		ALLOWED		
VENDOR_SPECIFIC_CDB	(OxFC)		ALLOWED		
VENDOR SPECIFIC CDB	(OxFD)		ALLOWED		
VENDOR_SPECIFIC_CDB	(OxFE)		ALLOWED		
VENDOR_SPECIFIC_CDB	(OxFF)		ALLOWED		
	(-)				
IRP_MJ_SHUTDOWN		(0x10)	ALLOWED		
IRP_MJ_LOCK_CONTROL		(0x10) (0x11)			
IRP_MJ_CLEANUP		(0x12)			
IRP_MJ_CREATE_MAILSLOT		(0x13)			
IRP_MJ_QUERY_SECURITY		(0x14)			
IRP_MJ_SET_SECURITY		(0x15)			
IRP_MJ_POWER		(0x16)	ALLOWED		
IRP_MJ_SYSTEM_CONTROL		(0x17)	ALLOWED		
IRP_MJ_DEVICE_CHANGE		(0x18)	ALLOWED		
IRP_MJ_QUERY_QUOTA		(0x19)	ALLOWED		
IRP_MJ_SET_QUOTA			ALLOWED		
IRP MJ PNP			ALLOWED		
		· · · · ·			
***** TEST	RESULT	S SUMMARY	* * * * * * * * * * *	* * * * * * *	
1101					
Test Category		Allowed	Blocked	Total	
Read IRP's		4	0	4	
Write IRP's		8	0	8	
Other IRP's		15	0	15	
		± 0	0	τJ	
Read CDB's		27	0	27	
Write CDB's		34	0	34	
Other CDB's		62	0	62	
Vendor SPecific CDB's		80	0	80	
Undefined CDB's		53	0	53	
		55	0	55	

Testing device ¥¥.¥Phys	icalDrive?		
Device is software WRIT			
			_
IRP Function		Code	Result
IRP_MJ_CREATE		(0x00)	ALLOWED
IRP_MJ_CREATE_NAMED_PI	PE	(0x01)	ALLOWED
IRP_MJ_CLOSE		(0x02)	ALLOWED
IRP_MJ_READ		(0x03)	ALLOWED
IRP_MJ_WRITE		(0x04)	ALLOWED
IRP_MJ_QUERY_INFORMATI	ON	(0x05)	ALLOWED
IRP_MJ_SET_INFORMATION		(0x06)	ALLOWED
IRP_MJ_QUERY_EA		(0x07)	ALLOWED
IRP_MJ_SET_EA		(0x08)	ALLOWED
IRP_MJ_FLUSH_BUFFERS		(0x09)	ALLOWED
IRP_MJ_QUERY_VOLUME_IN	FORMATION	(0x0A)	ALLOWED
IRP_MJ_SET_VOLUME_INFO	RAMATION	(0x0B)	ALLOWED
IRP_MJ_DIRECTORY_CONTR			ALLOWED
IRP_MJ_FILE_SYSTEM_CON			ALLOWED
			ALLOWED
IRP_MJ_SCSI		(0x0F)	
SCSI Operation	Opcodo		
TEST_UNIT_READY	(0x00)		ALLOWED
	(0x01)		ALLOWED
VENDOR_SPECIFIC_CDB	(0x02)		ALLOWED
REQUEST_SENSE			ALLOWED
FORMAT_UNIT	(0x04)		
READ_BLOCK_LIMITS			ALLOWED
VENDOR_SPECIFIC_CDB			ALLOWED
REASSIGN_BLOCKS			ALLOWED
READ6	(0x08)		ALLOWED
VENDOR_SPECIFIC_CDB			ALLOWED
WRITE6	(0x0A)		ALLOWED
SEEK6	(0x0B)		ALLOWED
VENDOR_SPECIFIC_CDB	(0x0C)		ALLOWED
VENDOR_SPECIFIC_CDB	(0x0D)		ALLOWED
VENDOR_SPECIFIC_CDB	(0x0E)		ALLOWED
READ_REVERSE6	(0x0F)		ALLOWED
WRITE_FILEMARKS	(0x10)		ALLOWED
SPACE	(0x11)		ALLOWED
INQUIRY	(0x12)		ALLOWED
VERIFY6	(0x13)		ALLOWED
RECOVER_BUF_DATA	(0x14)		ALLOWED
MODE_SELECT	(0x14) (0x15)		ALLOWED
RESERVE_UNIT	(0x16)		ALLOWED
RELEASE_UNIT	(0x10) (0x17)		ALLOWED
COPY	(0x17) (0x18)		ALLOWED
ERASE	(0x10) (0x19)		ALLOWED
MODE_SENSE	(0x19) (0x1A)		ALLOWED
START_STOP_UNIT	(0x1A) (0x1B)		ALLOWED
RECEIVE_DIAGNOSTIC	(0x16) (0x1C)		ALLOWED
SEND_DIAGNOSTIC	(0x1C) (0x1D)		ALLOWED
SHID_DIMONOSIIC	(OXID)		

MEDIUM_REMOVAL	(0x1E)	ALLOWED
UNDEFINED_CDB	(0x1F)	ALLOWED
VENDOR_SPECIFIC_CDB	(0x20)	ALLOWED
VENDOR_SPECIFIC_CDB	(0x21)	ALLOWED
VENDOR_SPECIFIC_CDB	(0x22)	ALLOWED
VENDOR_SPECIFIC_CDB	(0x23)	ALLOWED
SET_WINDOW	(0x24)	ALLOWED
READ_CAPACITY	(0x25)	ALLOWED
VENDOR_SPECIFIC_CDB	(0x26)	ALLOWED
VENDOR_SPECIFIC_CDB	(0x27)	ALLOWED
READ10	(0x28)	ALLOWED
READ_GENERATION	(0x29)	ALLOWED
WRITE10	(0x2A)	ALLOWED
SEEK10	(0x2B)	ALLOWED
ERASE10	(0x2C)	ALLOWED
VENDOR_SPECIFIC_CDB	(0x2D)	ALLOWED
WRITE_AND_VERIFY10	(0x2E)	ALLOWED
VERIFY	(0x2F)	ALLOWED
SEARCH_DATA_HIGH	(0x30)	ALLOWED
SEARCH_DATA_EQUAL	(0x31)	ALLOWED
SEARCH_DATA_LOW	(0x32)	ALLOWED
SET_LIMITS	(0x33)	ALLOWED
READ_POSITION	(0x34)	ALLOWED
SYNCHRONIZE_CACHE	(0x35)	ALLOWED
LOCK_UNLOCK_CACHE	(0x36)	ALLOWED
READ DEFECT DATA	(0x37)	ALLOWED
MEDIUM SCAN	(0x38)	ALLOWED
COMPARE	(0x39)	ALLOWED
COPY_COMPARE	(0x3A)	ALLOWED
WRITE_DATA_BUFF	(0x3B)	ALLOWED
READ_DATA_BUFF	(0x3C)	ALLOWED
UNDEFINED_CDB	(0x3D)	ALLOWED
READ LONG10	(0x3E)	ALLOWED
WRITE LONG10	(0x3F)	ALLOWED
CHANGE DEFINITION	(0x40)	ALLOWED
WRITE_SAME10	(0x41)	ALLOWED
READ_SUB_CHANNEL	(0x42)	ALLOWED
READ_TOC	(0x43)	ALLOWED
READ_HEADER	(0x44)	ALLOWED
	(0x45)	ALLOWED
	(0x46)	ALLOWED
PLAY_AUDIO_MSF	(0x47)	ALLOWED
PLAY_TRACK_INDEX	(0x48)	ALLOWED
PLAY_TRACK_RELATIVE	(0x49)	ALLOWED
GET_EVENT_STATUS	(0x4A)	ALLOWED
PAUSE RESUME	(0x4B)	ALLOWED
LOG_SELECT	(0x4C)	ALLOWED
LOG_SENSE	(0x4D)	ALLOWED
STOP_PLAY_SCAN	(0x4E)	ALLOWED
UNDEFINED_CDB	(0x4F)	ALLOWED
XDWRITE10	(0x50)	ALLOWED
XPWRITE10	(0x51)	ALLOWED
XDREAD10	(0x52)	ALLOWED
XDWRITucRead10	(0x53)	ALLOWED
-	. ,	

SEND_OPC_INFORMATION	(0x54)	ALLOWED
MODE_SELECT10	(0x55)	ALLOWED
RESERVE_UNIT10	(0x56)	ALLOWED
RELEASE_UNIT10	(0x57)	ALLOWED
REPAIR_TRACK	(0x58)	ALLOWED
UNDEFINED_CDB	(0x59)	ALLOWED
MODE_SENSE10	(0x5A)	ALLOWED
CLOSE_TRACK_SESSION	(0x5B)	ALLOWED
READ_BUFFER_CAPACITY	(0x5C)	ALLOWED
SEND CUE SHEET	(0x5D)	ALLOWED
PERSISTENT_RESERVE_IN	(0x5E)	ALLOWED
PERSISTENT_RESERVE_OUT		ALLOWED
UNDEFINED_CDB	(0x60)	ALLOWED
UNDEFINED_CDB	(0x61)	ALLOWED
UNDEFINED CDB	(0x62)	ALLOWED
UNDEFINED_CDB	(0x63)	ALLOWED
UNDEFINED_CDB	(0x64)	ALLOWED
UNDEFINED CDB	(0x65)	ALLOWED
UNDEFINED CDB	(0x66)	ALLOWED
UNDEFINED_CDB	(0x67)	ALLOWED
UNDEFINED_CDB	(0x68)	ALLOWED
UNDEFINED CDB	(0x69)	ALLOWED
UNDEFINED CDB	(0x6A)	ALLOWED
UNDEFINED_CDB	(0x6B)	ALLOWED
UNDEFINED_CDB	(0x6C)	ALLOWED
UNDEFINED CDB	(0x6D)	ALLOWED
UNDEFINED_CDB	(0x6E)	ALLOWED
UNDEFINED_CDB	(0x6F)	ALLOWED
UNDEFINED CDB	(0x70)	ALLOWED
UNDEFINED_CDB	(0x71)	ALLOWED
UNDEFINED_CDB	(0x72)	ALLOWED
UNDEFINED CDB	(0x73)	ALLOWED
UNDEFINED_CDB	(0x74)	ALLOWED
UNDEFINED_CDB	(0x75)	ALLOWED
UNDEFINED_CDB	(0x76)	ALLOWED
UNDEFINED_CDB	(0x77)	ALLOWED
UNDEFINED CDB	(0x78)	ALLOWED
UNDEFINED CDB	(0x79)	ALLOWED
UNDEFINED_CDB	(0x79) (0x7A)	ALLOWED
UNDEFINED_CDB	(0x7B)	ALLOWED
	(0x7C)	ALLOWED
UNDEFINED_CDB UNDEFINED_CDB	(0x7C) (0x7D)	ALLOWED
—	(0x7E)	ALLOWED
UNDEFINED_CDB	(0x7E) (0x7F)	ALLOWED
UNDEFINED_CDB	, ,	ALLOWED
XDWRITE_EXTENDED	(0x80)	
REBUILD	(0x81)	ALLOWED
REGENERATE	(0x82)	ALLOWED
EXTENDED_COPY	(0x83) (0x84)	ALLOWED
RECEIVE_COPY_RESULTS		ALLOWED
ATA_PASSTHROUGH16	(0x85)	ALLOWED
ACCESS_CONTROL_IN	(0x86)	ALLOWED
ACCESS_CONTROL_OUT	(0x87)	ALLOWED
READ16 UNDEFINED_CDB	(0x88) (0x89)	ALLOWED ALLOWED
	(0407)	

WRITE16(0x8A)ALLOWEDUNDEFINED_CDB(0x8B)ALLOWEDREAD_ATTRIBUTE(0x8C)ALLOWEDWRITE_ATTRIBUTE(0x8D)ALLOWEDWRITE_AND_VERIFY16(0x8E)ALLOWEDVERIFY16(0x8F)ALLOWEDPRE-FETCH16(0x90)ALLOWEDSYNCHRONIZE_CACHE16(0x91)ALLOWEDUNDEFINED_CDB(0x93)ALLOWEDUNDEFINED_CDB(0x95)ALLOWEDUNDEFINED_CDB(0x96)ALLOWEDUNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
READ_ATTRIBUTE(0x8C)ALLOWEDWRITE_ATTRIBUTE(0x8D)ALLOWEDWRITE_AND_VERIFY16(0x8E)ALLOWEDVERIFY16(0x8F)ALLOWEDPRE-FETCH16(0x90)ALLOWEDSYNCHRONIZE_CACHE16(0x91)ALLOWEDLOCK-UNLOCK CACHE(0x92)ALLOWEDWRITE_SAME16(0x93)ALLOWEDUNDEFINED_CDB(0x95)ALLOWEDUNDEFINED_CDB(0x96)ALLOWEDUNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
WRITE_ATTRIBUTE(0x8D)ALLOWEDWRITE_AND_VERIFY16(0x8E)ALLOWEDVERIFY16(0x8F)ALLOWEDPRE-FETCH16(0x90)ALLOWEDSYNCHRONIZE_CACHE16(0x91)ALLOWEDLOCK-UNLOCK CACHE(0x92)ALLOWEDWRITE_SAME16(0x93)ALLOWEDUNDEFINED_CDB(0x95)ALLOWEDUNDEFINED_CDB(0x96)ALLOWEDUNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
WRITE_AND_VERIFY16(0x8E)ALLOWEDVERIFY16(0x8F)ALLOWEDPRE-FETCH16(0x90)ALLOWEDSYNCHRONIZE_CACHE16(0x91)ALLOWEDLOCK-UNLOCK CACHE(0x92)ALLOWEDWRITE_SAME16(0x93)ALLOWEDUNDEFINED_CDB(0x95)ALLOWEDUNDEFINED_CDB(0x96)ALLOWEDUNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
VERIFY16(0x8F)ALLOWEDPRE-FETCH16(0x90)ALLOWEDSYNCHRONIZE_CACHE16(0x91)ALLOWEDLOCK-UNLOCK CACHE(0x92)ALLOWEDWRITE_SAME16(0x93)ALLOWEDUNDEFINED_CDB(0x94)ALLOWEDUNDEFINED_CDB(0x95)ALLOWEDUNDEFINED_CDB(0x96)ALLOWEDUNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
PRE-FETCH16(0x90)ALLOWEDSYNCHRONIZE_CACHE16(0x91)ALLOWEDLOCK-UNLOCK CACHE(0x92)ALLOWEDWRITE_SAME16(0x93)ALLOWEDUNDEFINED_CDB(0x94)ALLOWEDUNDEFINED_CDB(0x95)ALLOWEDUNDEFINED_CDB(0x96)ALLOWEDUNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
SYNCHRONIZE_CACHE16(0x91)ALLOWEDLOCK-UNLOCK CACHE(0x92)ALLOWEDWRITE_SAME16(0x93)ALLOWEDUNDEFINED_CDB(0x94)ALLOWEDUNDEFINED_CDB(0x95)ALLOWEDUNDEFINED_CDB(0x96)ALLOWEDUNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
SYNCHRONIZE_CACHE16(0x91)ALLOWEDLOCK-UNLOCK CACHE(0x92)ALLOWEDWRITE_SAME16(0x93)ALLOWEDUNDEFINED_CDB(0x94)ALLOWEDUNDEFINED_CDB(0x95)ALLOWEDUNDEFINED_CDB(0x96)ALLOWEDUNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
LOCK-UNLOCK CACHE(0x92)ALLOWEDWRITE_SAME16(0x93)ALLOWEDUNDEFINED_CDB(0x94)ALLOWEDUNDEFINED_CDB(0x95)ALLOWEDUNDEFINED_CDB(0x96)ALLOWEDUNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
WRITE_SAME16(0x93)ALLOWEDUNDEFINED_CDB(0x94)ALLOWEDUNDEFINED_CDB(0x95)ALLOWEDUNDEFINED_CDB(0x96)ALLOWEDUNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
UNDEFINED_CDB(0x94)ALLOWEDUNDEFINED_CDB(0x95)ALLOWEDUNDEFINED_CDB(0x96)ALLOWEDUNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
UNDEFINED_CDB(0x95)ALLOWEDUNDEFINED_CDB(0x96)ALLOWEDUNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
UNDEFINED_CDB(0x96)ALLOWEDUNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
UNDEFINED_CDB(0x97)ALLOWEDUNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
UNDEFINED_CDB(0x98)ALLOWEDUNDEFINED_CDB(0x99)ALLOWED
UNDEFINED_CDB (0x99) ALLOWED
UNDEFINED_CDB (0x9A) ALLOWED
UNDEFINED_CDB (0x9A) ALLOWED
UNDEFINED_CDB (0x9C) ALLOWED
UNDEFINED_CDB (0x9C) ALLOWED
UNDEFINED_CDB (0x9E) ALLOWED
UNDEFINED_CDB (0x9E) ALLOWED
REPORT_LUNS (0xA0) ALLOWED
ATA_PASSTHROUGH12 (0xA1) ALLOWED
SEND_EVENT (0xA2) ALLOWED
SEND_KEY (0xA3) ALLOWED
REPORT_KEY (0xA4) ALLOWED
MOVE_MEDIUM (0xA5) ALLOWED
LOAD_UNLOAD_SLOT (0xA6) ALLOWED
SET_READ_AHEAD (0xA7) ALLOWED
READ12 (0xA8) ALLOWED
UNDEFINED_CDB (0xA9) ALLOWED
WRITE12 (0xAA) ALLOWED
UNDEFINED_CDB (0xAB) ALLOWED
ERASE12 (0xAC) ALLOWED
READ_DVD_STRUCTURE (0xAD) ALLOWED
WRITE_AND_VERIFY12 (0xAE) ALLOWED
VERIFY12 (0xAF) ALLOWED
SEARCH_DATA_HIGH12 (0xB0) ALLOWED
SEARCH_DATA_EQUAL12 (0xB1) ALLOWED
SEARCH_DATA_LOW12 (0xB2) ALLOWED
SET_LIMITS12 (0xB3) ALLOWED
READ_ELEMENT_STATUS_AT (0xB4) ALLOWED
REQUEST_VOL_ELEMENT (0xB5) ALLOWED
SEND_VOLUME_TAG (0xB6) ALLOWED
READ_DEFECT_DATA12 (0xB7) ALLOWED
READ_ELEMENT_STATUS (0xB8) ALLOWED
READ_CD_MSF12 (0xB9) ALLOWED
SCAN12 (0xBA) ALLOWED
SET_CDROM_SPEED12 (0xBB) ALLOWED
PLAY_CD12 (0xBC) ALLOWED
MECHANISM_STATUS (0xBD) ALLOWED
READ_CD12 (0xBE) ALLOWED
SEND_DVD_STRUCTURE (0xBF) ALLOWED

VENDOR_SPECIFIC_CDB	(0xC0)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC1)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC2)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC3)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC4)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC5)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC6)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC7)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC8)	ALLOWED
VENDOR SPECIFIC CDB	(0xC9)	ALLOWED
VENDOR_SPECIFIC_CDB	(OxCA)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xCB)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xCC)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xCD)	ALLOWED
VENDOR_SPECIFIC_CDB	(OxCE)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXCF)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD0)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD0) (0xD1)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD1) (0xD2)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD2) (0xD3)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD3) (0xD4)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD5)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD6)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD0) (0xD7)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD7) (0xD8)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD0) (0xD9)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xD3) (0xDA)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xDR)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXDD)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXDC)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXDE)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXDE)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xE0)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xE0) (0xE1)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xE1) (0xE2)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xE2) (0xE3)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXE3) (OXE4)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xE4) (0xE5)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xE5) (0xE6)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xE0) (0xE7)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xE7) (0xE8)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXE8) (OXE9)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXE9) (OXEA)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXEA) (OXEB)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXEB) (OXEC)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXEC) (OXED)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXED) (OXEE)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXEE) (OXEF)	ALLOWED
VENDOR_SPECIFIC_CDB	(OXEF) (OXFO)	ALLOWED
	(0xF0) (0xF1)	
VENDOR_SPECIFIC_CDB		ALLOWED
VENDOR_SPECIFIC_CDB	(0xF2)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xF3)	ALLOWED
VENDOR_SPECIFIC_CDB VENDOR_SPECIFIC_CDB	(0xF4) (0xF5)	ALLOWED ALLOWED
ARMON_SERCIFIC_CDP	(UAEJ)	dimonal dimonstration and di

VENDOR_SPECIFIC_CDB	(0xF6)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xF7)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xF8)		ALLOWED		
VENDOR_SPECIFIC_CDB	(0xF9)		ALLOWED		
VENDOR_SPECIFIC_CDB	(OxFA)		ALLOWED		
VENDOR_SPECIFIC_CDB	(OxFB)		ALLOWED		
VENDOR_SPECIFIC_CDB	(OXFC)		ALLOWED		
			ALLOWED		
VENDOR_SPECIFIC_CDB	(0xFD)				
	(OxFE)		ALLOWED		
VENDOR_SPECIFIC_CDB	(UXE'E')		ALLOWED		
IRP_MJ_SHUTDOWN		(0×10)	ALLOWED		
IRP_MJ_LOCK_CONTROL			ALLOWED		
IRP_MJ_CLEANUP			ALLOWED		
IRP_MJ_CREATE_MAILSLOT			ALLOWED		
IRP_MJ_QUERY_SECURITY			ALLOWED		
IRP_MJ_SET_SECURITY			ALLOWED		
IRP_MJ_POWER			ALLOWED		
IRP_MJ_SYSTEM_CONTROL			ALLOWED		
IRP_MJ_DEVICE_CHANGE		(0x18)	ALLOWED		
IRP_MJ_QUERY_QUOTA		(0x19)	ALLOWED		
IRP_MJ_SET_QUOTA		(0x1A)	ALLOWED		
IRP_MJ_PNP		(0x1B)	ALLOWED		
**************************************	RESULTS	SUMMARY *	*******	* * * * * * *	
				- 1	
Test Category					
Read IRP's			0	4	
Write IRP's				_	
		8	()	8	
			0	8 15	
Other IRP's		8 15	0	8 15	
Other IRP's		15			
Other IRP's Read CDB's		15 27	0	15 27	
Other IRP's Read CDB's Write CDB's	 	15 27 34	0 0 0	15 27 34	
Other IRP's Read CDB's Write CDB's Other CDB's	· · · · · · · · · · · · · · · · · · ·	15 27 34 62	0 0 0 0	15 27 34 62	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's	· · · · · · · · · · · · · · · · · · ·	15 27 34 62 80	0 0 0 0	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's	· · · · · · · · · · · · · · · · · · ·	15 27 34 62 80	0 0 0 0	15 27 34 62	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's	· · · · · · · · · · · · · · · · · · ·	15 27 34 62 80	0 0 0 0	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device ¥¥.¥Physi	 calDrive3	15 27 34 62 80 53	0 0 0 0	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device ¥¥.¥Physi	 calDrive3	15 27 34 62 80 53	0 0 0 0	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device ¥¥.¥Physi	 calDrive3	15 27 34 62 80 53	0 0 0 0	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device ¥¥.¥Physi Device is software WRITE	 calDrive3	15 27 34 62 80 53 D		15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device ¥¥.¥Physi Device is software WRITE IRP Function IRP_MJ_CREATE	calDrive3 PROTECTE	15 27 34 62 80 53 D Code 	0 0 0 0 0 0 Result BLOCKED	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device ¥¥.¥Physi Device is software WRITE IRP Function IRP Function IRP_MJ_CREATE IRP_MJ_CREATE_NAMED_PIP	calDrive3 PROTECTE	15 27 34 62 80 53 D Code 	0 0 0 0 0 8 Result	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device ¥¥.¥Physi Device is software WRITE IRP Function IRP Function	calDrive3 PROTECTE	15 27 34 62 80 53 D Code (0x00) (0x01)	0 0 0 0 0 0 Result BLOCKED	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device ¥¥.¥Physi Device is software WRITE IRP Function IRP Function IRP_MJ_CREATE IRP_MJ_CREATE_NAMED_PIP	calDrive3 PROTECTE	15 27 34 62 80 53 D Code (0x00) (0x00) (0x01) (0x02)	0 0 0 0 0 0 8 BLOCKED ALLOWED	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device ¥¥.¥Physi Device is software WRITE IRP Function IRP Function IRP_MJ_CREATE IRP_MJ_CREATE_NAMED_PIP IRP_MJ_CLOSE	calDrive3 PROTECTE	15 27 34 62 80 53 D Code (0x00) (0x01) (0x02) (0x03)	0 0 0 0 0 0 0 8 LOCKED ALLOWED ALLOWED	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Iesting device ¥¥.¥Physi Device is software WRITE IRP Function IRP_MJ_CREATE IRP_MJ_CREATE IRP_MJ_CREATE_NAMED_PIP IRP_MJ_CLOSE IRP_MJ_READ IRP_MJ_WRITE	calDrive3 PROTECTE	15 27 34 62 80 53 D Code (0x00) (0x01) (0x02) (0x03) (0x04)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Iesting device ¥¥.¥Physi Device is software WRITE IRP Function IRP_MJ_CREATE IRP_MJ_CREATE_NAMED_PIP IRP_MJ_CLOSE IRP_MJ_READ IRP_MJ_WRITE IRP_MJ_QUERY_INFORMATION	calDrive3 PROTECTE	15 27 34 62 80 53 D Code (0x00) (0x01) (0x02) (0x03) (0x04) (0x05)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Iesting device ¥¥.¥Physi Device is software WRITE IRP Function IRP_MJ_CREATE IRP_MJ_CREATE IRP_MJ_CLOSE IRP_MJ_READ IRP_MJ_WRITE IRP_MJ_QUERY_INFORMATION IRP_MJ_SET_INFORMATION	calDrive3 PROTECTE	15 27 34 62 80 53 D Code (0x00) (0x01) (0x02) (0x03) (0x04) (0x05) (0x06)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device ¥¥.¥Physi Device is software WRITE IRP Function IRP_MJ_CREATE IRP_MJ_CREATE IRP_MJ_CREATE IRP_MJ_CLOSE IRP_MJ_CLOSE IRP_MJ_READ IRP_MJ_WRITE IRP_MJ_QUERY_INFORMATION IRP_MJ_QUERY_EA	calDrive3 PROTECTE	15 27 34 62 80 53 D Code (0x00) (0x01) (0x01) (0x02) (0x03) (0x04) (0x05) (0x06) (0x07)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device ¥¥.¥Physi Device is software WRITE IRP Function IRP_MJ_CREATE IRP_MJ_CREATE IRP_MJ_CLOSE IRP_MJ_CLOSE IRP_MJ_READ IRP_MJ_WRITE IRP_MJ_QUERY_INFORMATION IRP_MJ_QUERY_EA IRP_MJ_SET_EA	calDrive3 PROTECTE	15 27 34 62 80 53 D Code (0x00) (0x01) (0x02) (0x03) (0x04) (0x05) (0x06) (0x07) (0x08)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	15 27 34 62 80	
Other IRP's Read CDB's Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's Testing device ¥¥.¥Physi Device is software WRITE IRP Function IRP_MJ_CREATE IRP_MJ_CREATE IRP_MJ_CREATE IRP_MJ_CLOSE IRP_MJ_CLOSE IRP_MJ_READ IRP_MJ_WRITE IRP_MJ_QUERY_INFORMATION IRP_MJ_QUERY_EA	CalDrive3 PROTECTE	15 27 34 62 80 53 D Code (0x00) (0x01) (0x02) (0x03) (0x04) (0x05) (0x06) (0x07) (0x08) (0x09)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	15 27 34 62 80	

IRP_MJ_SET_VOLUME_INFO IRP_MJ_DIRECTORY_CONTR IRP_MJ_FILE_SYSTEM_CON IRP_MJ_DEVICE_CONTROL IRP_MJ_SCSI	OL	(0x0B) (0x0C) (0x0D) (0x0E) (0x0F)	ALLOWED	
SCSI Operation	Opcode			
TEST_UNIT_READY	(0x00)		ALLOWED	
REWIND	(0x01)		ALLOWED	
VENDOR_SPECIFIC_CDB	(0x02)		BLOCKED	
REQUEST_SENSE	(0x03)		ALLOWED	
FORMAT_UNIT	(0x04)		BLOCKED	
READ_BLOCK_LIMITS	(0x05)		ALLOWED	
VENDOR_SPECIFIC_CDB	(0x06)		BLOCKED	
REASSIGN_BLOCKS	(0x07)		BLOCKED	
READ6	(0x08)		ALLOWED	
VENDOR_SPECIFIC_CDB	(0x09)		BLOCKED	
WRITE6	(0x0A)		BLOCKED	
SEEK6	(0x0B)		ALLOWED	
VENDOR_SPECIFIC_CDB	(0x0C)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0x0D)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0x0E)		BLOCKED	
READ_REVERSE6	(0x0F)		BLOCKED	
WRITE_FILEMARKS	(0x10)		BLOCKED	
SPACE	(0x11)		BLOCKED	
INQUIRY	(0x12)		ALLOWED	
VERIFY6	(0x13)		ALLOWED	
RECOVER_BUF_DATA	(0x14)		BLOCKED	
MODE_SELECT	(0x15)		ALLOWED	
RESERVE_UNIT	(0x16)		ALLOWED	
RELEASE_UNIT	(0x17)		ALLOWED	
COPY	(0x18)		BLOCKED	
ERASE	(0x19)		BLOCKED	
MODE_SENSE	(0x1A)		ALLOWED	
START_STOP_UNIT	(0x1B)		ALLOWED	
RECEIVE_DIAGNOSTIC	(0x1C)		ALLOWED	
SEND_DIAGNOSTIC	(0x1D)		ALLOWED	
MEDIUM_REMOVAL	(Ox1E)		ALLOWED	
UNDEFINED_CDB	(0x1F)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0x20)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0x21)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0x22)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0x23)		BLOCKED	
SET_WINDOW	(0x24)		ALLOWED	
READ_CAPACITY	(0x25)		ALLOWED	
VENDOR_SPECIFIC_CDB	(0x26)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0x27)		BLOCKED	
READ10	(0x28)		ALLOWED	
READ_GENERATION	(0x29)		ALLOWED	
WRITE10	(0x2A)		BLOCKED	
SEEK10	(0x2B)		ALLOWED	
ERASE10	(0x2C)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0x2D)		BLOCKED	

WRITE_AND_VERIFY10	(0x2E)	BLOCKED
VERIFY	(0x2F)	ALLOWED
SEARCH_DATA_HIGH	(0x30)	ALLOWED
SEARCH_DATA_EQUAL	(0x31)	ALLOWED
SEARCH_DATA_LOW	(0x32)	ALLOWED
SET_LIMITS	(0x33)	ALLOWED
READ_POSITION	(0x34)	ALLOWED
	(0x35)	BLOCKED
LOCK_UNLOCK_CACHE	(0x36)	ALLOWED
 READ_DEFECT_DATA	(0x37)	ALLOWED
MEDIUM_SCAN	(0x38)	ALLOWED
COMPARE	(0x39)	ALLOWED
COPY COMPARE	(0x3A)	BLOCKED
WRITE_DATA_BUFF	(0x3B)	BLOCKED
READ DATA BUFF	(0x3C)	ALLOWED
UNDEFINED CDB	(0x3D)	BLOCKED
READ LONG10	(0x3E)	ALLOWED
WRITE LONG10		
—	(0x3F)	BLOCKED
CHANGE_DEFINITION	(0x40)	ALLOWED
WRITE_SAME10	(0x41)	BLOCKED
READ_SUB_CHANNEL	(0x42)	ALLOWED
READ_TOC	(0x43)	ALLOWED
READ_HEADER	(0x44)	ALLOWED
PLAY_AUDIO	(0x45)	ALLOWED
GET_CONFIGURATION	(0x46)	ALLOWED
PLAY_AUDIO_MSF	(0x47)	ALLOWED
PLAY_TRACK_INDEX	(0x48)	ALLOWED
PLAY_TRACK_RELATIVE	(0x49)	ALLOWED
GET_EVENT_STATUS	(0x4A)	ALLOWED
PAUSE_RESUME	(0x4B)	ALLOWED
LOG_SELECT	(0x4C)	ALLOWED
LOG_SENSE	(0x4D)	ALLOWED
STOP_PLAY_SCAN	(Ox4E)	ALLOWED
UNDEFINED_CDB	(Ox4F)	BLOCKED
XDWRITE10	(0x50)	BLOCKED
XPWRITE10	(0x51)	BLOCKED
XDREAD10	(0x52)	ALLOWED
XDWRITucRead10	(0x53)	BLOCKED
SEND_OPC_INFORMATION	(0x54)	ALLOWED
MODE_SELECT10	(0x55)	ALLOWED
RESERVE_UNIT10	(0x56)	ALLOWED
	(0x57)	ALLOWED
REPAIR_TRACK	(0x58)	BLOCKED
UNDEFINED_CDB	(0x59)	BLOCKED
MODE SENSE10	(0x5A)	ALLOWED
CLOSE_TRACK_SESSION	(0x5B)	BLOCKED
READ_BUFFER_CAPACITY	(0x5C)	ALLOWED
SEND_CUE_SHEET	(0x5D)	BLOCKED
PERSISTENT_RESERVE_IN	(0x5E)	ALLOWED
	(0x5E)	ALLOWED
UNDEFINED_CDB	(0x60)	BLOCKED
UNDEFINED_CDB	(0x61)	BLOCKED
UNDEFINED_CDB	(0x62)	BLOCKED
UNDEFINED_CDB	(0x62) (0x63)	BLOCKED

UNDEFINED_CDB	(0x64)	BLOCKED
UNDEFINED_CDB	(0x65)	BLOCKED
UNDEFINED_CDB	(0x66)	BLOCKED
UNDEFINED_CDB	(0x67)	BLOCKED
UNDEFINED_CDB	(0x68)	BLOCKED
UNDEFINED_CDB	(0x69)	BLOCKED
UNDEFINED CDB	(0x6A)	BLOCKED
UNDEFINED CDB	(0x6B)	BLOCKED
UNDEFINED CDB	(0x6C)	BLOCKED
UNDEFINED_CDB	(0x6D)	BLOCKED
UNDEFINED CDB	(0x6E)	BLOCKED
UNDEFINED CDB	(0x6F)	BLOCKED
UNDEFINED CDB	(0x70)	BLOCKED
UNDEFINED CDB	(0x71)	BLOCKED
UNDEFINED CDB	(0x72)	BLOCKED
UNDEFINED CDB	(0x73)	BLOCKED
UNDEFINED_CDB	(0x74)	BLOCKED
UNDEFINED CDB	(0x75)	BLOCKED
UNDEFINED CDB	(0x76)	BLOCKED
UNDEFINED_CDB	(0x77)	BLOCKED
UNDEFINED_CDB	(0x78)	BLOCKED
UNDEFINED CDB	(0x79)	BLOCKED
UNDEFINED CDB	(0x7A)	BLOCKED
UNDEFINED_CDB	(0x7B)	BLOCKED
UNDEFINED_CDB	(0x7C)	BLOCKED
UNDEFINED CDB	(0x7D)	BLOCKED
UNDEFINED CDB	(0x7E)	BLOCKED
UNDEFINED CDB	(0x7E)	BLOCKED
XDWRITE EXTENDED	(0x80)	BLOCKED
REBUILD	(0x81)	BLOCKED
REGENERATE	(0x82)	BLOCKED
EXTENDED COPY	(0x83)	BLOCKED
RECEIVE_COPY_RESULTS	(0x84)	ALLOWED
ATA_PASSTHROUGH16	(0x85)	BLOCKED
ACCESS_CONTROL_IN	(0x86)	ALLOWED
ACCESS_CONTROL_IN ACCESS CONTROL OUT	(0x87)	ALLOWED
READ16		
	(0x88)	ALLOWED
UNDEFINED_CDB WRITE16	(0x89) (0x8A)	BLOCKED
UNDEFINED CDB	(0x8A) (0x8B)	BLOCKED
—		BLOCKED
READ_ATTRIBUTE	(0x8C) (0x8D)	ALLOWED
WRITE_ATTRIBUTE		BLOCKED
WRITE_AND_VERIFY16	(0x8E) (0x8F)	BLOCKED
VERIFY16	(0x8F) (0x90)	ALLOWED
PRE-FETCH16		ALLOWED
SYNCHRONIZE_CACHE16	(0x91)	BLOCKED
LOCK-UNLOCK CACHE	(0x92)	ALLOWED
WRITE_SAME16	(0x93)	BLOCKED
UNDEFINED_CDB	(0x94)	BLOCKED
UNDEFINED_CDB	(0x95)	BLOCKED
UNDEFINED_CDB	(0x96)	BLOCKED
UNDEFINED_CDB	(0x97)	BLOCKED
UNDEFINED_CDB	(0x98) (0x99)	BLOCKED
UNDEFINED_CDB	(UX99)	BLOCKED

UNDEFINED_CDB	(0x9A)	BLOCKED
UNDEFINED_CDB	(0x9B)	BLOCKED
UNDEFINED_CDB	(0x9C)	BLOCKED
UNDEFINED_CDB	(0x9D)	BLOCKED
UNDEFINED_CDB	(0x9E)	BLOCKED
UNDEFINED_CDB	(0x9F)	BLOCKED
REPORT_LUNS	(0xA0)	ALLOWED
ATA_PASSTHROUGH12	(0xA1)	BLOCKED
SEND EVENT	(0xA2)	BLOCKED
SEND KEY	(0xA3)	ALLOWED
REPORT KEY	(0xA4)	ALLOWED
MOVE MEDIUM	(0xA5)	ALLOWED
LOAD UNLOAD SLOT	(0xA6)	ALLOWED
SET_READ_AHEAD	(0xA7)	ALLOWED
READ12	(0xA8)	ALLOWED
UNDEFINED CDB	(0xA9)	BLOCKED
WRITE12	(OXAA)	BLOCKED
UNDEFINED CDB	(OxAB)	BLOCKED
ERASE12	(OXAC)	BLOCKED
READ DVD STRUCTURE	(OxAD)	ALLOWED
WRITE AND VERIFY12	(OXAE)	BLOCKED
VERIFY12	(OXAF)	ALLOWED
SEARCH DATA HIGH12	(0xB0)	ALLOWED
SEARCH_DATA_EQUAL12	(0xB1)	ALLOWED
SEARCH_DATA_LOW12	(0xB2)	ALLOWED
SET LIMITS12	(0xB2)	ALLOWED
READ_ELEMENT_STATUS_AT	, ,	ALLOWED
REQUEST_VOL_ELEMENT	(0xB5)	BLOCKED
SEND VOLUME TAG	(0xB6)	ALLOWED
READ_DEFECT_DATA12	(0xB7)	ALLOWED
READ_ELEMENT_STATUS	(0xB8)	ALLOWED
READ_CD_MSF12	(0xB9)	ALLOWED
SCAN12	(OxBA)	ALLOWED
SET_CDROM_SPEED12	(0xBB)	ALLOWED
PLAY CD12	(0xBC)	ALLOWED
MECHANISM STATUS	(0xBC)	ALLOWED
READ_CD12	(OXBE)	ALLOWED
SEND DVD STRUCTURE	(OxBE)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC0)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC1)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC2)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC2) (0xC3)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC4)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC4) (0xC5)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC6)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC7)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC8)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC9)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xCA)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xCB)	BLOCKED
VENDOR_SPECIFIC_CDB VENDOR_SPECIFIC_CDB	(OxCC)	BLOCKED
VENDOR_SPECIFIC_CDB	(OxCD)	BLOCKED
VENDOR_SPECIFIC_CDB	(OXCE)	BLOCKED
VENDOR_SPECIFIC_CDB	(OXCE)	BLOCKED
, <u></u> 0101010_000	(04201)	

VENDOR_SPECIFIC_CDB	(0xD0)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xD1)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xD2)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xD3)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xD4)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xD5)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xD6)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xD7)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xD8)		BLOCKED	
VENDOR SPECIFIC CDB	(0xD9)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xDA)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xDB)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xDC)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xDD)		BLOCKED	
VENDOR_SPECIFIC_CDB	(OXDE)		BLOCKED	
VENDOR_SPECIFIC_CDB	(OXDE)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xDF) (0xE0)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xE0) (0xE1)		BLOCKED	
VENDOR_SPECIFIC_CDB VENDOR_SPECIFIC_CDB	(OXE1) (OXE2)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xE2) (0xE3)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xE3) (0xE4)		BLOCKED	
VENDOR_STECTIC_CDB	(0xE4) (0xE5)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xE6)		BLOCKED	
VENDOR_SPECIFIC_CDB	(OXEO) (OXE7)		BLOCKED	
VENDOR_SPECIFIC_CDB	(OXE7) (OXE8)		BLOCKED	
VENDOR_SPECIFIC_CDB	(OXE8) (OXE9)		BLOCKED	
VENDOR_STECTIC_CDB	(OXES)		BLOCKED	
VENDOR_SPECIFIC_CDB	(OXEA)		BLOCKED	
VENDOR_SPECIFIC_CDB	(OXED)		BLOCKED	
VENDOR_SPECIFIC_CDB	(OXEC)		BLOCKED	
VENDOR_STECTIC_CDB	(OXED)		BLOCKED	
VENDOR_SPECIFIC_CDB	(OXEE)		BLOCKED	
	(OXEF) (OXFO)		BLOCKED	
VENDOR_SPECIFIC_CDB VENDOR_SPECIFIC_CDB	(0xr0) (0xF1)		BLOCKED	
VENDOR_SPECIFIC_CDB VENDOR_SPECIFIC_CDB	(0xF2) (0xF3)		BLOCKED BLOCKED	
VENDOR_SPECIFIC_CDB				
	(0xF4)		BLOCKED	
VENDOR_SPECIFIC_CDB VENDOR_SPECIFIC_CDB	(0xF5) (0xF6)		BLOCKED	
			BLOCKED	
VENDOR_SPECIFIC_CDB	(0xF7)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xF8)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xF9)		BLOCKED	
VENDOR_SPECIFIC_CDB	(OxFA)		BLOCKED	
VENDOR_SPECIFIC_CDB	(OxFB)		BLOCKED	
VENDOR_SPECIFIC_CDB	(OxFC)		BLOCKED	
VENDOR_SPECIFIC_CDB	(0xFD)		BLOCKED	
VENDOR_SPECIFIC_CDB	(OxFE)		BLOCKED	
VENDOR_SPECIFIC_CDB	(OxFF)		BLOCKED	
IRP_MJ_SHUTDOWN		(0x10)	ALLOWED	
IRP_MJ_LOCK_CONTROL		(0x11)	ALLOWED	
IRP_MJ_CLEANUP		(0x12)	ALLOWED	
IRP_MJ_CREATE_MAILSLOT		(0x13)	ALLOWED	
IRP_MJ_QUERY_SECURITY		(0x14)	ALLOWED	

Write CDB's Other CDB's Vendor SPecific CDB's Undefined CDB's	61		62 80
Testing device ¥¥.¥PhysicalDriv Device is software WRITE PROTEC IRP Function	CTED	Result	
IRP_MJ_CREATE IRP_MJ_CREATE_NAMED_PIPE IRP_MJ_CLOSE IRP_MJ_READ IRP_MJ_WRITE IRP_MJ_QUERY_INFORMATION IRP_MJ_SET_INFORMATION IRP_MJ_QUERY_EA IRP_MJ_SET_EA IRP_MJ_FLUSH_BUFFERS IRP_MJ_FLUSH_BUFFERS IRP_MJ_QUERY_VOLUME_INFORMATION IRP_MJ_SET_VOLUME_INFORMATION IRP_MJ_DIRECTORY_CONTROL	(0x00) (0x01) (0x02) (0x03) (0x04) (0x05) (0x06) (0x06) (0x07) (0x08) (0x09) DN (0x0A)	BLOCKED ALLOWED BLOCKED ALLOWED ALLOWED	
IRP_MJ_FILE_SYSTEM_CONTROL IRP_MJ_DEVICE_CONTROL IRP_MJ_SCSI	(0x0E) (0x0F)	ALLOWED	
IRP_MJ_DEVICE_CONTROL	(0x0F)	ALLOWED	

READ6(0x08)ALLOWEDVENDOR_SPECIFIC_CDB(0x09)BLOCKEDSEEK6(0x0B)ALLOWEDVENDOR_SPECIFIC_CDB(0x0C)BLOCKEDVENDOR_SPECIFIC_CDB(0x0D)BLOCKEDWENDOR_SPECIFIC_CDB(0x0F)BLOCKEDWRITE_FILEMARKS(0x10)BLOCKEDSPACE(0x11)BLOCKEDINQUIRY(0x12)ALLOWEDVERIFY6(0x13)ALLOWEDRESERVE_UNIT(0x16)ALLOWEDRESERVE_UNIT(0x17)ALLOWEDRESERVE_UNIT(0x17)ALLOWEDRESERVE_UNIT(0x17)ALLOWEDRESERVE_UNIT(0x18)BLOCKEDBADE_SENSE(0x19)BLOCKEDMODE_SENSE(0x10)ALLOWEDRECEIVE_DIAGNOSTIC(0x1C)ALLOWEDRECEIVE_DIAGNOSTIC(0x1C)ALLOWEDMDDF_SECIFIC_CDB(0x20)BLOCKEDUNDEFINED_CDE(0x21)BLOCKEDVENDOR_SPECIFIC_CDB(0x22)BLOCKEDVENDOR_SPECIFIC_CDB(0x22)BLOCKEDVENDOR_SPECIFIC_CDB(0x22)BLOCKEDVENDOR_SPECIFIC_CDB(0x22)BLOCKEDVENDOR_SPECIFIC_CDB(0x23)BLOCKEDVENDOR_SPECIFIC_CDB(0x24)ALLOWEDREAD_CAPACITY(0x25)ALLOWEDREAD10(0x28)ALLOWEDREAD10(0x28)ALLOWEDREAD10(0x28)ALLOWEDREAD10(0x20)BLOCKEDVENDOR_SPECIFIC_CDB(0x20)BLO
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READ_GENERATION(0x29)ALLOWEDWRITE10(0x2A)BLOCKEDSEEK10(0x2B)ALLOWEDERASE10(0x2C)BLOCKED
WRITE10(0x2A)BLOCKEDSEEK10(0x2B)ALLOWEDERASE10(0x2C)BLOCKED
SEEK10(0x2B)ALLOWEDERASE10(0x2C)BLOCKED
ERASE10 (0x2C) BLOCKED
WRITE_AND_VERIFY10 (0x2E) BLOCKED
VERIFY (0x2F) BLOCKED
SEARCH_DATA_HIGH (0x30) ALLOWED
SEARCH_DATA_EQUAL (0x31) ALLOWED
SEARCH_DATA_LOW (0x31) ALLOWED
SEARCH_DATA_LOW (0x32) ALLOWED SET_LIMITS (0x33) ALLOWED
LOCK_UNLOCK_CACHE $(0x36)$ ALLOWED
READ_DEFECT_DATA (0x37) ALLOWED
MEDIUM_SCAN (0x38) ALLOWED
$\begin{array}{c} \text{COMPARE} & (0x39) & \text{ALLOWED} \\ \text{CONV. COMPARE} & (0x2a) & \text{PLOCKED} \end{array}$
COPY_COMPARE (0x3A) BLOCKED
WRITE_DATA_BUFF (0x3B) BLOCKED
READ_DATA_BUFF (0x3C) ALLOWED
UNDEFINED_CDB (0x3D) BLOCKED

READ_LONG10	(0x3E)	ALLOWED
WRITE_LONG10	(0x3F)	BLOCKED
CHANGE_DEFINITION	(0x40)	ALLOWED
WRITE_SAME10	(0x41)	BLOCKED
READ_SUB_CHANNEL	(0x42)	ALLOWED
READ_TOC	(0x43)	ALLOWED
READ_HEADER	(0x44)	ALLOWED
PLAY_AUDIO	(0x45)	ALLOWED
GET_CONFIGURATION	(0x46)	ALLOWED
PLAY_AUDIO_MSF	(0x47)	ALLOWED
PLAY_TRACK_INDEX	(0x48)	ALLOWED
PLAY_TRACK_RELATIVE	(0x49)	ALLOWED
GET_EVENT_STATUS	(0x4A)	ALLOWED
PAUSE_RESUME	(0x4B)	ALLOWED
LOG_SELECT	(0x4C)	ALLOWED
LOG SENSE	(0x4D)	ALLOWED
STOP_PLAY_SCAN	(0x4E)	ALLOWED
UNDEFINED_CDB	$(0 \times 4F)$	BLOCKED
XDWRITE10	(0x50)	BLOCKED
XPWRITE10	(0x51)	BLOCKED
XDREAD10	(0x52)	ALLOWED
XDWRITucRead10	(0x53)	BLOCKED
SEND_OPC_INFORMATION	(0x54)	ALLOWED
MODE SELECT10	(0x55)	ALLOWED
RESERVE_UNIT10	(0x56)	ALLOWED
RELEASE_UNIT10	(0x57)	ALLOWED
	(0x58)	BLOCKED
UNDEFINED_CDB	(0x59)	BLOCKED
MODE SENSE10	(0x5A)	ALLOWED
CLOSE TRACK SESSION	(0x5B)	BLOCKED
 READ_BUFFER_CAPACITY	(0x5C)	ALLOWED
SEND CUE SHEET	(0x5D)	BLOCKED
PERSISTENT_RESERVE_IN	(0x5E)	ALLOWED
PERSISTENT RESERVE OUT		ALLOWED
UNDEFINED CDB	(0x60)	BLOCKED
UNDEFINED CDB	(0x61)	BLOCKED
UNDEFINED CDB	(0x62)	BLOCKED
UNDEFINED_CDB	(0x63)	BLOCKED
UNDEFINED_CDB	(0x64)	BLOCKED
UNDEFINED_CDB	(0x65)	BLOCKED
UNDEFINED_CDB	(0x66)	BLOCKED
UNDEFINED CDB	(0x67)	BLOCKED
UNDEFINED_CDB	(0x68)	BLOCKED
UNDEFINED_CDB	(0x69)	BLOCKED
UNDEFINED_CDB	(0x6A)	BLOCKED
UNDEFINED_CDB	(0x6B)	BLOCKED
UNDEFINED_CDB	(0x6C)	BLOCKED
UNDEFINED_CDB	(0x6D)	BLOCKED
UNDEFINED_CDB	(0x6E)	BLOCKED
UNDEFINED_CDB	(0x6F)	BLOCKED
UNDEFINED_CDB	(0x70)	BLOCKED
UNDEFINED_CDB	(0x71)	BLOCKED
UNDEFINED_CDB	(0x72)	BLOCKED
UNDEFINED_CDB	(0x73)	BLOCKED
	. ,	

UNDEFINED_CDB	(0x74)	BLOCKED
UNDEFINED_CDB	(0x75)	BLOCKED
UNDEFINED_CDB	(0x76)	BLOCKED
UNDEFINED_CDB	(0x77)	BLOCKED
UNDEFINED_CDB	(0x78)	BLOCKED
UNDEFINED_CDB	(0x79)	BLOCKED
UNDEFINED_CDB	(0x7A)	BLOCKED
UNDEFINED_CDB	(0x7B)	BLOCKED
UNDEFINED_CDB	(0x7C)	BLOCKED
UNDEFINED CDB	(0x7D)	BLOCKED
UNDEFINED CDB	(0x7E)	BLOCKED
UNDEFINED CDB	(0x7F)	BLOCKED
XDWRITE_EXTENDED	(0x80)	BLOCKED
REBUILD	(0x81)	BLOCKED
REGENERATE	(0x82)	BLOCKED
EXTENDED COPY	(0x83)	BLOCKED
RECEIVE_COPY_RESULTS	(0x84)	ALLOWED
ATA PASSTHROUGH16	(0x85)	BLOCKED
ACCESS_CONTROL_IN	(0x86)	ALLOWED
ACCESS CONTROL OUT	(0x87)	ALLOWED
READ16	(0x88)	ALLOWED
UNDEFINED CDB	(0x89)	BLOCKED
WRITE16	(0x8A)	BLOCKED
UNDEFINED CDB	(0x8B)	BLOCKED
READ ATTRIBUTE	(0x8C)	ALLOWED
WRITE ATTRIBUTE	(0x8D)	BLOCKED
WRITE_AND_VERIFY16	(0x8E)	BLOCKED
VERIFY16	(0x8F)	ALLOWED
PRE-FETCH16	(0x90)	ALLOWED
SYNCHRONIZE CACHE16	(0x91)	BLOCKED
LOCK-UNLOCK CACHE	(0x92)	ALLOWED
WRITE SAME16	(0x93)	BLOCKED
UNDEFINED_CDB	(0x94)	BLOCKED
UNDEFINED_CDB	(0x95)	BLOCKED
UNDEFINED CDB	(0x96)	BLOCKED
UNDEFINED CDB	(0x97)	BLOCKED
UNDEFINED_CDB	(0x97) (0x98)	BLOCKED
UNDEFINED_CDB	(0x98) (0x99)	BLOCKED
UNDEFINED_CDB	(0x99) (0x9A)	BLOCKED
UNDEFINED_CDB	(0x9A) (0x9B)	BLOCKED
UNDEFINED_CDB	(0x9b) (0x9C)	BLOCKED
UNDEFINED_CDB	(0x9C) (0x9D)	BLOCKED
UNDEFINED_CDB UNDEFINED_CDB	(0x9D) (0x9E)	BLOCKED
UNDEFINED CDB	(0x9E) (0x9F)	BLOCKED
REPORT LUNS	(0x9f) (0xA0)	ALLOWED
ATA_PASSTHROUGH12	(0xA0) (0xA1)	BLOCKED
SEND EVENT	(0xA1) (0xA2)	BLOCKED
—	(0xA2) (0xA3)	ALLOWED
SEND_KEY REPORT_KEY	(0xA3) (0xA4)	ALLOWED
—		
MOVE_MEDIUM	(0xA5) (0xA6)	ALLOWED
LOAD_UNLOAD_SLOT	(0xA6) (0x77)	ALLOWED
SET_READ_AHEAD	(0xA7)	ALLOWED
READ12	(0xA8) (0xA9)	ALLOWED
UNDEFINED_CDB	(UXAJ)	BLOCKED

WRITE12	(OxAA)	BLOCKED
UNDEFINED_CDB	(OxAB)	BLOCKED
ERASE12	(OxAC)	BLOCKED
READ_DVD_STRUCTURE	(OxAD)	ALLOWED
WRITE_AND_VERIFY12	(OxAE)	BLOCKED
VERIFY12	(OxAF)	ALLOWED
SEARCH_DATA_HIGH12	(0xB0)	ALLOWED
SEARCH_DATA_EQUAL12	(0xB1)	ALLOWED
SEARCH_DATA_LOW12	(0xB2)	ALLOWED
SET_LIMITS12	(0xB3)	ALLOWED
READ_ELEMENT_STATUS_AT	(0xB4)	ALLOWED
REQUEST_VOL_ELEMENT	(0xB5)	BLOCKED
SEND_VOLUME_TAG	(0xB6)	ALLOWED
READ_DEFECT_DATA12	(0xB7)	ALLOWED
READ_ELEMENT_STATUS	(0xB8)	ALLOWED
READ_CD_MSF12	(0xB9)	ALLOWED
SCAN12	(OxBA)	ALLOWED
SET_CDROM_SPEED12	(OxBB)	ALLOWED
PLAY_CD12	(OxBC)	ALLOWED
MECHANISM_STATUS	(OxBD)	ALLOWED
READ_CD12	(OxBE)	ALLOWED
SEND_DVD_STRUCTURE	(OxBF)	ALLOWED
VENDOR_SPECIFIC_CDB	(0xC0)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC1)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC2)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC3)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC4)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC5)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC6)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC7)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC8)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xC9)	BLOCKED
VENDOR_SPECIFIC_CDB	(OxCA)	BLOCKED
VENDOR_SPECIFIC_CDB	(OxCB)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xCC)	BLOCKED
VENDOR_SPECIFIC_CDB	(OxCD)	BLOCKED
VENDOR_SPECIFIC_CDB	(OxCE)	BLOCKED
VENDOR_SPECIFIC_CDB	(OxCF)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xD0)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xD1)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xD2)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xD3)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xD4)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xD5)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xD6)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xD7)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xD8)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xD9)	BLOCKED
VENDOR_SPECIFIC_CDB	(OxDA)	BLOCKED
VENDOR_SPECIFIC_CDB	(OxDB)	BLOCKED
VENDOR_SPECIFIC_CDB	(0xDC)	BLOCKED
VENDOR_SPECIFIC_CDB	(OxDD)	BLOCKED
VENDOR_SPECIFIC_CDB	(OxDE)	BLOCKED
VENDOR_SPECIFIC_CDB	(OxDF)	BLOCKED

Other IRP's	••••	15	0	15	
Write IRP's			8	8	
Read IRP's			0	4	
Test Category				Total	
***** TEST	RESULI	S SUMMARY	* * * * * * * * * * * *	* * * * * * *	
IRP_MJ_PNP		(0x1B)	ALLOWED		
IRP_MJ_SET_QUOTA			BLOCKED		
IRP_MJ_QUERY_QUOTA			ALLOWED		
IRP_MJ_DEVICE_CHANGE			ALLOWED		
IRP_MJ_SYSTEM_CONTROL			ALLOWED		
IRP_MJ_POWER			ALLOWED		
IRP_MJ_SET_SECURITY			BLOCKED		
IRP_MJ_QUERY_SECURITY		(0x14)			
IRP_MJ_CREATE_MAILSLOT		(0x13)	ALLOWED		
IRP_MJ_CLEANUP		(0x12)	ALLOWED		
IRP_MJ_LOCK_CONTROL		(0x11)			
IRP_MJ_SHUTDOWN		(0x10)			
VENDOR_SPECIFIC_CDB	(OXFF)		BLOCKED		
VENDOR_SPECIFIC_CDB	(OXFE)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xFD)		BLOCKED		
VENDOR_SPECIFIC_CDB	(OXFD)		BLOCKED		
VENDOR_SPECIFIC_CDB	(OxFB)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xFA)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xF0) (0xF9)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xF8)		BLOCKED		
VENDOR SPECIFIC CDB	(0xF7)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xF5) (0xF6)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xF4) (0xF5)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xF3) (0xF4)		BLOCKED		
VENDOR_SPECIFIC_CDB VENDOR_SPECIFIC_CDB	(0xF2) (0xF3)		BLOCKED		
VENDOR_SPECIFIC_CDB VENDOR_SPECIFIC_CDB	(0xF1) (0xF2)		BLOCKED BLOCKED		
VENDOR_SPECIFIC_CDB VENDOR SPECIFIC CDB	(0xF0)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xEF)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xEE)		BLOCKED		
VENDOR_SPECIFIC_CDB	(OxED)		BLOCKED		
VENDOR_SPECIFIC_CDB	(OxEC)		BLOCKED		
VENDOR_SPECIFIC_CDB	(OxEB)		BLOCKED		
VENDOR_SPECIFIC_CDB	. ,				
VENDOR_SPECIFIC_CDB	(0xE9) (0xEA)		BLOCKED BLOCKED		
VENDOR_SPECIFIC_CDB	(0xE8)		BLOCKED		
VENDOR_SPECIFIC_CDB	$(0 \times E7)$		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xE6)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xE5)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xE4)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xE3)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xE2)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xE1)		BLOCKED		
VENDOR_SPECIFIC_CDB	(0xE0)		BLOCKED		

Read CDB's	27	0	27	
Write CDB's	0	34	34	
Other CDB's	61	1	62	
Vendor SPecific CDB's	0	80	80	
Undefined CDB's	0	53	53	

Appendix B - SAFE Block Policy Settings

SAFE Block Win7 V1.0 uses policies to control write-blocking behavior for newly detected disks as well as disks that persist after rebooting the machine. For the purposes of all tests conducted, SAFE Block Win7 V1.0 was set to block all disks by default and to not remember the write-block status of disks. This means that all disks, except the system disk, would be blocked on re-boot or insertion.



SAFE Block Win7 1.0 also has an advanced setting which will cause it to allow uncommonly used vendor specific SCSI commands to pass through to a disk in case the blocking of these commands causes a SCSI disk to malfunction. For the purposes of all tests, this feature was turned off, which is the SAFE Block Win7 V1.0 default setting.

Policy Password Advanced About	Advanced Options
	OK Cancel

Appendix C - Software modifications made

In order to allow the NIST Software Write Blocker Test Suite V1.2 [1] to run on Windows 7[®], minor modifications to both the NIST Test Suite and SAFE Block Win7 V1.0 [2] needed to be made. These changes in no way affected the operation of either application or the validity of the test. Please contact document authors to obtain the modified software.

NIST Software Write Blocker Test Suite V1.2

The source code for the application "devctl.exe" needed to modified in order to allow the application to compile for use in Windows 7[®]. These modifications did not affect the drivers *pitcher* or *catcher* used in the test suite as detailed in [3] in any way, and were made solely to the Microsoft Windows[®] 7 DDK [6] header files for syntactical compliance with Windows 7[®]. In order to allow devctl.exe to compile, the following files had some lines redacted: winbase.h, windef.h, windows.h, and winnt.h.

SAFE Block Win7 V1.0

SAFE Block Win7 V1.0 contains a routine that will ensure that no other filter drivers can be installed belowSAFE Block in the driver stack to any storage device. This is a safety feature to ensure no other applicationscan be installed that will allow a disk to be modified. Due to the installation requirements of the NIST TestSuite [3], this feature had to be disabled for testing. Affected file: InstDrv.dll.

References

[1] National Institute of Standards, *NIST Software Write Blocker Test Suite V1.2;*

http://www.cftt.nist.gov/ACES-test-support.zip

[2] ForensicSoft Inc, SAFE Block Win7 V1.0; http://www.forensicsoft.com

[3] National Institute of Standards, ACES Software Write Block Tool Test Report: Writeblocker Windows 7

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bin/exit_nist.cgi?url=http://www.ojp.usdoj.gov/nij/pubs-sum/220222.htm

[4] AccessData Inc, FTK Imager2.9.0; http://www.accessdata.com

[5] busTRACE, *Filter Driver Load Order v1.0.009*;

http://www.bustrace.com/products/devfilter.htm

[6] Microsoft Inc, WDK and Developer Tools;

http://www.microsoft.com/whdc/Devtools/wdk/default.mspx

[7]Guidance Software Inc, Encase® Forensic v6;

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