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REPORT

Test Results for Software Write Block Tools:
PDBLOCK Version 1.02 (PDB_LITE)

**U.S. Department of Justice
Office of Justice Programs**

810 Seventh Street N.W.
Washington, DC 20531

Alberto R. Gonzales
Attorney General

Tracy A. Henke
Acting Assistant Attorney General

Sarah V. Hart
Director, National Institute of Justice

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Tools: PDBLOCK Version 1.02 (PDB_LITE)**



Sarah V. Hart

Director

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Introduction

The Computer Forensics Tool Testing (CFTT) program is a joint project of the National Institute of Justice, which is the research, development, and evaluation agency of the U.S. Department of Justice (DOJ), and the National Institute of Standards and Technology's (NIST's) Office of Law Enforcement Standards and Information Technology Laboratory. CFTT is supported by other organizations, including the Federal Bureau of Investigation (DOJ), the Cyber Crime Center (U.S. Department of Defense), the Internal Revenue Service Criminal Investigation's Electronic Crimes Program (U.S. Department of the Treasury), and U.S. Immigration and Customs Enforcement and the U.S. Secret Service (U.S. Department of Homeland Security). CFTT's objective is to provide measurable assurance to practitioners, researchers, and other applicable users that the tools used in computer forensics investigations provide accurate results. Accomplishing this requires the development of specifications and test methods for computer forensics tools and subsequent testing of specific tools against those specifications.

Test results provide the information necessary for developers to improve tools, users to make informed choices, and the legal community and others to understand the tools' capabilities. The approach for testing computer forensic tools is based on well-recognized methodologies for conformance and quality testing. The specifications and test methods are posted on the [CFTT Web site \(http://www.cftt.nist.gov\)](http://www.cftt.nist.gov) for both comment and review by the computer forensics community.

This document reports the results from testing PDBLOCK Version 1.02 (PDB_LITE) against [Software Write Block Tool Specification & Test Plan Version 3.0](http://www.cftt.nist.gov/documents/SWB-STP-V3_1a.pdf), available on CFTT's Web site (http://www.cftt.nist.gov/documents/SWB-STP-V3_1a.pdf). This specification identifies the following top-level tool requirements:

- The tool shall not allow a protected drive to be changed.
- The tool shall not prevent obtaining any information from or about any drive.
- The tool shall not prevent any operations to a drive that is not protected.

Test Results for Software Write Block Tools

Tool Tested: PDBLOCK VERSION 1.02 (PDB_LITE) © 1999
DIGITAL INTELLIGENCE, INC.

Operating System: MS-DOS® (Windows® 98 DOS)¹ Version 4.10.2222

Supplier: Digital Intelligence, Inc.
1325 Pearl Street
Waukesha, WI 53186
262-524-9363
<http://www.digitalintelligence.com>

1.0 Results Summary by Requirements

The tool shall not allow a protected drive to be changed.

For all test cases run, the tool always blocked all write commands sent to a protected drive. For some test cases run, the tool did not block all commands that could change protected drives.

The tool shall not prevent obtaining any information from or about any drive.

For all test cases run, the tool always allowed commands to obtain information from any protected drives.

The tool shall not prevent any operations to a drive that is not protected.

For all test cases run, the tool always allowed any command to access any unprotected drives.

2.0 Anomalies

The tool blocked all commands from the write category sent to a protected drive. However, the tool did not block some commands from the configuration and miscellaneous categories that are either undefined (invalid) or outmoded and not routinely used by current software. These commands in current BIOS implementations do not write to a hard drive, but in the future they could be defined such that they would change the contents or accessibility of a protected drive. In the test specification, these commands are therefore included in categories that should be blocked.

¹ MS-DOS and Windows are registered trademarks of Microsoft Corporation.

The tool did not block five commands in the configuration category: Initialize Drive Parameters (0x09), PS/2 ESDI Diagnostic (0x0E), PC/XT Controller Ram Diagnostic (0x12), the controller drive diagnostic command (0x13), and Controller Internal Diagnostic (0x14). These commands are rarely used, if at all. Additionally, two commands in the miscellaneous category were not blocked (command codes 0x1A and 0x22).

Test cases: SWB-04 and SWB-06.

Although PDBLOCK Version 1.02 always protects drives from write commands, it does not report the accessible drives. Therefore it does not meet the SWB-RM-04 requirement from *Software Write Block Tool Specification & Test Plan Version 3.0*: The tool shall report all drives accessible by the covered interfaces.

Test cases: All.

3.0 Test Case Selection

Test cases were selected from *Software Write Block Tool Specification & Test Plan Version 3.0*. Because PDBLOCK Version 1.02 does not implement all optional features described in the specification, only 8 of the 40 test cases defined in the specification were used. Test cases SWB-13 through SWB-36 (testing ability of a tool to specify a subset of drives for protection) were not used because PDBLOCK Version 1.02 always protects all drives and does not have the capability to select a subset of drives for protection. Of the remaining test cases, those that specify an alternate return value of *fail* rather than the default value of *success* were not used (SWB-01, SWB-03, SWB-05, SWB-07, SWB-09, SWB-11, SWB-37, and SWB-39) because PDBLOCK Version 1.02 does not allow specification of an alternate return value.

So that there would be test cases to verify disabling the tool and executing the tool from the AUTOEXEC.BAT file, a minor modification to the test parameters was made to cases SWB-38 and SWB-40. These two cases assume that a subset of drives can be selected for protection, but because PDBLOCK Version 1.02 does not allow selection of a subset for protection, both cases were run with all drives protected.

4.0 Test Results by Assertion

This section presents the test results grouped by assertion. The assertions were taken from *Software Write Block Tool Specification & Test Plan Version 3.0*.

4.1 Mandatory Assertions

SWB-AM-01. If a drive is protected and a command from the write category is issued for the protected drive, then the tool shall block the command.

Each command in the write category was sent to all protected drives. PDBLOCK Version 1.02 blocked every command sent from the write category to a protected drive.

Test case: SWB-02.

SWB-AM-02. If a drive is protected and a command from the configuration category is issued for the protected drive, then the tool shall block the command.

Each command in the configuration category was sent to all protected drives. Except for five commands, PDBLOCK Version 1.02 blocked every command sent from the configuration category to a protected drive. The commands not blocked by the tool were the Initialize Drive Parameters (0x09), PS/2 ESDI Diagnostic (0x0E), PC/XT Controller Ram Diagnostic (0x12), the controller drive diagnostic command (0x13), and Controller Internal Diagnostic (0x14).

Test case: SWB-04.

SWB-AM-03. If a drive is protected and a command from the miscellaneous category is issued for the protected drive, then the tool shall block the command.

Each command in the miscellaneous category was sent to all protected drives. PDBLOCK Version 1.02 only blocked two of the commands sent from the miscellaneous category to a protected drive. Command codes 0x1A and 0x22 were blocked; all other command codes were allowed. [Table 4-1](#) contains an extract of the relevant information from the SWB-06 test case log file.

Table 4-1 Extract from Test Case SWB-06 Test Log

Case	Cmd	Drv	Action	Stat	Cry	Count	Cmd Name
3	SWB-06	<19>	80	Allowed	0000	Off	1 Undefined
4	SWB-06	<1A>	80	Blocked	0000	Off	0 Undefined
5	SWB-06	<1B>	80	Allowed	0000	Off	1 Undefined
11	SWB-06	<21>	80	Allowed	0000	Off	1 Undefined
12	SWB-06	<22>	80	Blocked	0000	Off	0 Undefined
13	SWB-06	<23>	80	Allowed	0000	Off	1 Undefined

Test case: SWB-06.

SWB-AM-04. If a drive is protected and a command from the read category is issued for the protected drive, then the tool shall not block the command.

Each command in the read category was sent to all protected drives. PDBLOCK Version 1.02 never blocked any command sent from the read category to a protected drive.

SWB-AM-05. If a drive is protected and a command from the control category is issued for the protected drive, then the tool shall not block the command.

Each command in the control category was sent to all protected drives. PDBLOCK Version 1.02 never blocked any commands sent from the control category.

SWB-AM-06. If a drive is protected and a command from the information category is issued for the protected drive, then the tool shall not block the command.

Each command in the information category was sent to all protected drives. PDBLOCK Version 1.02 never blocked any command sent from the information category to a protected drive.

SWB-AM-07. If the tool is executed, then the tool shall issue a message indicating that the tool is active.

PDBLOCK Version 1.02 always issued the message **PDBLOCK: Fixed Disk Write Protection ENABLED** to indicate that the tool was active.

SWB-AM-08. If the tool is executed, then the tool shall issue a message indicating all drives accessible by the covered interfaces.

PDBLOCK Version 1.02 does not identify the accessible drives with a message.

Test cases: All.

SWB-AM-09. If the tool is executed, then the tool shall issue a message indicating the protection status of each drive attached to a covered interface.

Because PDBLOCK Version 1.02 always issues the message **PDBLOCK: Fixed Disk Write Protection ENABLED** and because PDBLOCK Version 1.02 always protects all accessible drives, this message is sufficient to indicate the protection status of each drive.

SWB-AM-10. If the tool is configured to return *success* on blocked commands and the tool blocks a command, then the return code shall indicate successful command execution.

PDBLOCK Version 1.02 has no option to configure the return and should return *success* on all blocked commands. For all test cases, PDBLOCK Version 1.02 returned *success* for all blocked commands.

SWB-AM-11. If the tool is configured to return *fail* on blocked commands and the tool blocks a command, then the return code shall indicate unsuccessful command execution.

Because PDBLOCK Version 1.02 cannot be configured to return *fail* on blocked commands, this assertion does not apply.

4.2 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.

Because PDBLOCK Version 1.02 cannot be configured to select a subset of drives for protection, this assertion does not apply.

SWB-AO-02. If a subset of all covered drives is specified for protection, then commands from the configuration category shall be blocked for drives in the selected subset.

Because PDBLOCK Version 1.02 cannot be configured to select a subset of drives for protection, this assertion does not apply.

SWB-AO-03. If a subset of all covered drives is specified for protection, then commands from the miscellaneous category shall be blocked for drives in the selected subset.

Because PDBLOCK Version 1.02 cannot be configured to select a subset of drives for protection, this assertion does not apply.

SWB-AO-04. If a subset of all covered drives is specified for protection, then commands from the read category shall not be blocked for drives in the selected subset.

Because PDBLOCK Version 1.02 cannot be configured to select a subset of drives for protection, this assertion does not apply.

SWB-AO-05. If a subset of all covered drives is specified for protection, then commands from the control category shall not be blocked for drives in the selected subset.

Because PDBLOCK Version 1.02 cannot be configured to select a subset of drives for protection, this assertion does not apply.

SWB-AO-06. If a subset of all covered drives is specified for protection, then commands from the information category shall not be blocked for drives in the selected subset.

Because PDBLOCK Version 1.02 cannot be configured to select a subset of drives for protection, this assertion does not apply.

SWB-AO-07. If a subset of all covered drives is specified for protection, then no commands from any category shall be blocked for drives not in the selected subset.

Because PDBLOCK Version 1.02 cannot be configured to select a subset of drives for protection, this assertion does not apply.

SWB-AO-08. If the tool is active during the operating system boot and shutdown processes, then no changes are made to any protected drives.

The system was booted with the test harness and PDBLOCK Version 1.02 and started from the AUTOEXEC.BAT file. Each command in the write category was sent to every protected drive to show that the tool was active. Finally, the system was shutdown. A SHA1² hash value was then computed and compared with a SHA1 hash value computed before the test for each drive used in the test to ensure that nothing was written to the disks after the harness was no longer active. The

² The Secure Hash Algorithm (SHA1), developed by NIST and the National Security Agency for use with the Digital Signature Standard, is specified in *Secure Hash Standard* (FIPS Publication 180) (National Institute of Standards and Technology, May 1993).

SHA1 hash values computed after the test were the same as the values computed before the test, indicating that no changes to the drives occurred during the test.

SWB-AO-09. If the tool is active and the tool is then deactivated, then no commands to any drive shall be blocked.

When the tool was activated and then deactivated and commands in all categories were sent to each protected drive, PDBLOCK Version 1.02 never blocked any commands sent.

SWB-AO-10. If the tool blocks a command, then the tool shall issue either an audio or a visual signal.

PDBLOCK Version 1.02 always indicated a blocked command with an audible signal.

5.0 Testing Environment

The tests were run in the NIST CFTT lab. This section describes the hardware (test computers and hard drives) available for testing. Not all components were used in testing. The following host computers were used for execution of test cases: HecRamsey, McCloud, McMillan, AndWife, Cadfael, Rumpole, Wimsey, and JudgeDee. Eight hard drives (eight different models and four different brands) were used for the tests ([Table 5–3](#)).

5.1 Test Computers

Four host computers—Cadfael, Rumpole, Wimsey, and JudgeDee—have the following hardware components in common:

Table 5–1 Extended BIOS Host Computer Hardware Components

ASUS CUSL2 Motherboard
BIOS: Award Medallion v6.0
Intel Pentium III (Coppermine) 933Mhz
512672k Memory
Adaptec 29160N SCSI Adapter card
Plextor CR–RW PX–W124TS Rev: 1.06
Iomega 2GB Jaz drive Rev: E.17
LS–120 Super floppy
Two slots for removable IDE hard disk drives
Two slots for removable SCSI hard disk drive

Rumpole also has a 30GB OnStream SC30 tape drive (not used in the test procedures). JudgeDee has a third slot for a removable IDE hard disk drive.

The computers HecRamsey, McCloud, McMillan, and AndWife have the following hardware components in common:

Table 5–2 Alternate Extended BIOS Host Computer Hardware Components

Intel D845WNL Motherboard
BIOS: HV84510A.86A.0022.P05
Intel Pentium IV 2.0Ghz
512672k Memory
Adaptec 29160 SCSI Adapter card
Tekram DC–390U3W SCSI Adapter card
Plextor CR–RW PX–W124TS Rev: 1.06
LG 52X CD–ROM
Floppy drive
Three slots for removable IDE hard disk drives
Two slots for removable SCSI hard disk drive

5.2 Hard Disk Drives

The hard disk drives that were used are listed in [Table 5–3](#). These hard drives were mounted in removable storage modules. Any combination of up to three IDE hard drives and two SCSI hard drives can be installed in HecRamsey, McCloud, McMillan, AndWife, Cadfael, Rumpole, Wimsey, or JudgeDee as required for a test. The IDE disks used had jumpers set for *cable select*. The SCSI ID for the SCSI disks was set to either *0* or *1* as required by the test case.

The **Label** column is an external identification for the hard drive. The **Model** column is the model identification string obtained from the drive. The **Interface** column identifies the type of interface used to connect the drive to the computer. The **Usable Sectors** column documents the size of the drive in sectors. The **GB** column gives the size of the drive in gigabytes.

Table 5–3 Hard Drives Used in Testing

Label	Model	Interface	Usable Sectors	GB
1F	QUANTUM_ATLAS10K3_18_SCA	SCSI	35916547	18.38
2B	QUANTUM_QM39100TD-SCA	SCSI	17783248	9.10
64	WDCWD64AA	IDE	12594960	6.44
6F	Maxtor_6Y060L0	IDE	120103200	61.49
8A	WDC_WD200EB-00CSF0	IDE	39102336	20.02
90	WDC_WD300BB-00CAA0	IDE	58633344	30.02
E4	QUANTUM_ATLAS10K2-TY092J	SCSI	17938985	9.18
F6	IBM-DTLA-307020	IDE	40188960	20.57

The drives were set up in a variety of ways with the common partition types (FAT16, FAT32, FAT32X, NTFS, and Linux ext2) represented. The setup of each drive is documented in [Table 5–4](#). The **Drive Label** column is an external identification for the hard drive. The **Partition Table** column describes the partition table for the drive. Under **Partition Table**, the **N** subcolumn is a sequence number. The unlabeled subcolumn identifies a primary partition (P), primary extended partition (X), secondary partition within an extended partition (S), or extended partition within an extended partition (x). The **Start LBA** subcolumn is the starting logical block address (LBA) of the partition. The **Length** subcolumn is the length of the partition in sectors. The **boot** subcolumn indicates the boot partition. The **Partition type** subcolumn contains the two-digit hexadecimal partition type code and the name of the partition type for common partition types.

Table 5–4 Drive Partition Setup

Drive Label	Partition Table					
1F	N	Start	LBA	Length	boot	Partition type
	1	P	000000063	001236942	Boot	0B Fat32
	2	X	001429785	033865020		0F extended
	3	S	000000063	000208782		83 Linux
	4	x	000208845	000144585		05 extended
	5	S	000000063	000144522		0B Fat32
	6	x	000771120	000192780		05 extended
	7	S	000000063	000192717		16 other
	8	S	000000000	000000000		00 empty entry
9	P	035294805	000064260		83 Linux	
2B	No partition table					
64	No partition table					
6F	No partition table					
8A	No partition table					
90	No partition table					
E4	N	Start	LBA	Length	boot	Partition type
	1	P	000000063	006152832	Boot	0B Fat32
	2	X	008193150	009735390		0F extended
	3	S	000000000	000000000		00 empty entry
	4	x	002056320	001237005		05 extended
	5	S	000000063	001236942		07 NTFS
	6	x	005349645	001638630		05 extended
	7	S	000000063	001638567		17 other
	8	x	008498385	001237005		05 extended
9	S	000000063	001236942		1B other	
F6	N	Start	LBA	Length	boot	Partition type
	1	P	000000063	006152832	Boot	0B Fat32
	2	X	008193150	031985415		0F extended
	3	S	000000000	000000000		00 empty entry
	4	x	002056320	001237005		05 extended
	5	S	000000063	001236942		07 NTFS
	6	x	005349645	001638630		05 extended
	7	S	000000063	001638567		17 other
	8	x	030748410	001237005		05 extended
9	S	000000063	001236942		1B other	

After the drives were created, a SHA1 hash value was computed for the entire drive (Table 5–5). After testing was finished, a SHA1 hash value was computed again (Table 5–6). The lack of change in the SHA1 hash values indicates that no changes were made to the drives during testing.

Table 5–5 Drive SHA1 Values Before Testing

Drive	SHA1 Hash Value
1F	7DB8B538BC38907FC22B1CA79996D97F77421418
2B	2A7810E851B7392C3D4836A5DFFB5E73E8295C6F
64	8F52C49579C70407FE6D0EDCBE3FD7C42972823A
6F	7C2F5F4FB0D04E5F1B51D0888753A1B125A503EA
8A	891444D852E0C48C4713952B3BDAD89E03C205FD
90	08B4905B4D012401656248C39C904F6072476293
E4	25BF8AF6B2D3E0BD1909C96E368DB27F51C49CBF
F6	8034683D5D55BA51409AC7B5CB0845CA2CF6B235

Table 5–6 Drive SHA1 Values After Testing

Drive	SHA1 Hash Value
1F	7DB8B538BC38907FC22B1CA79996D97F77421418
2B	2A7810E851B7392C3D4836A5DFFB5E73E8295C6F
64	8F52C49579C70407FE6D0EDCBE3FD7C42972823A
6F	7C2F5F4FB0D04E5F1B51D0888753A1B125A503EA
8A	891444D852E0C48C4713952B3BDAD89E03C205FD
90	08B4905B4D012401656248C39C904F6072476293
E4	25BF8AF6B2D3E0BD1909C96E368DB27F51C49CBF
F6	8034683D5D55BA51409AC7B5CB0845CA2CF6B235

5.3 Support Software

Software Write Block Test Harness (SWBT) Release 1.0 was developed to support the testing of interrupt 0x13-based software write block tools. The program DISKWIPE from the FS–TST Release 1.0 package was used in the drive setup procedure. Both FS–TST Release 1.0 and SWBT Release 1.0 can be obtained from the [CFTT Web site \(http://www.cftt.nist.gov/\)](http://www.cftt.nist.gov/). The support software has components to monitor interrupt 0x13 activity (TALLY13.COM) and to issue each of the 256 possible interrupt 0x13 commands (TEST–HDL.EXE). The TEST–HDL program was written in ANSI C and compiled with the Borland C++ compiler Version 4.5. The TALLY13 program was written in assembler language and compiled with Borland Turbo Assembler Version 5.0.

The programs listed in [Table 5–7](#) are required for testing.

Table 5–7 Software Required for Testing

Program	Description
SWB Tool	The software write block tool to be tested.
TALLY13	The interrupt 0x13 monitor program. The monitor program blocks all interrupt 0x13 command functions, counts the number of times each function is requested for each drive, and provides an interface for retrieving the count of the number of times each command function was requested for each drive.
TEST–HDL	The test harness issues (requests) all interrupt 0x13 command functions for a specified command category, queries the monitor program to determine if the function was blocked or allowed, and logs the results to a file.
T–OFF	Deactivate TALLY13.
SIG–LOG	Log operator’s observations of an audible or visual signal indicating blocked commands.

5.4 Run Protocol Selection

Most test cases followed the same test procedures; two, however, required a different run protocol. The details of the run protocols can be found in *Software Write Block Tool Specification & Test Plan Version 3.0*. Three protocols were used to test PDBLOCK Version 1.02 **typical**, **boot**, and **uninstall**.

The **boot** protocol was used to run test case 37, the **uninstall** protocol was used to run test case 39, and the **typical** protocol was used to run the remaining test cases.

6.0 Interpretation of Test Results

The main item of interest for interpreting the test results is determining the tool's conformance to the test assertions. This section lists each test assertion and identifies the information in the log files relevant to conformance. Conformance of each assertion tested by a given test case is evaluated by examining the Commands Executed and Log File Highlights boxes of the test report summary. The Log File Highlights box contains extracts from each of the log files generated for a test case.

6.1 Test Assertion Verification

This section describes where to find the information needed to verify each test assertion in the test case report.

SWB-AM-01. If a drive is protected and a command from the write category is issued for the protected drive, then the tool shall block the command.

Because all drives are protected whenever the tool is enabled, no explicit identification of the protected drives is present. The Test Harness Log section of the Log File Highlights box lists each command sent to each drive. If the action column contains *Blocked* for each command sent to a protected drive, the test case conforms to the assertion.

SWB-AM-02. If a drive is protected and a command from the configuration category is issued for the protected drive, then the tool shall block the command.

Because all drives are protected whenever the tool is enabled, no explicit identification of the protected drives is present. The Test Harness Log section of the Log File Highlights box lists each command sent to each drive. If the action column contains *Blocked* for each command sent to a protected drive, the test case conforms to the assertion.

SWB-AM-03. If a drive is protected and a command from the miscellaneous category is issued for the protected drive, then the tool shall block the command.

Because all drives are protected whenever the tool is enabled, no explicit identification of the protected drives is present. The Test Harness Log section of the Log File Highlights box lists each command sent to each drive. If the action column contains *Blocked* for each command sent to a protected drive, the test case conforms to the assertion.

SWB-AM-04. If a drive is protected and a command from the read category is issued for the protected drive, then the tool shall not block the command.

Because all drives are protected whenever the tool is enabled, no explicit identification of the protected drives is present. The Test Harness Log section of the Log File Highlights box lists each command sent to each drive. If the action column contains *Allowed* for each command sent to a protected drive, the test case conforms to the assertion.

SWB-AM-05. If a drive is protected and a command from the control category is issued for the protected drive, then the tool shall not block the command.

Because all drives are protected whenever the tool is enabled, no explicit identification of the protected drives is present. The Test Harness Log section of the Log File Highlights box lists each command sent to each drive. If the action column contains *Allowed* for each command sent to a protected drive, the test case conforms to the assertion.

SWB-AM-06. If a drive is protected and a command from the information category is issued for the protected drive, then the tool shall not block the command.

Because all drives are protected whenever the tool is enabled, no explicit identification of the protected drives is present. The Test Harness Log section of the Log File Highlights box lists each command sent to each drive. If the action column contains *Allowed* for each command sent to a protected drive, the test case conforms to the assertion.

SWB-AM-07. If the tool is executed, then the tool shall issue a message indicating that the tool is active.

If the Install PDBLOCK Log contains the text **PDBLOCK: Fixed Disk Write Protection ENABLED**, then the test case conforms to the test assertion.

SWB-AM-08. If the tool is executed, then the tool shall issue a message indicating all drives accessible by the covered interfaces.

PDBLOCK Version 1.02 does not conform to this test assertion because it does not issue a message indicating all accessible drives.

SWB-AM-09. If the tool is executed, then the tool shall issue a message indicating the protection status of each drive attached to a covered interface.

Because PDBLOCK Version 1.02 always protects all accessible drives, if the Install PDBLOCK Log contains the text **PDBLOCK: Fixed Disk Write Protection ENABLED**, then the test case conforms to the test assertion.

SWB-AM-10. If the tool is configured to return *success* on blocked commands and the tool blocks a command, then the return code shall indicate successful command execution.

PDBLOCK Version 1.02 has no option to configure the return and should return *success* on all blocked commands. To conform with this assertion, for all test cases, PDBLOCK Version 1.02 must return *success* for all blocked commands. The return value of blocked commands is *success* if in the Test Harness Log the value of the Stat column is *0000* and the value of the Cry column is *off*.

SWB-AM-11. If the tool is configured to return *fail* on blocked commands and the tool blocks a command, then the return code shall indicate unsuccessful command execution.

Because PDBLOCK Version 1.02 cannot be configured to return *fail* on blocked commands, this assertion does not apply.

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.

Because PDBLOCK Version 1.02 cannot be configured to select a subset of drives for protection, this assertion does not apply.

SWB-AO-02. If a subset of all covered drives is specified for protection, then commands from the configuration category shall be blocked for drives in the selected subset.

Because PDBLOCK Version 1.02 cannot be configured to select a subset of drives for protection, this assertion does not apply.

SWB-AO-03. If a subset of all covered drives is specified for protection, then commands from the miscellaneous category shall be blocked for drives in the selected subset.

Because PDBLOCK Version 1.02 cannot be configured to select a subset of drives for protection, this assertion does not apply.

SWB-AO-04. If a subset of all covered drives is specified for protection, then commands from the read category shall not be blocked for drives in the selected subset.

Because PDBLOCK Version 1.02 cannot be configured to select a subset of drives for protection, this assertion does not apply.

SWB-AO-05. If a subset of all covered drives is specified for protection, then commands from the control category shall not be blocked for drives in the selected subset.

Because PDBLOCK Version 1.02 cannot be configured to select a subset of drives for protection, this assertion does not apply.

SWB-AO-06. If a subset of all covered drives is specified for protection, then commands from the information category shall not be blocked for drives in the selected subset.

Because PDBLOCK Version 1.02 cannot be configured to select a subset of drives for protection, this assertion does not apply.

SWB-AO-07. If a subset of all covered drives is specified for protection, then no commands from any category shall be blocked for drives not in the selected subset.

Because PDBLOCK Version 1.02 cannot be configured to select a subset of drives for protection, this assertion does not apply.

SWB-AO-08. If the tool is active during the operating system boot and shutdown processes, then no changes are made to any protected drives.

Because all drives are protected whenever the tool is enabled, no explicit identification of the protected drives is present. Two conditions are necessary to show conformance to this assertion. First, all commands sent must be blocked. Second, the drives may not be changed during the system boot and shutdown process. The Test Harness Log lists each command sent to each drive. If the action column contains *Blocked* for each command sent to a protected drive, the first condition is met. The second condition is evaluated by comparing a SHA1 computed before the test run with a SHA1 computed after the test run. If both values match, the second condition is met. The SHA1 values are presented in Tables [5-5](#) and [5-6](#).

SWB-AO-09. If the tool is active and the tool is then deactivated, then no commands to any drive shall be blocked.

This assertion requires a special test protocol. First, the tool is activated and some write commands are blocked. Then, the tool is deactivated and each command is sent. There are two log files for the tool and two log files for the test harness.

A warning message appears in the second instance of the Test Harness Log File. This is normal for test cases SWB-39 and SWB-40. The warning message notes that write commands were allowed to unprotected drives while the tool was active during the first part of the test (before the tool was deactivated).

SWB-AO-10. If the tool blocks a command, then the tool shall issue either an audio or a visual signal.

The signal log in the Log File Highlights box records the test operator's observations of either an audible or visual signal by the tool being tested to indicate a blocked command. If any commands are blocked, a value of y indicates that a signal was observed and that the tool conforms to the assertion.

6.2 Test Results Summary Key

A summary of the actual test results is presented in this report (see 7.0 Test Results Summaries). The following table presents a description of each section of the test report summary.

Table 6-1 Description of Test Report Summary

Heading	Description
First Line	Test case ID and the name and version of the software tested.
Case Summary	Test case summary from <i>Software Write Block Tool Specification & Test Plan Version 3.0</i> .
Assertions Tested	Assertions tested by the test case from <i>Software Write Block Tool Specification & Test Plan Version 3.0</i> .
Tester Name	Name or initials of the person executing the test procedure.
Test Date	Time and date that the test was started.

Heading	Description
Test PC	Name of the computer used to execute the tool.
Test Software	Name and version of the test software.
Hard Drives Used	Description of the hard drives used in the test.
Commands Executed	Documentation of each command executed during the test.
Log File Highlights	<p data-bbox="511 352 1291 569">Selected entries from the test case log files. Four log files may appear. The log file created for TALLY13 is labeled <i>Monitor Execution</i>. The log file created for PDBLOCK Version 1.02 is labeled <i>Install PDBLOCK Log</i>. The log file created by TEST-HDL is labeled <i>Test Harness Log</i>. The log file created by SIG-LOG is labeled <i>Signal Log</i>.</p> <p data-bbox="511 611 1291 747">For test cases SWB-39 and SWB-40, there are two separate logs for PDBLOCK Version 1.02 and also for TEST-HDL because these cases require execution of PDBLOCK Version 1.02 twice.</p> <p data-bbox="511 789 1274 858">The monitor execution log file records the program version and the date that the TALLY13 program was executed.</p> <p data-bbox="511 900 1274 1037">The PDBLOCK log file is obtained by output redirection of the execution of PDBLOCK Version 1.02. The log file contains the version of PDBLOCK used, the number of drives identified, and the protection status of each drive.</p> <p data-bbox="511 1079 1291 1218">The test harness log is the record of commands sent to PDBLOCK Version 1.02 and the action taken by PDBLOCK to either block or allow each command sent. The format of the file is as follows:</p> <ol data-bbox="511 1260 1291 1808" style="list-style-type: none"> 1. Command line. The command line used to execute TEST-HDL. This line begins with the string CMD. 2. Case number. 3. Interrupt 0x13 functions. The category of interrupt 0x13 functions tested by this case. 4. Date. 5. Version. Version information about TEST-HDL and components. The creation date, creation time, and version of each source code component are listed. The compile time and date for the executable program are listed. 6. Operator. The operator running the test. 7. Host. The host computer running the test. 8. Drives. The number of drives and the external drive label for each drive. <p data-bbox="511 1850 1177 1885">Items 9 and 10 are repeated for each installed drive.</p>

Heading	Description
	<p>9. List of commands sent. Each line of the list has nine columns: sequence number, test case number, command code in hex (Cmd), drive number in hex (Drv), action taken by PDBLOCK Version 1.02 (either <i>Blocked</i> or <i>Allowed</i>), return status (<i>0000</i> means success, <i>0300</i> means fail), carry flag value (labeled Cry with values of either <i>on</i> indicating failure status or <i>off</i> indicating success status), count of the number of times the command was allowed by PDBLOCK Version 1.02, and the command name (or undefined for commands in the miscellaneous category).</p> <p>10. Summary of commands for the drive. The message indicates the number of commands blocked out of the number of commands sent.</p> <p>11. The last item is a summary of all the commands sent to all drives, the number of commands sent, the number blocked, and the number allowed (not blocked).</p> <p>The signal log records the test operator's observations of either an audible or visual signal by the tool being tested to indicate a blocked command. A value of <i>y</i> indicates that the operator observed a signal. A value of <i>n</i> indicates that no signal was observed.</p>
Results	Expected and actual results for each assertion tested.
Analysis	Whether or not the expected results were achieved.

7.0 Test Results Summaries

Case SWB-02 PDBlock Version 1.02	
Case summary:	SWB-02 Install two drives, configure return code to success, protect all drives, execute write commands.
Assertions Tested:	<p>SWB-AM-01. If a drive is protected and a command from the write category is issued for the protected drive then the tool shall block the command.</p> <p>SWB-AM-07. If the tool is executed then the tool shall issue a message indicating that the tool is active.</p> <p>SWB-AM-08. If the tool is executed then the tool shall issue a message indicating all drives accessible by the covered interfaces.</p> <p>SWB-AM-09. If the tool is executed then the tool shall issue a message indicating the protection status of each drive attached to a covered interface.</p> <p>SWB-AM-10. If the tool is configured to return success on blocked commands and the tool blocks a command then the return code shall indicate successful command execution.</p> <p>SWB-AO-10. If the tool blocks a command then the tool shall issue either an audio or a visual signal.</p>
Tester Name:	JRL
Test Date:	Sat Jan 24 16:33:03 2004
Test PC:	McCloud
Test Software:	SWBT 1.0
Hard Drives Used:	Drive 80, label F6 is an IBM-DTLA-307020 with 40188960 sectors Drive 81, label 2B is a Quantum QM39100TD-SCA Drive with 17783249 sectors
Commands executed:	<p>Boot Test PC to (DOS 7.1) Windows 98 [Version 4.10.2222]</p> <p>tally13</p> <p>A:\pdb_lite</p> <p>test-hdl SWB-02 McCloud JRL w F6 2B</p> <p>Shutdown Test PC</p>
Log File Highlights:	<pre> ***** Monitor Execution ***** Monitor BIOS interrupt 13h (disk service) tally13 compiled on 07/29/03 at 07:33:17 @(#) Version 1.1 Created 07/29/03 at 07:28:05 Now (01/24/04 at 16:31:32) Going . . . TSR ***** Install PDB Log ***** * PDBlock Version 1.02: (P)hysical (D)isk Write (BLOCK)er * PDBLOCK: Fixed Disk Write Protection ENABLED ***** Test Harness Log ***** CMD: A:\TEST-HDL.EXE SWB-02 McCloud JRL w F6 2B Case: SWB-02 Command set: Write Date: Sat Jan 24 16:33:03 2004 Version: @(#) test-hdl.cpp Version 1.1 Created 08/23/03 at 10:13:51 @(#) wb-defs.h Version 1.2 Created 08/31/03 at 08:18:19 Compiled on Aug 31 2003 at 08:10:54 Operator: JRL Host: McCloud Number of drives 2, Drives: F6 2B Case Cmd Drv Action Stat Cry Count Cmd Name 0 SWB-02 <03> 80 Blocked 0000 Off 0 WriteSectors 1 SWB-02 <0B> 80 Blocked 0000 Off 0 WriteLong 2 SWB-02 <43> 80 Blocked 0000 Off 0 ExtWrite Results for SWB-02 category w on drive 80 All commands blocked (3 of 3) 0 SWB-02 <03> 81 Blocked 0000 Off 0 WriteSectors 1 SWB-02 <0B> 81 Blocked 0000 Off 0 WriteLong 2 SWB-02 <43> 81 Blocked 0000 Off 0 ExtWrite Results for SWB-02 category w on drive 81 All commands blocked (3 of 3) Summary: 6 sent, 6 blocked, 0 not blocked ***** Signal Log ***** SIGNAL: y </pre>

Case SWB-02 PDBlock Version 1.02			
Results:	Assertion	Expected Results	Actual Results
	AM-01	All cmds to drive 80 blocked	All cmds to drive 80 blocked
	AM-01	All cmds to drive 81 blocked	All cmds to drive 81 blocked
	AM-07	Tool active message	Tool active message
	AM-08	2 drives identified	No drives identified
	AM-09	Drive 80 is protected	Drive 80 is protected
	AM-09	Drive 81 is protected	Drive 81 is protected
	AM-10	6 Commands return success	6 Commands return success
	AO-10	Signal observed	Signal observed
Analysis:	SWB-02 Expected results not achieved for assertions: AM-08		

Case SWB-04 PDBlock Version 1.02	
Case summary:	SWB-04 Install all drives, configure return code to success, protect all drives, execute configuration commands.
Assertions Tested:	<p>SWB-AM-02. If a drive is protected and a command from the configuration category is issued for the protected drive then the tool shall block the command.</p> <p>SWB-AM-07. If the tool is executed then the tool shall issue a message indicating that the tool is active.</p> <p>SWB-AM-08. If the tool is executed then the tool shall issue a message indicating all drives accessible by the covered interfaces.</p> <p>SWB-AM-09. If the tool is executed then the tool shall issue a message indicating the protection status of each drive attached to a covered interface.</p> <p>SWB-AM-10. If the tool is configured to return success on blocked commands and the tool blocks a command then the return code shall indicate successful command execution.</p> <p>SWB-AO-10. If the tool blocks a command then the tool shall issue either an audio or a visual signal.</p>
Tester Name:	JRL
Test Date:	Sat Jan 24 15:27:49 2004
Test PC:	McMillan
Test Software:	SWBT 1.0
Hard Drives Used:	<p>Drive 80, label 8A is a WDC WD200EB-00CSF0 with 39102336 sectors</p> <p>Drive 81, label F6 is an IBM-DTLA-307020 with 40188960 sectors</p> <p>Drive 82, label 6F is a Maxtor 6Y060L0 with 120103200 sectors</p> <p>Drive 83, label 1F is a Quantum ATLAS10K3_18_SCA Drive with 35916548 sectors</p> <p>Drive 84, label 2B is a Quantum QM39100TD-SCA Drive with 17783249 sectors</p>
Commands executed:	<pre> Boot Test PC to (DOS 7.1) Windows 98 [Version 4.10.2222] tally13 A:\pdb_lite test-hdl SWB-04 McMillan JRL x 8A F6 6F 1F 2B Shutdown Test PC </pre>
Log File Highlights:	<pre> ***** Monitor Execution ***** Monitor BIOS interrupt 13h (disk service) tally13 compiled on 07/29/03 at 07:33:17 @(#) Version 1.1 Created 07/29/03 at 07:28:05 Now (01/24/04 at 15:25:03) Going . . . TSR ***** Install PDB Log ***** * PDBlock Version 1.02: (P)hysical (D)isk Write (BLOCK)er * PDBLOCK: Fixed Disk Write Protection ENABLED ***** Test Harness Log ***** CMD: A:\TEST-HDL.EXE SWB-04 McMillan JRL x 8A F6 6F 1F 2B Case: SWB-04 Command set: Configure Date: Sat Jan 24 15:27:49 2004 Version: @(#) test-hdl.cpp Version 1.1 Created 08/23/03 at 10:13:51 @(#) wb-defs.h Version 1.2 Created 08/31/03 at 08:18:19 Compiled on Aug 31 2003 at 08:10:54 Operator: JRL Host: McMillan Number of drives 5, Drives: 8A F6 6F 1F 2B Case Cmd Drv Action Stat Cry Count Cmd Name 0 SWB-04 <05> 80 Blocked 0000 Off 0 FormatTrack 1 SWB-04 <06> 80 Blocked 0000 Off 0 FormatBadSectors </pre>

Case SWB-04 PDBlock Version 1.02			
	2	SWB-04 <07> 80	Blocked 0000 Off 0 FormatCyl
	3	SWB-04 <09> 80	Allowed 0000 Off 1 InitDriveParms
	4	SWB-04 <0E> 80	Allowed 0000 Off 1 DiagnosticESDI
	5	SWB-04 <0F> 80	Blocked 0000 Off 0 DiagnosticESDI
	6	SWB-04 <12> 80	Allowed 0000 Off 1 DiagnosticRAM
	7	SWB-04 <13> 80	Allowed 0000 Off 1 DiagnosticDrive
	8	SWB-04 <14> 80	Allowed 0000 Off 1 DiagnosticCTL
		Results for SWB-04 category x on drive 80	Not all commands blocked (4 of 9)
	0	SWB-04 <05> 81	Blocked 0000 Off 0 FormatTrack
	1	SWB-04 <06> 81	Blocked 0000 Off 0 FormatBadSectors
	2	SWB-04 <07> 81	Blocked 0000 Off 0 FormatCyl
	3	SWB-04 <09> 81	Allowed 0000 Off 1 InitDriveParms
	4	SWB-04 <0E> 81	Allowed 0000 Off 1 DiagnosticESDI
	5	SWB-04 <0F> 81	Blocked 0000 Off 0 DiagnosticESDI
	6	SWB-04 <12> 81	Allowed 0000 Off 1 DiagnosticRAM
	7	SWB-04 <13> 81	Allowed 0000 Off 1 DiagnosticDrive
	8	SWB-04 <14> 81	Allowed 0000 Off 1 DiagnosticCTL
		Results for SWB-04 category x on drive 81	Not all commands blocked (4 of 9)
	0	SWB-04 <05> 82	Blocked 0000 Off 0 FormatTrack
	1	SWB-04 <06> 82	Blocked 0000 Off 0 FormatBadSectors
	2	SWB-04 <07> 82	Blocked 0000 Off 0 FormatCyl
	3	SWB-04 <09> 82	Allowed 0000 Off 1 InitDriveParms
	4	SWB-04 <0E> 82	Allowed 0000 Off 1 DiagnosticESDI
	5	SWB-04 <0F> 82	Blocked 0000 Off 0 DiagnosticESDI
	6	SWB-04 <12> 82	Allowed 0000 Off 1 DiagnosticRAM
	7	SWB-04 <13> 82	Allowed 0000 Off 1 DiagnosticDrive
	8	SWB-04 <14> 82	Allowed 0000 Off 1 DiagnosticCTL
		Results for SWB-04 category x on drive 82	Not all commands blocked (4 of 9)
	0	SWB-04 <05> 83	Blocked 0000 Off 0 FormatTrack
	1	SWB-04 <06> 83	Blocked 0000 Off 0 FormatBadSectors
	2	SWB-04 <07> 83	Blocked 0000 Off 0 FormatCyl
	3	SWB-04 <09> 83	Allowed 0000 Off 1 InitDriveParms
	4	SWB-04 <0E> 83	Allowed 0000 Off 1 DiagnosticESDI
	5	SWB-04 <0F> 83	Blocked 0000 Off 0 DiagnosticESDI
	6	SWB-04 <12> 83	Allowed 0000 Off 1 DiagnosticRAM
	7	SWB-04 <13> 83	Allowed 0000 Off 1 DiagnosticDrive
	8	SWB-04 <14> 83	Allowed 0000 Off 1 DiagnosticCTL
		Results for SWB-04 category x on drive 83	Not all commands blocked (4 of 9)
	0	SWB-04 <05> 84	Blocked 0000 Off 0 FormatTrack
	1	SWB-04 <06> 84	Blocked 0000 Off 0 FormatBadSectors
	2	SWB-04 <07> 84	Blocked 0000 Off 0 FormatCyl
	3	SWB-04 <09> 84	Allowed 0000 Off 1 InitDriveParms
	4	SWB-04 <0E> 84	Allowed 0000 Off 1 DiagnosticESDI
	5	SWB-04 <0F> 84	Blocked 0000 Off 0 DiagnosticESDI
	6	SWB-04 <12> 84	Allowed 0000 Off 1 DiagnosticRAM
	7	SWB-04 <13> 84	Allowed 0000 Off 1 DiagnosticDrive
	8	SWB-04 <14> 84	Allowed 0000 Off 1 DiagnosticCTL
		Results for SWB-04 category x on drive 84	Not all commands blocked (4 of 9)
		Summary: 45 sent, 20 blocked, 25 not blocked	
		***** Signal Log *****	
		SIGNAL: y	
Results:	Assertion	Expected Results	Actual Results
	AM-02	All cmds to drive 80 blocked	Not all cmds to drive 80 blocked
	AM-02	All cmds to drive 81 blocked	Not all cmds to drive 81 blocked
	AM-02	All cmds to drive 82 blocked	Not all cmds to drive 82 blocked
	AM-02	All cmds to drive 83 blocked	Not all cmds to drive 83 blocked
	AM-02	All cmds to drive 84 blocked	Not all cmds to drive 84 blocked
	AM-07	Tool active message	Tool active message

Case SWB-04 PDBlock Version 1.02	
	<pre> AM-08 5 drives identified No drives identified AM-09 Drive 80 is protected Drive 80 is protected AM-09 Drive 81 is protected Drive 81 is protected AM-09 Drive 82 is protected Drive 82 is protected AM-09 Drive 83 is protected Drive 83 is protected AM-09 Drive 84 is protected Drive 84 is protected AM-10 20 Commands return success 20 Commands return success AO-10 Signal observed Signal observed </pre>
Analysis:	SWB-04 Expected results not achieved for assertions: AM-02 AM-08

Case SWB-06 PDBlock Version 1.02	
Case summary:	SWB-06 Install one drive, configure return code to success, protect all drives, execute miscellaneous commands.
Assertions Tested:	<pre> SWB-AM-03. If a drive is protected and a command from the miscellaneous category is issued for the protected drive then the tool shall block the command. SWB-AM-07. If the tool is executed then the tool shall issue a message indicating that the tool is active. SWB-AM-08. If the tool is executed then the tool shall issue a message indicating all drives accessible by the covered interfaces. SWB-AM-09. If the tool is executed then the tool shall issue a message indicating the protection status of each drive attached to a covered interface. SWB-AM-10. If the tool is configured to return success on blocked commands and the tool blocks a command then the return code shall indicate successful command execution. SWB-AO-10. If the tool blocks a command then the tool shall issue either an audio or a visual signal. </pre>
Tester Name:	JRL
Test Date:	Sat Jan 24 16:12:29 2004
Test PC:	Wimsey
Test Software:	SWBT 1.0
Hard Drives Used:	Drive 80, label 1F is a Quantum ATLAS10K3_18_SCA Drive with 35916548 sectors
Commands executed:	<pre> Boot Test PC to (DOS 7.1) Windows 98 [Version 4.10.2222] tally13 A:\pdb_lite test-hdl SWB-06 Wimsey JRL m 1F Shutdown Test PC </pre>
Log File Highlights:	<pre> ***** Monitor Execution ***** Monitor BIOS interrupt 13h (disk service) tally13 compiled on 07/29/03 at 07:33:17 @(#) Version 1.1 Created 07/29/03 at 07:28:05 Now (01/24/04 at 16:11:07) Going . . . TSR ***** Install PDB Log ***** * PDBlock Version 1.02: (P)hysical (D)isk Write (BLOCK)er * PDBLOCK: Fixed Disk Write Protection ENABLED ***** Test Harness Log ***** CMD: A:\TEST-HDL.EXE SWB-06 Wimsey JRL m 1F Case: SWB-06 Command set: Misc Date: Sat Jan 24 16:12:29 2004 Version: @(#) test-hdl.cpp Version 1.1 Created 08/23/03 at 10:13:51 @(#) wb-defs.h Version 1.2 Created 08/31/03 at 08:18:19 Compiled on Aug 31 2003 at 08:10:54 Operator: JRL Host: Wimsey Number of drives 1, Drives: 1F Case Cmd Drv Action Stat Cry Count Cmd Name 0 SWB-06 <16> 80 Allowed 0000 Off 1 Undefined ... misc commands 17-FD results omitted see log files for full results ... </pre>

Case SWB-06 PDBlock Version 1.02			
	226 SWB-06 <FE> 80 Allowed 0000 Off 1 Undefined 227 SWB-06 <FF> 80 Allowed 0000 Off 1 Undefined Results for SWB-06 category m on drive 80 Not all commands blocked (2 of 228) Summary: 228 sent, 2 blocked, 226 not blocked ***** Signal Log ***** SIGNAL: y		
Results:	Assertion	Expected Results	Actual Results
	AM-03	All cmds to drive 80 blocked	Not all cmds to drive 80 blocked
	AM-07	Tool active message	Tool active message
	AM-08	1 drives identified	No drives identified
	AM-09	Drive 80 is protected	Drive 80 is protected
	AM-10	2 Commands return success	2 Commands return success
	AO-10	Signal observed	Signal observed
Analysis:	SWB-06 Expected results not achieved for assertions: AM-03 AM-08		

Case SWB-08 PDBlock Version 1.02	
Case summary:	SWB-08 Install two drives, configure return code to success, protect all drives, execute read commands.
Assertions Tested:	SWB-AM-04. If a drive is protected and a command from the read category is issued for the protected drive then the tool shall not block the command. SWB-AM-07. If the tool is executed then the tool shall issue a message indicating that the tool is active. SWB-AM-08. If the tool is executed then the tool shall issue a message indicating all drives accessible by the covered interfaces. SWB-AM-09. If the tool is executed then the tool shall issue a message indicating the protection status of each drive attached to a covered interface. SWB-AM-10. If the tool is configured to return success on blocked commands and the tool blocks a command then the return code shall indicate successful command execution. SWB-AO-10. If the tool blocks a command then the tool shall issue either an audio or a visual signal.
Tester Name:	JRL
Test Date:	Sat Jan 24 16:36:58 2004
Test PC:	McCloud
Test Software:	SWBT 1.0
Hard Drives Used:	Drive 80, label F6 is an IBM-DTLA-307020 with 40188960 sectors Drive 81, label 2B is a Quantum QM39100TD-SCA Drive with 17783249 sectors
Commands executed:	Boot Test PC to (DOS 7.1) Windows 98 [Version 4.10.2222] tally13 A:\pdb_lite test-hdl SWB-08 McCloud JRL r F6 2B Shutdown Test PC
Log File Highlights:	***** Monitor Execution ***** Monitor BIOS interrupt 13h (disk service) tally13 compiled on 07/29/03 at 07:33:17 @(#) Version 1.1 Created 07/29/03 at 07:28:05 Now (01/24/04 at 16:35:30) Going . . . TSR ***** Install PDB Log ***** * PDBlock Version 1.02: (P)hysical (D)isk Write (BLOCK)er * PDBLOCK: Fixed Disk Write Protection ENABLED ***** Test Harness Log ***** CMD: A:\TEST-HDL.EXE SWB-08 McCloud JRL r F6 2B Case: SWB-08 Command set: Read Date: Sat Jan 24 16:36:58 2004 Version: @(#) test-hdl.cpp Version 1.1 Created 08/23/03 at 10:13:51 @(#) wb-defs.h Version 1.2 Created 08/31/03 at 08:18:19 Compiled on Aug 31 2003 at 08:10:54 Operator: JRL

Case SWB-08 PDBlock Version 1.02																																																																	
	Host: McCloud Number of drives 2, Drives: F6 2B <table border="1"> <thead> <tr> <th>Case</th> <th>Cmd</th> <th>Drv</th> <th>Action</th> <th>Stat</th> <th>Cry</th> <th>Count</th> <th>Cmd Name</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>SWB-08</td> <td><02></td> <td>80</td> <td>Allowed</td> <td>0000</td> <td>Off</td> <td>1 ReadSectors</td> </tr> <tr> <td>1</td> <td>SWB-08</td> <td><0A></td> <td>80</td> <td>Allowed</td> <td>0000</td> <td>Off</td> <td>1 ReadLong</td> </tr> <tr> <td>2</td> <td>SWB-08</td> <td><42></td> <td>80</td> <td>Allowed</td> <td>0000</td> <td>Off</td> <td>1 ExtRead</td> </tr> </tbody> </table> Results for SWB-08 category r on drive 80 No commands blocked (0 of 3) <table border="1"> <thead> <tr> <th>Case</th> <th>Cmd</th> <th>Drv</th> <th>Action</th> <th>Stat</th> <th>Cry</th> <th>Count</th> <th>Cmd Name</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>SWB-08</td> <td><02></td> <td>81</td> <td>Allowed</td> <td>0000</td> <td>Off</td> <td>1 ReadSectors</td> </tr> <tr> <td>1</td> <td>SWB-08</td> <td><0A></td> <td>81</td> <td>Allowed</td> <td>0000</td> <td>Off</td> <td>1 ReadLong</td> </tr> <tr> <td>2</td> <td>SWB-08</td> <td><42></td> <td>81</td> <td>Allowed</td> <td>0000</td> <td>Off</td> <td>1 ExtRead</td> </tr> </tbody> </table> Results for SWB-08 category r on drive 81 No commands blocked (0 of 3) Summary: 6 sent, 0 blocked, 6 not blocked ***** Signal Log ***** SIGNAL: n	Case	Cmd	Drv	Action	Stat	Cry	Count	Cmd Name	0	SWB-08	<02>	80	Allowed	0000	Off	1 ReadSectors	1	SWB-08	<0A>	80	Allowed	0000	Off	1 ReadLong	2	SWB-08	<42>	80	Allowed	0000	Off	1 ExtRead	Case	Cmd	Drv	Action	Stat	Cry	Count	Cmd Name	0	SWB-08	<02>	81	Allowed	0000	Off	1 ReadSectors	1	SWB-08	<0A>	81	Allowed	0000	Off	1 ReadLong	2	SWB-08	<42>	81	Allowed	0000	Off	1 ExtRead
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1	SWB-08	<0A>	81	Allowed	0000	Off	1 ReadLong																																																										
2	SWB-08	<42>	81	Allowed	0000	Off	1 ExtRead																																																										
Results:	<table border="1"> <thead> <tr> <th>Assertion</th> <th>Expected Results</th> <th>Actual Results</th> </tr> </thead> <tbody> <tr> <td>AM-04</td> <td>No cmds to drive 80 blocked</td> <td>No cmds to drive 80 blocked</td> </tr> <tr> <td>AM-04</td> <td>No cmds to drive 81 blocked</td> <td>No cmds to drive 81 blocked</td> </tr> <tr> <td>AM-07</td> <td>Tool active message</td> <td>Tool active message</td> </tr> <tr> <td>AM-08</td> <td>2 drives identified</td> <td>No drives identified</td> </tr> <tr> <td>AM-09</td> <td>Drive 80 is protected</td> <td>Drive 80 is protected</td> </tr> <tr> <td>AM-09</td> <td>Drive 81 is protected</td> <td>Drive 81 is protected</td> </tr> <tr> <td>AM-10</td> <td>0 Commands return success</td> <td>0 Commands return success</td> </tr> <tr> <td>AO-10</td> <td>No signal observed</td> <td>No signal observed</td> </tr> </tbody> </table>	Assertion	Expected Results	Actual Results	AM-04	No cmds to drive 80 blocked	No cmds to drive 80 blocked	AM-04	No cmds to drive 81 blocked	No cmds to drive 81 blocked	AM-07	Tool active message	Tool active message	AM-08	2 drives identified	No drives identified	AM-09	Drive 80 is protected	Drive 80 is protected	AM-09	Drive 81 is protected	Drive 81 is protected	AM-10	0 Commands return success	0 Commands return success	AO-10	No signal observed	No signal observed																																					
Assertion	Expected Results	Actual Results																																																															
AM-04	No cmds to drive 80 blocked	No cmds to drive 80 blocked																																																															
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AM-07	Tool active message	Tool active message																																																															
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AM-10	0 Commands return success	0 Commands return success																																																															
AO-10	No signal observed	No signal observed																																																															
Analysis:	SWB-08 Expected results not achieved for assertions: AM-08																																																																

Case SWB-10 PDBlock Version 1.02	
Case summary:	SWB-10 Install all drives, configure return code to success, protect all drives, execute information commands.
Assertions Tested:	SWB-AM-06. If a drive is protected and a command from the information category is issued for the protected drive then the tool shall not block the command. SWB-AM-07. If the tool is executed then the tool shall issue a message indicating that the tool is active. SWB-AM-08. If the tool is executed then the tool shall issue a message indicating all drives accessible by the covered interfaces. SWB-AM-09. If the tool is executed then the tool shall issue a message indicating the protection status of each drive attached to a covered interface. SWB-AM-10. If the tool is configured to return success on blocked commands and the tool blocks a command then the return code shall indicate successful command execution. SWB-AO-10. If the tool blocks a command then the tool shall issue either an audio or a visual signal.
Tester Name:	JRL
Test Date:	Sat Jan 24 17:01:56 2004
Test PC:	Cadfael
Test Software:	SWBT 1.0
Hard Drives Used:	Drive 80, label F6 is an IBM-DTLA-307020 with 40188960 sectors Drive 81, label 6F is a Maxtor 6Y060L0 with 120103200 sectors Drive 82, label 2B is a Quantum QM39100TD-SCA Drive with 17783249 sectors Drive 83, label 1F is a Quantum ATLAS10K3_18_SCA Drive with 35916548 sectors
Commands executed:	Boot Test PC to (DOS 7.1) Windows 98 [Version 4.10.2222] tally13 A:\pdb_lite test-hdl SWB-10 Cadfael JRL i F6 6F 2B 1F Shutdown Test PC
Log File Highlights:	***** Monitor Execution ***** Monitor BIOS interrupt 13h (disk service) tally13 compiled on 07/29/03 at 07:33:17 @(#) Version 1.1 Created 07/29/03 at 07:28:05 Now (01/24/04 at 17:00:16) Going . . . TSR ***** Install PDB Log ***** * PDBlock Version 1.02: (P)hysical (D)isk Write (BLOCK)er * PDBLOCK: Fixed Disk Write Protection ENABLED

Case SWB-10 PDBlock Version 1.02

```

***** Test Harness Log *****
CMD: A:\TEST-HDL.EXE SWB-10 Cadfael JRL i F6 6F 2B 1F
Case: SWB-10
Command set: Information
Date: Sat Jan 24 17:01:56 2004

Version: @(#) test-hdl.cpp Version 1.1 Created 08/23/03 at 10:13:51
         @(#) wb-defs.h Version 1.2 Created 08/31/03 at 08:18:19
         Compiled on Aug 31 2003 at 08:10:54

Operator: JRL
Host: Cadfael
Number of drives 4, Drives: F6 6F 2B 1F
  Case  Cmd  Drv  Action  Stat  Cry  Count  Cmd Name
  0 SWB-10 <01> 80 Allowed 0000 Off    1  GetLastStatus
  1 SWB-10 <04> 80 Allowed 0000 Off    1  VerifySectors
  2 SWB-10 <08> 80 Allowed 0000 Off    1  ReadDriveParms
  3 SWB-10 <10> 80 Allowed 0000 Off    1  TestDriveReady
  4 SWB-10 <15> 80 Allowed 0000 Off    1  ReadDriveType
  5 SWB-10 <41> 80 Allowed 0000 Off    1  CheckForExtensions
  6 SWB-10 <44> 80 Allowed 0000 Off    1  VerifySectors
  7 SWB-10 <48> 80 Allowed 0000 Off    1  GetDriveParms
Results for SWB-10 category i on drive 80 No commands blocked (0 of 8)
  0 SWB-10 <01> 81 Allowed 0000 Off    1  GetLastStatus
  1 SWB-10 <04> 81 Allowed 0000 Off    1  VerifySectors
  2 SWB-10 <08> 81 Allowed 0000 Off    1  ReadDriveParms
  3 SWB-10 <10> 81 Allowed 0000 Off    1  TestDriveReady
  4 SWB-10 <15> 81 Allowed 0000 Off    1  ReadDriveType
  5 SWB-10 <41> 81 Allowed 0000 Off    1  CheckForExtensions
  6 SWB-10 <44> 81 Allowed 0000 Off    1  VerifySectors
  7 SWB-10 <48> 81 Allowed 0000 Off    1  GetDriveParms
Results for SWB-10 category i on drive 81 No commands blocked (0 of 8)
  0 SWB-10 <01> 82 Allowed 0000 Off    1  GetLastStatus
  1 SWB-10 <04> 82 Allowed 0000 Off    1  VerifySectors
  2 SWB-10 <08> 82 Allowed 0000 Off    1  ReadDriveParms
  3 SWB-10 <10> 82 Allowed 0000 Off    1  TestDriveReady
  4 SWB-10 <15> 82 Allowed 0000 Off    1  ReadDriveType
  5 SWB-10 <41> 82 Allowed 0000 Off    1  CheckForExtensions
  6 SWB-10 <44> 82 Allowed 0000 Off    1  VerifySectors
  7 SWB-10 <48> 82 Allowed 0000 Off    1  GetDriveParms
Results for SWB-10 category i on drive 82 No commands blocked (0 of 8)
  0 SWB-10 <01> 83 Allowed 0000 Off    1  GetLastStatus
  1 SWB-10 <04> 83 Allowed 0000 Off    1  VerifySectors
  2 SWB-10 <08> 83 Allowed 0000 Off    1  ReadDriveParms
  3 SWB-10 <10> 83 Allowed 0000 Off    1  TestDriveReady
  4 SWB-10 <15> 83 Allowed 0000 Off    1  ReadDriveType
  5 SWB-10 <41> 83 Allowed 0000 Off    1  CheckForExtensions
  6 SWB-10 <44> 83 Allowed 0000 Off    1  VerifySectors
  7 SWB-10 <48> 83 Allowed 0000 Off    1  GetDriveParms
Results for SWB-10 category i on drive 83 No commands blocked (0 of 8)
Summary: 32 sent, 0 blocked, 32 not blocked

***** Signal Log *****
SIGNAL: n

```

Results:	Assertion	Expected Results	Actual Results
	AM-06	No cmds to drive 80 blocked	No cmds to drive 80 blocked
	AM-06	No cmds to drive 81 blocked	No cmds to drive 81 blocked
	AM-06	No cmds to drive 82 blocked	No cmds to drive 82 blocked
	AM-06	No cmds to drive 83 blocked	No cmds to drive 83 blocked
	AM-07	Tool active message	Tool active message
	AM-08	4 drives identified	No drives identified
	AM-09	Drive 80 is protected	Drive 80 is protected
	AM-09	Drive 81 is protected	Drive 81 is protected
	AM-09	Drive 82 is protected	Drive 82 is protected
	AM-09	Drive 83 is protected	Drive 83 is protected
	AM-10	0 Commands return success	0 Commands return success
	AO-10	No signal observed	No signal observed
Analysis:	SWB-10 Expected results not achieved for assertions: AM-08		

Case SWB-12 PDBlock Version 1.02																						
Case summary:	SWB-12 Install one drive, configure return code to success, protect all drives, execute control commands.																					
Assertions Tested:	<p>SWB-AM-05. If a drive is protected and a command from the control category is issued for the protected drive then the tool shall not block the command.</p> <p>SWB-AM-07. If the tool is executed then the tool shall issue a message indicating that the tool is active.</p> <p>SWB-AM-08. If the tool is executed then the tool shall issue a message indicating all drives accessible by the covered interfaces.</p> <p>SWB-AM-09. If the tool is executed then the tool shall issue a message indicating the protection status of each drive attached to a covered interface.</p> <p>SWB-AM-10. If the tool is configured to return success on blocked commands and the tool blocks a command then the return code shall indicate successful command execution.</p> <p>SWB-AO-10. If the tool blocks a command then the tool shall issue either an audio or a visual signal.</p>																					
Tester Name:	JRL																					
Test Date:	Sat Jan 24 16:16:13 2004																					
Test PC:	Wimsey																					
Test Software:	SWBT 1.0																					
Hard Drives Used:	Drive 80, label 1F is a Quantum ATLAS10K3_18_SCA Drive with 35916548 sectors																					
Commands executed:	<pre> Boot Test PC to (DOS 7.1) Windows 98 [Version 4.10.2222] tally13 A:\pdb_lite test-hdl SWB-12 Wimsey JRL c 1F Shutdown Test PC </pre>																					
Log File Highlights:	<pre> ***** Monitor Execution ***** Monitor BIOS interrupt 13h (disk service) tally13 compiled on 07/29/03 at 07:33:17 @(#) Version 1.1 Created 07/29/03 at 07:28:05 Now (01/24/04 at 16:14:30) Going . . . TSR ***** Install PDB Log ***** * PDBlock Version 1.02: (P)hysical (D)isk Write (BLOCK)er * PDBLOCK: Fixed Disk Write Protection ENABLED ***** Test Harness Log ***** CMD: A:\TEST-HDL.EXE SWB-12 Wimsey JRL c 1F Case: SWB-12 Command set: Control Date: Sat Jan 24 16:16:13 2004 Version: @(#) test-hdl.cpp Version 1.1 Created 08/23/03 at 10:13:51 @(#) wb-defs.h Version 1.2 Created 08/31/03 at 08:18:19 Compiled on Aug 31 2003 at 08:10:54 Operator: JRL Host: Wimsey Number of drives 1, Drives: 1F Case Cmd Drv Action Stat Cry Count Cmd Name 0 SWB-12 <00> 80 Allowed 0000 Off 1 Reset 1 SWB-12 <0C> 80 Allowed 0000 Off 1 SeekDrive 2 SWB-12 <0D> 80 Allowed 0000 Off 1 AltReset 3 SWB-12 <11> 80 Allowed 0000 Off 1 Recalibrate 4 SWB-12 <47> 80 Allowed 0000 Off 1 ExtendedSeek Results for SWB-12 category c on drive 80 No commands blocked (0 of 5) Summary: 5 sent, 0 blocked, 5 not blocked ***** Signal Log ***** SIGNAL: n </pre>																					
Results:	<table border="1"> <thead> <tr> <th>Assertion</th> <th>Expected Results</th> <th>Actual Results</th> </tr> </thead> <tbody> <tr> <td>AM-05</td> <td>No cmds to drive 80 blocked</td> <td>No cmds to drive 80 blocked</td> </tr> <tr> <td>AM-07</td> <td>Tool active message</td> <td>Tool active message</td> </tr> <tr> <td>AM-08</td> <td>1 drives identified</td> <td>No drives identified</td> </tr> <tr> <td>AM-09</td> <td>Drive 80 is protected</td> <td>Drive 80 is protected</td> </tr> <tr> <td>AM-10</td> <td>0 Commands return success</td> <td>0 Commands return success</td> </tr> <tr> <td>AO-10</td> <td>No signal observed</td> <td>No signal observed</td> </tr> </tbody> </table>	Assertion	Expected Results	Actual Results	AM-05	No cmds to drive 80 blocked	No cmds to drive 80 blocked	AM-07	Tool active message	Tool active message	AM-08	1 drives identified	No drives identified	AM-09	Drive 80 is protected	Drive 80 is protected	AM-10	0 Commands return success	0 Commands return success	AO-10	No signal observed	No signal observed
Assertion	Expected Results	Actual Results																				
AM-05	No cmds to drive 80 blocked	No cmds to drive 80 blocked																				
AM-07	Tool active message	Tool active message																				
AM-08	1 drives identified	No drives identified																				
AM-09	Drive 80 is protected	Drive 80 is protected																				
AM-10	0 Commands return success	0 Commands return success																				
AO-10	No signal observed	No signal observed																				
Analysis:	SWB-12 Expected results not achieved for assertions: AM-08																					

Case SWB-38 PDBlock Version 1.02	
Case summary:	SWB-38 Install all drives, configure to be active at boot and shutdown, configure return code to success, protect with pattern even, execute write commands.
Assertions Tested:	<p>SWB-AM-07. If the tool is executed then the tool shall issue a message indicating that the tool is active.</p> <p>SWB-AM-08. If the tool is executed then the tool shall issue a message indicating all drives accessible by the covered interfaces.</p> <p>SWB-AM-09. If the tool is executed then the tool shall issue a message indicating the protection status of each drive attached to a covered interface.</p> <p>SWB-AM-10. If the tool is configured to return success on blocked commands and the tool blocks a command then the return code shall indicate successful command execution.</p> <p>SWB-AO-08. If the tool is active during the operating system boot and shutdown processes then no changes are made to any protected drives.</p> <p>SWB-AO-10. If the tool blocks a command then the tool shall issue either an audio or a visual signal.</p>
Tester Name:	JRL
Test Date:	Sat Jan 24 15:31:22 2004
Test PC:	McMillan
Test Software:	SWBT 1.0
Hard Drives Used:	<p>Drive 80, label 8A is a WDC WD200EB-00CSF0 with 39102336 sectors</p> <p>Drive 81, label F6 is an IBM-DTLA-307020 with 40188960 sectors</p> <p>Drive 82, label 6F is a Maxtor 6Y060L0 with 120103200 sectors</p> <p>Drive 83, label 1F is a Quantum ATLAS10K3_18_SCA Drive with 35916548 sectors</p> <p>Drive 84, label 2B is a Quantum QM39100TD-SCA Drive with 17783249 sectors</p>
Commands executed:	<p>Boot Test PC to (DOS 7.1) Windows 98 [Version 4.10.2222]</p> <p>tally13</p> <p>A:\pdb_lite</p> <p>test-hdl SWB-38 McMillan JRL a 8A F6 6F 1F 2B</p> <p>Shutdown Test PC</p>
Log File Highlights:	<pre> ***** Monitor Execution ***** Monitor BIOS interrupt 13h (disk service) tally13 compiled on 07/29/03 at 07:33:17 @(#) Version 1.1 Created 07/29/03 at 07:28:05 Now (01/24/04 at 15:29:51) Going . . . TSR ***** Install PDB Log ***** * PDBlock Version 1.02: (P)hysical (D)isk Write (BLOCK)er * PDBLOCK: Fixed Disk Write Protection ENABLED ***** Test Harness Log ***** CMD: A:\TEST-HDL.EXE SWB-38 McMillan JRL a 8A F6 6F 1F 2B Case: SWB-38 Command set: All Date: Sat Jan 24 15:31:22 2004 Version: @(#) test-hdl.cpp Version 1.1 Created 08/23/03 at 10:13:51 @(#) wb-defs.h Version 1.2 Created 08/31/03 at 08:18:19 Compiled on Aug 31 2003 at 08:10:54 Operator: JRL Host: McMillan Number of drives 5, Drives: 8A F6 6F 1F 2B Case Cmd Drv Action Stat Cry Count Cmd Name 0 SWB-38 <03> 80 Blocked 0000 Off 0 WriteSectors 1 SWB-38 <0B> 80 Blocked 0000 Off 0 WriteLong 2 SWB-38 <43> 80 Blocked 0000 Off 0 ExtWrite Results for SWB-38 category w on drive 80 All commands blocked (3 of 3) 0 SWB-38 <03> 81 Blocked 0000 Off 0 WriteSectors 1 SWB-38 <0B> 81 Blocked 0000 Off 0 WriteLong 2 SWB-38 <43> 81 Blocked 0000 Off 0 ExtWrite Results for SWB-38 category w on drive 81 All commands blocked (3 of 3) 0 SWB-38 <03> 82 Blocked 0000 Off 0 WriteSectors 1 SWB-38 <0B> 82 Blocked 0000 Off 0 WriteLong 2 SWB-38 <43> 82 Blocked 0000 Off 0 ExtWrite Results for SWB-38 category w on drive 82 All commands blocked (3 of 3) </pre>

Case SWB-38 PDBlock Version 1.02																																														
	<pre> 0 SWB-38 <03> 83 Blocked 0000 Off 0 WriteSectors 1 SWB-38 <0B> 83 Blocked 0000 Off 0 WriteLong 2 SWB-38 <43> 83 Blocked 0000 Off 0 ExtWrite Results for SWB-38 category w on drive 83 All commands blocked (3 of 3) 0 SWB-38 <03> 84 Blocked 0000 Off 0 WriteSectors 1 SWB-38 <0B> 84 Blocked 0000 Off 0 WriteLong 2 SWB-38 <43> 84 Blocked 0000 Off 0 ExtWrite Results for SWB-38 category w on drive 84 All commands blocked (3 of 3) Summary: 15 sent, 15 blocked, 0 not blocked **** Signal Log **** SIGNAL: y </pre>																																													
Results:	<table border="1"> <thead> <tr> <th>Assertion</th> <th>Expected Results</th> <th>Actual Results</th> </tr> </thead> <tbody> <tr><td>AM-07</td><td>Tool active message</td><td>Tool active message</td></tr> <tr><td>AM-08</td><td>5 drives identified</td><td>No drives identified</td></tr> <tr><td>AM-09</td><td>Drive 80 is protected</td><td>Drive 80 is protected</td></tr> <tr><td>AM-09</td><td>Drive 81 is protected</td><td>Drive 81 is protected</td></tr> <tr><td>AM-09</td><td>Drive 82 is protected</td><td>Drive 82 is protected</td></tr> <tr><td>AM-09</td><td>Drive 83 is protected</td><td>Drive 83 is protected</td></tr> <tr><td>AM-09</td><td>Drive 84 is protected</td><td>Drive 84 is protected</td></tr> <tr><td>AM-10</td><td>15 Commands return success</td><td>15 Commands return success</td></tr> <tr><td>AO-08</td><td>All cmds to drive 80 blocked</td><td>All cmds to drive 80 blocked</td></tr> <tr><td>AO-08</td><td>All cmds to drive 81 blocked</td><td>All cmds to drive 81 blocked</td></tr> <tr><td>AO-08</td><td>All cmds to drive 82 blocked</td><td>All cmds to drive 82 blocked</td></tr> <tr><td>AO-08</td><td>All cmds to drive 83 blocked</td><td>All cmds to drive 83 blocked</td></tr> <tr><td>AO-08</td><td>All cmds to drive 84 blocked</td><td>All cmds to drive 84 blocked</td></tr> <tr><td>AO-10</td><td>Signal observed</td><td>Signal observed</td></tr> </tbody> </table>	Assertion	Expected Results	Actual Results	AM-07	Tool active message	Tool active message	AM-08	5 drives identified	No drives identified	AM-09	Drive 80 is protected	Drive 80 is protected	AM-09	Drive 81 is protected	Drive 81 is protected	AM-09	Drive 82 is protected	Drive 82 is protected	AM-09	Drive 83 is protected	Drive 83 is protected	AM-09	Drive 84 is protected	Drive 84 is protected	AM-10	15 Commands return success	15 Commands return success	AO-08	All cmds to drive 80 blocked	All cmds to drive 80 blocked	AO-08	All cmds to drive 81 blocked	All cmds to drive 81 blocked	AO-08	All cmds to drive 82 blocked	All cmds to drive 82 blocked	AO-08	All cmds to drive 83 blocked	All cmds to drive 83 blocked	AO-08	All cmds to drive 84 blocked	All cmds to drive 84 blocked	AO-10	Signal observed	Signal observed
Assertion	Expected Results	Actual Results																																												
AM-07	Tool active message	Tool active message																																												
AM-08	5 drives identified	No drives identified																																												
AM-09	Drive 80 is protected	Drive 80 is protected																																												
AM-09	Drive 81 is protected	Drive 81 is protected																																												
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AM-09	Drive 84 is protected	Drive 84 is protected																																												
AM-10	15 Commands return success	15 Commands return success																																												
AO-08	All cmds to drive 80 blocked	All cmds to drive 80 blocked																																												
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AO-10	Signal observed	Signal observed																																												
Analysis:	SWB-38 Expected results not achieved for assertions: AM-08																																													

Case SWB-40 PDBlock Version 1.02	
Case summary:	SWB-40 Install all drives, configure return code to success, protect with pattern low, execute write commands, uninstall, execute all commands.
Assertions Tested:	<p>SWB-AM-07. If the tool is executed then the tool shall issue a message indicating that the tool is active.</p> <p>SWB-AM-08. If the tool is executed then the tool shall issue a message indicating all drives accessible by the covered interfaces.</p> <p>SWB-AM-09. If the tool is executed then the tool shall issue a message indicating the protection status of each drive attached to a covered interface.</p> <p>SWB-AM-10. If the tool is configured to return success on blocked commands and the tool blocks a command then the return code shall indicate successful command execution.</p> <p>SWB-AO-09. If the tool is active and the tool is then uninstalled then no commands to any drive shall be blocked.</p> <p>SWB-AO-10. If the tool blocks a command then the tool shall issue either an audio or a visual signal.</p>
Tester Name:	JRL
Test Date:	Sat Jan 24 17:07:18 2004
Test PC:	Cadfael
Test Software:	SWBT 1.0
Hard Drives Used:	<pre> Drive 80, label F6 is an IBM-DTLA-307020 with 40188960 sectors Drive 81, label 6F is a Maxtor 6Y060L0 with 120103200 sectors Drive 82, label 2B is a Quantum QM39100TD-SCA Drive with 17783249 sectors Drive 83, label 1F is a Quantum ATLAS10K3_18_SCA Drive with 35916548 sectors </pre>
Commands executed:	<pre> Boot Test PC to (DOS 7.1) Windows 98 [Version 4.10.2222] A:\tally13 A:\pdb_lite A:\test-hdl SWB-40 Cadfael JRL w F6 6F 2B 1F A:\sig-log SWB-40 Cadfael JRL A:\t-off SWB-40 Cadfael JRL ren A:\swb-log.txt wt-log.txt ren A:\sig-log.txt sg-wt.txt A:\pdb_lite A:\test-hdl SWB-40 Cadfael JRL a F6 6F 2B 1F A:\sig-log SWB-40 Cadfael JRL Shutdown Test PC </pre>

Case SWB-40 PDBlock Version 1.02	
Log File	***** Monitor Execution *****
Highlights:	Monitor BIOS interrupt 13h (disk service) tally13 compiled on 07/29/03 at 07:33:17 @(#) Version 1.1 Created 07/29/03 at 07:28:05 Now (01/24/04 at 17:05:57) Going . . . TSR ***** Install PDB Log ***** * PDBlock Version 1.02: (P)hysical (D)isk Write (BLOCK)er * PDBLOCK: Fixed Disk Write Protection ENABLED ***** Blocked Write Commands ***** CMD: A:\TEST-HDL.EXE SWB-40 Cadfael JRL w F6 6F 2B 1F Case: SWB-40 Command set: Write Date: Sat Jan 24 17:06:43 2004 Version: @(#) test-hdl.cpp Version 1.1 Created 08/23/03 at 10:13:51 @(#) wb-defs.h Version 1.2 Created 08/31/03 at 08:18:19 Compiled on Aug 31 2003 at 08:10:54 Operator: JRL Host: Cadfael Number of drives 4, Drives: F6 6F 2B 1F Case Cmd Drv Action Stat Cry Count Cmd Name 0 SWB-40 <03> 80 Blocked 0000 Off 0 WriteSectors 1 SWB-40 <0B> 80 Blocked 0000 Off 0 WriteLong 2 SWB-40 <43> 80 Blocked 0000 Off 0 ExtWrite Results for SWB-40 category w on drive 80 All commands blocked (3 of 3) 0 SWB-40 <03> 81 Blocked 0000 Off 0 WriteSectors 1 SWB-40 <0B> 81 Blocked 0000 Off 0 WriteLong 2 SWB-40 <43> 81 Blocked 0000 Off 0 ExtWrite Results for SWB-40 category w on drive 81 All commands blocked (3 of 3) 0 SWB-40 <03> 82 Blocked 0000 Off 0 WriteSectors 1 SWB-40 <0B> 82 Blocked 0000 Off 0 WriteLong 2 SWB-40 <43> 82 Blocked 0000 Off 0 ExtWrite Results for SWB-40 category w on drive 82 All commands blocked (3 of 3) 0 SWB-40 <03> 83 Blocked 0000 Off 0 WriteSectors 1 SWB-40 <0B> 83 Blocked 0000 Off 0 WriteLong 2 SWB-40 <43> 83 Blocked 0000 Off 0 ExtWrite Results for SWB-40 category w on drive 83 All commands blocked (3 of 3) Summary: 12 sent, 12 blocked, 0 not blocked Number of Commands not blocked (should total to 0) Drive Count 80 0 81 0 82 0 83 0 ***** Uninstall PDB Log ***** PDBLOCK: Fixed Disk Write Protection DISABLED ***** Test Harness Log ***** CMD: A:\TEST-HDL.EXE SWB-40 Cadfael JRL a F6 6F 2B 1F Case: SWB-40 Command set: All Date: Sat Jan 24 17:07:18 2004 Version: @(#) test-hdl.cpp Version 1.1 Created 08/23/03 at 10:13:51 @(#) wb-defs.h Version 1.2 Created 08/31/03 at 08:18:19 Compiled on Aug 31 2003 at 08:10:54 Operator: JRL Host: Cadfael Number of drives 4, Drives: F6 6F 2B 1F Case Cmd Drv Action Stat Cry Count Cmd Name 0 SWB-40 <00> 80 Allowed 0000 Off 1 Reset 1 SWB-40 <0C> 80 Allowed 0000 Off 1 SeekDrive 2 SWB-40 <0D> 80 Allowed 0000 Off 1 AltReset 3 SWB-40 <11> 80 Allowed 0000 Off 1 Recalibrate 4 SWB-40 <47> 80 Allowed 0000 Off 1 ExtendedSeek Results for SWB-40 category c on drive 80 No commands blocked (0 of 5) 0 SWB-40 <00> 81 Allowed 0000 Off 1 Reset 1 SWB-40 <0C> 81 Allowed 0000 Off 1 SeekDrive

Case SWB-40 PDBlock Version 1.02

```

2 SWB-40 <0D> 81 Allowed 0000 Off 1 AltReset
3 SWB-40 <11> 81 Allowed 0000 Off 1 Recalibrate
4 SWB-40 <47> 81 Allowed 0000 Off 1 ExtendedSeek
Results for SWB-40 category c on drive 81 No commands blocked (0 of 5)
0 SWB-40 <00> 82 Allowed 0000 Off 1 Reset
1 SWB-40 <0C> 82 Allowed 0000 Off 1 SeekDrive
2 SWB-40 <0D> 82 Allowed 0000 Off 1 AltReset
3 SWB-40 <11> 82 Allowed 0000 Off 1 Recalibrate
4 SWB-40 <47> 82 Allowed 0000 Off 1 ExtendedSeek
Results for SWB-40 category c on drive 82 No commands blocked (0 of 5)
0 SWB-40 <00> 83 Allowed 0000 Off 1 Reset
1 SWB-40 <0C> 83 Allowed 0000 Off 1 SeekDrive
2 SWB-40 <0D> 83 Allowed 0000 Off 1 AltReset
3 SWB-40 <11> 83 Allowed 0000 Off 1 Recalibrate
4 SWB-40 <47> 83 Allowed 0000 Off 1 ExtendedSeek
Results for SWB-40 category c on drive 83 No commands blocked (0 of 5)
Summary: 20 sent, 0 blocked, 20 not blocked

0 SWB-40 <01> 80 Allowed 0000 Off 1 GetLastStatus
1 SWB-40 <04> 80 Allowed 0000 Off 1 VerifySectors
2 SWB-40 <08> 80 Allowed 0000 Off 1 ReadDriveParms
3 SWB-40 <10> 80 Allowed 0000 Off 1 TestDriveReady
4 SWB-40 <15> 80 Allowed 0000 Off 1 ReadDriveType
5 SWB-40 <41> 80 Allowed 0000 Off 1 CheckForExtensions
6 SWB-40 <44> 80 Allowed 0000 Off 1 VerifySectors
7 SWB-40 <48> 80 Allowed 0000 Off 1 GetDriveParms
Results for SWB-40 category i on drive 80 No commands blocked (0 of 8)
0 SWB-40 <01> 81 Allowed 0000 Off 1 GetLastStatus
1 SWB-40 <04> 81 Allowed 0000 Off 1 VerifySectors
2 SWB-40 <08> 81 Allowed 0000 Off 1 ReadDriveParms
3 SWB-40 <10> 81 Allowed 0000 Off 1 TestDriveReady
4 SWB-40 <15> 81 Allowed 0000 Off 1 ReadDriveType
5 SWB-40 <41> 81 Allowed 0000 Off 1 CheckForExtensions
6 SWB-40 <44> 81 Allowed 0000 Off 1 VerifySectors
7 SWB-40 <48> 81 Allowed 0000 Off 1 GetDriveParms
Results for SWB-40 category i on drive 81 No commands blocked (0 of 8)
0 SWB-40 <01> 82 Allowed 0000 Off 1 GetLastStatus
1 SWB-40 <04> 82 Allowed 0000 Off 1 VerifySectors
2 SWB-40 <08> 82 Allowed 0000 Off 1 ReadDriveParms
3 SWB-40 <10> 82 Allowed 0000 Off 1 TestDriveReady
4 SWB-40 <15> 82 Allowed 0000 Off 1 ReadDriveType
5 SWB-40 <41> 82 Allowed 0000 Off 1 CheckForExtensions
6 SWB-40 <44> 82 Allowed 0000 Off 1 VerifySectors
7 SWB-40 <48> 82 Allowed 0000 Off 1 GetDriveParms
Results for SWB-40 category i on drive 82 No commands blocked (0 of 8)
0 SWB-40 <01> 83 Allowed 0000 Off 1 GetLastStatus
1 SWB-40 <04> 83 Allowed 0000 Off 1 VerifySectors
2 SWB-40 <08> 83 Allowed 0000 Off 1 ReadDriveParms
3 SWB-40 <10> 83 Allowed 0000 Off 1 TestDriveReady
4 SWB-40 <15> 83 Allowed 0000 Off 1 ReadDriveType
5 SWB-40 <41> 83 Allowed 0000 Off 1 CheckForExtensions
6 SWB-40 <44> 83 Allowed 0000 Off 1 VerifySectors
7 SWB-40 <48> 83 Allowed 0000 Off 1 GetDriveParms
Results for SWB-40 category i on drive 83 No commands blocked (0 of 8)
Summary: 32 sent, 0 blocked, 32 not blocked

0 SWB-40 <02> 80 Allowed 0000 Off 1 ReadSectors
1 SWB-40 <0A> 80 Allowed 0000 Off 1 ReadLong
2 SWB-40 <42> 80 Allowed 0000 Off 1 ExtRead
Results for SWB-40 category r on drive 80 No commands blocked (0 of 3)
0 SWB-40 <02> 81 Allowed 0000 Off 1 ReadSectors
1 SWB-40 <0A> 81 Allowed 0000 Off 1 ReadLong
2 SWB-40 <42> 81 Allowed 0000 Off 1 ExtRead
Results for SWB-40 category r on drive 81 No commands blocked (0 of 3)
0 SWB-40 <02> 82 Allowed 0000 Off 1 ReadSectors
1 SWB-40 <0A> 82 Allowed 0000 Off 1 ReadLong
2 SWB-40 <42> 82 Allowed 0000 Off 1 ExtRead
Results for SWB-40 category r on drive 82 No commands blocked (0 of 3)
0 SWB-40 <02> 83 Allowed 0000 Off 1 ReadSectors
1 SWB-40 <0A> 83 Allowed 0000 Off 1 ReadLong

```

Case SWB-40 PDBlock Version 1.02

```

2 SWB-40 <42> 83 Allowed 0000 Off      1  ExtRead
Results for SWB-40 category r on drive 83 No commands blocked (0 of 3)
Summary: 12 sent, 0 blocked, 12 not blocked

0 SWB-40 <03> 80 Allowed 0000 Off      1  WriteSectors
1 SWB-40 <0B> 80 Allowed 0000 Off      1  WriteLong
2 SWB-40 <43> 80 Allowed 0000 Off      1  ExtWrite
Results for SWB-40 category w on drive 80 No commands blocked (0 of 3)
0 SWB-40 <03> 81 Allowed 0000 Off      1  WriteSectors
1 SWB-40 <0B> 81 Allowed 0000 Off      1  WriteLong
2 SWB-40 <43> 81 Allowed 0000 Off      1  ExtWrite
Results for SWB-40 category w on drive 81 No commands blocked (0 of 3)
0 SWB-40 <03> 82 Allowed 0000 Off      1  WriteSectors
1 SWB-40 <0B> 82 Allowed 0000 Off      1  WriteLong
2 SWB-40 <43> 82 Allowed 0000 Off      1  ExtWrite
Results for SWB-40 category w on drive 82 No commands blocked (0 of 3)
0 SWB-40 <03> 83 Allowed 0000 Off      1  WriteSectors
1 SWB-40 <0B> 83 Allowed 0000 Off      1  WriteLong
2 SWB-40 <43> 83 Allowed 0000 Off      1  ExtWrite
Results for SWB-40 category w on drive 83 No commands blocked (0 of 3)
Summary: 12 sent, 0 blocked, 12 not blocked

0 SWB-40 <05> 80 Allowed 0000 Off      1  FormatTrack
1 SWB-40 <06> 80 Allowed 0000 Off      1  FormatBadSectors
2 SWB-40 <07> 80 Allowed 0000 Off      1  FormatCyl
3 SWB-40 <09> 80 Allowed 0000 Off      1  InitDriveParms
4 SWB-40 <0E> 80 Allowed 0000 Off      1  DiagnosticESDI
5 SWB-40 <0F> 80 Allowed 0000 Off      1  DiagnosticESDI
6 SWB-40 <12> 80 Allowed 0000 Off      1  DiagnosticRAM
7 SWB-40 <13> 80 Allowed 0000 Off      1  DiagnosticDrive
8 SWB-40 <14> 80 Allowed 0000 Off      1  DiagnosticCTL
Results for SWB-40 category x on drive 80 No commands blocked (0 of 9)
0 SWB-40 <05> 81 Allowed 0000 Off      1  FormatTrack
1 SWB-40 <06> 81 Allowed 0000 Off      1  FormatBadSectors
2 SWB-40 <07> 81 Allowed 0000 Off      1  FormatCyl
3 SWB-40 <09> 81 Allowed 0000 Off      1  InitDriveParms
4 SWB-40 <0E> 81 Allowed 0000 Off      1  DiagnosticESDI
5 SWB-40 <0F> 81 Allowed 0000 Off      1  DiagnosticESDI
6 SWB-40 <12> 81 Allowed 0000 Off      1  DiagnosticRAM
7 SWB-40 <13> 81 Allowed 0000 Off      1  DiagnosticDrive
8 SWB-40 <14> 81 Allowed 0000 Off      1  DiagnosticCTL
Results for SWB-40 category x on drive 81 No commands blocked (0 of 9)
0 SWB-40 <05> 82 Allowed 0000 Off      1  FormatTrack
1 SWB-40 <06> 82 Allowed 0000 Off      1  FormatBadSectors
2 SWB-40 <07> 82 Allowed 0000 Off      1  FormatCyl
3 SWB-40 <09> 82 Allowed 0000 Off      1  InitDriveParms
4 SWB-40 <0E> 82 Allowed 0000 Off      1  DiagnosticESDI
5 SWB-40 <0F> 82 Allowed 0000 Off      1  DiagnosticESDI
6 SWB-40 <12> 82 Allowed 0000 Off      1  DiagnosticRAM
7 SWB-40 <13> 82 Allowed 0000 Off      1  DiagnosticDrive
8 SWB-40 <14> 82 Allowed 0000 Off      1  DiagnosticCTL
Results for SWB-40 category x on drive 82 No commands blocked (0 of 9)
0 SWB-40 <05> 83 Allowed 0000 Off      1  FormatTrack
1 SWB-40 <06> 83 Allowed 0000 Off      1  FormatBadSectors
2 SWB-40 <07> 83 Allowed 0000 Off      1  FormatCyl
3 SWB-40 <09> 83 Allowed 0000 Off      1  InitDriveParms
4 SWB-40 <0E> 83 Allowed 0000 Off      1  DiagnosticESDI
5 SWB-40 <0F> 83 Allowed 0000 Off      1  DiagnosticESDI
6 SWB-40 <12> 83 Allowed 0000 Off      1  DiagnosticRAM
7 SWB-40 <13> 83 Allowed 0000 Off      1  DiagnosticDrive
8 SWB-40 <14> 83 Allowed 0000 Off      1  DiagnosticCTL
Results for SWB-40 category x on drive 83 No commands blocked (0 of 9)
Summary: 36 sent, 0 blocked, 36 not blocked

0 SWB-40 <16> 80 Allowed 0000 Off      1  Undefined
...

misc commands 17-FD results omitted

see log files for full results

```

Case SWB-40 PDBlock Version 1.02

```

...

226 SWB-40 <FE> 80 Allowed 0000 Off      1 Undefined
227 SWB-40 <FF> 80 Allowed 0000 Off      1 Undefined
Results for SWB-40 category m on drive 80 No commands blocked (0 of
228)
  0 SWB-40 <16> 81 Allowed 0000 Off      1 Undefined
...

misc commands 17-FD results omitted

see log files for full results

...

226 SWB-40 <FE> 81 Allowed 0000 Off      1 Undefined
227 SWB-40 <FF> 81 Allowed 0000 Off      1 Undefined
Results for SWB-40 category m on drive 81 No commands blocked (0 of
228)
  0 SWB-40 <16> 82 Allowed 0000 Off      1 Undefined
...

misc commands 17-FD results omitted

see log files for full results

...

226 SWB-40 <FE> 82 Allowed 0000 Off      1 Undefined
227 SWB-40 <FF> 82 Allowed 0000 Off      1 Undefined
Results for SWB-40 category m on drive 82 No commands blocked (0 of
228)
  0 SWB-40 <16> 83 Allowed 0000 Off      1 Undefined
...

misc commands 17-FD results omitted

see log files for full results

...

226 SWB-40 <FE> 83 Allowed 0000 Off      1 Undefined
227 SWB-40 <FF> 83 Allowed 0000 Off      1 Undefined
Results for SWB-40 category m on drive 83 No commands blocked (0 of
228)
Summary: 912 sent, 0 blocked, 912 not blocked

**** Signal Log ****
SIGNAL: n

```

Results:	Assertion	Expected Results	Actual Results
	AM-07	Tool active message	Tool active message
	AM-08	4 drives identified	No drives identified
	AM-09	Drive 80 is protected	Drive 80 is protected
	AM-09	Drive 81 is protected	Drive 81 is protected
	AM-09	Drive 82 is protected	Drive 82 is protected
	AM-09	Drive 83 is protected	Drive 83 is protected
	AM-10	0 Commands return success	0 Commands return success
	AO-09	SWB removed	SWB removed
	AO-10	No signal observed	No signal observed

Analysis: SWB-40 Expected results not achieved for assertions: AM-08

About the National Institute of Justice

NIJ is the research, development, and evaluation agency of the U.S. Department of Justice. The Institute provides objective, independent, evidence-based knowledge and tools to enhance the administration of justice and public safety. NIJ's principal authorities are derived from the Omnibus Crime Control and Safe Streets Act of 1968, as amended (see 42 U.S.C. §§ 3721–3723).

The NIJ Director is appointed by the President and confirmed by the Senate. The Director establishes the Institute's objectives, guided by the priorities of the Office of Justice Programs, the U.S. Department of Justice, and the needs of the field. The Institute actively solicits the views of criminal justice and other professionals and researchers to inform its search for the knowledge and tools to guide policy and practice.

Strategic Goals

NIJ has seven strategic goals grouped into three categories:

Creating relevant knowledge and tools

1. Partner with State and local practitioners and policymakers to identify social science research and technology needs.
2. Create scientific, relevant, and reliable knowledge—with a particular emphasis on terrorism, violent crime, drugs and crime, cost-effectiveness, and community-based efforts—to enhance the administration of justice and public safety.
3. Develop affordable and effective tools and technologies to enhance the administration of justice and public safety.

Dissemination

4. Disseminate relevant knowledge and information to practitioners and policymakers in an understandable, timely, and concise manner.
5. Act as an honest broker to identify the information, tools, and technologies that respond to the needs of stakeholders.

Agency management

6. Practice fairness and openness in the research and development process.
7. Ensure professionalism, excellence, accountability, cost-effectiveness, and integrity in the management and conduct of NIJ activities and programs.

Program Areas

In addressing these strategic challenges, the Institute is involved in the following program areas: crime control and prevention, including policing; drugs and crime; justice systems and offender behavior, including corrections; violence and victimization; communications and information technologies; critical incident response; investigative and forensic sciences, including DNA; less-than-lethal technologies; officer protection; education and training technologies; testing and standards; technology assistance to law enforcement and corrections agencies; field testing of promising programs; and international crime control.

In addition to sponsoring research and development and technology assistance, NIJ evaluates programs, policies, and technologies. NIJ communicates its research and evaluation findings through conferences and print and electronic media.

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or contact:

National Criminal Justice
Reference Service
P.O. Box 6000
Rockville, MD 20849–6000
800–851–3420
e-mail: askncjrs@ncjrs.org