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Test Results for Digital Data Acquisition Tool: Image MASSter Solo-3 Forensics; Software Version 2.0.10.23f

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Introduction

The Computer Forensics Tool Testing (CFTT) program is a joint project of the National Institute of Justice (NIJ), the Department of Homeland Security (DHS), and the National Institute of Standards and Technology's (NIST's) Office of Law Enforcement Standards (OLES) and Information Technology Laboratory (ITL). CFTT is supported by other organizations, including the Federal Bureau of Investigation, the U.S. Department of Defense Cyber Crime Center, U.S. Internal Revenue Service Criminal Investigation Division Electronic Crimes Program, the Bureau of Immigration and Customs Enforcement and U.S. Secret Service. The objective of the CFTT program 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 CFTT approach to 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/) for review and comment by the computer forensics community.

This document reports the results from testing Image MASSter Solo-3 Forensics, Software Version 2.0.10.23f, against the *Digital Data Acquisition Tool Assertions and Test Plan Version 1.0*, available at the CFTT Web site (http://www.cftt.nist.gov/DA-ATP-pc-01.pdf).

Test results from other tools and the CFTT tool methodology can be found on NIJ's computer forensics tool testing Web

page, http://www.nij.gov/nij/topics/forensics/evidence/digital/standards/cftt.htm.

How to Read This Report

This report is divided into five sections. The first section is a summary of the results from the test runs. This section is sufficient for most readers to assess the suitability of the tool for the intended use. The remaining sections of the report describe how the tests were conducted, discuss any anomalies that were encountered and provide documentation of test case run details that support the report summary. Section 2 gives justification for the selection of test cases from the set of possible cases defined in the test plan for Digital Data Acquisition tools. The test cases are selected, in general, based on features offered by the tool. Section 3 describes in more depth any anomalies summarized in the first section. Section 4 lists hardware and software used to run the test cases with links to additional information about the items used. Section 5 contains a description of each test case run. The description of each test run lists all test assertions used in the test case, the expected result and the actual result. Please refer to the vendor's owner manual for guidance on using the tool.

Test Results for Digital Data Acquisition Tool

Tool Tested:	Image MASSter Solo-3 Forensics
Software Version:	2.0.10.23f
Firmware Versions:	5.0.4.5, 5.0.4.6, and 5.0.4.10
Supplier:	Intelligent Computer Solutions, Inc.
Address:	9350 Eton Ave. Chatsworth, CA 91311
Tel:	(888) 994-4678 (818) 998-5805
Fax:	(818) 998-3190
WWW:	http://www.ics-iq.com/

1 Results Summary

The tool acquired source drives completely and accurately with the exception of four cases: a case where a source drive containing faulty sectors was imaged and the tool was configured to skip sectors in the same block as faulty sectors; a case where the tool was configured to restore an image file to two destination drives; a case where a drive was cloned with the *Lg-XferBlk* option enabled; and a case where the tool was configured to clone a drive that had not been removed from a laptop. The tool reported incorrect hash values in two cases: a case where insufficient space existed on the destination volume and multiple destination volumes were used (i.e., drive spanning) and a case that tested restoring that image to a clone. Two test cases involve creating truncated clones. In one case a truncated clone was created from a source drive and in the other a truncated clone was created from an image file. In both cases the tool did not notify the user that a truncated clone had been created.

The following anomalies were observed:

- Less than 20 percent of source drive sectors were copied accurately when the *Lg-XferBlk* setting was selected (DA-01-SATA48).
- When two drives were selected as targets for a restore from a single image file, one of the clones that was created was inaccurate and incomplete (DA-14-SATA28/DA-14-SATA28-EVIDENCEII).
- Readable sectors that were in the same imaging block as faulty sectors on a source drive were not acquired when the *Skip Block* imaging option was selected. The tool wrote zeros to the target drive in place of these sectors. This is the behavior intended for the tool by the vendor (DA-09-SKIPBLOCK).
- The tool failed to notify the user when a truncated clone was created from a physical device (DA-04).

- The tool failed to give a meaningful error message when creating a truncated clone from an image file (DA-17).
- The hash value reported by the tool was incorrect when insufficient space existed on the destination volume and multiple destination volumes (drive spanning) were used (DA-13).
- When restoring to a clone the image that was created using multiple destination volumes and drive spanning, the hash value reported by the tool was incorrect (DA-14-HOT).
- The tool has a procedure for acquiring a drive without removing the drive from the host computer. An attempt to acquire a drive over the FireWire interface was not successful (DA-01-FWLAP).

2 Test Case Selection

Test cases used to test disk imaging tools are defined in *Digital Data Acquisition Tool Assertions and Test Plan Version 1.0*. To test a tool, test cases are selected from the *Test Plan* document based on the features offered by the tool. Not all test cases or test assertions are appropriate for all tools. There is a core set of base cases (DA-06, DA-07 and DA-08) that are executed for every tool tested. Tool features guide the selection of additional test cases. If a given tool implements a given feature, then the test cases linked to that feature are run. Table 1 lists the features available in Image MASSter Solo-3 Forensics and the linked test cases selected for execution. Table 2 lists the features not available in Image MASSter Solo-3 Forensics and the test cases not executed.

Table 1. Selected Test Cases

Supported Optional Feature	Cases selected for execution
Create a clone during acquisition	01
Create a truncated clone from a physical device	04
Base Cases	06, 07 & 08
Read error during acquisition	09
Destination Device Switching	13
Create a clone from an image file	14 & 17
Fill excess sectors on a clone acquisition	19
Detect a corrupted (or changed) image file	24 & 25

Table 2. Omitted Test Cases

Unsupported Optional Feature	Cases omitted (not executed)
Create an unaligned clone from a digital source	02
Create cylinder aligned clones	03, 15, 21 & 23
Device I/O error generator available	05, 11 & 18
Create an image file in more than one format	10
Insufficient space for image file	12
Create a clone from a subset of an image file	16
Fill excess sectors on a clone device	20, 21, 22 & 23
Convert an image file from one format to another	26

Some test cases have variant forms to accommodate parameters within test assertions. These variations cover the acquisition interface to the source drive, the type of digital object acquired, and the way that sectors are hidden on a drive. Additional parameters that were varied between test cases were target device port, number of target devices (one device or two), interface to target device(s), use of the *verify* and *Lg-XferBlk* settings, type(s) of hash algorithm calculated, image file segment size and acquisition speed.

The following source access interfaces were tested: ATA28, ATA48, SATA28, SATA48, ESATA, SCSI, FW, and USB. These are noted as variations on test cases DA-01, DA-06, and DA-08.

The following digital source type was tested: compact flash (CF).

The Solo-3 Forensics has two sets of target device ports for connecting target devices (i.e., media storage drive or drive to create clone to): “EVIDENCE DRIVE I” and “EVIDENCE DRIVE II.” Except for two instances, all device acquisitions and restores involved the use of single target device ports. Test cases DA-01-ATA28, DA-01-ATA28-EVIDENCEII, DA-14-SATA28, and DA-14-SATA28-EVIDENCEII document tests that involved the use of two target device ports; DA-01-ATA28 and DA-01-ATA28-EVIDENCEII document the acquisition of an ATA28 device to clones on two target ATA28 drives; and DA-14-SATA28 and DA-14-SATA28-EVIDENCEII document the use of the tool to create clones to two target SATA28 devices from an image file.

The use of the following hash algorithms was tested: md5, sha1, and sha256. It should be noted that the Solo-3 Forensics device reconfigures its firmware based on the hash algorithm selected. Test cases that tested use of the md5 algorithm ran using firmware version 5.0.4.10, cases that tested use of the sha1 algorithm ran using version 5.0.4.5, and cases that tested the use of the sha256 algorithm ran using version 5.0.4.6.

Most tests were run using a standard configuration of the Solo-3 Forensics device and the natively supported drive interfaces; two test cases, DA–01–USB and DA-01-FWLAP, test an alternate configuration. These test cases test the acquisition of drives without

removing them from the desktop or laptop over the USB and FireWire interfaces using the vendor-supplied LinkMASSter 3.0.0.8 boot CD.

3 Results by Test Assertion

A test assertion is a verifiable statement about a single condition after an action is performed by the tool under test. A test case usually checks a group of assertions after the action of a single execution of the tool under test. Test assertions are defined and linked to test cases in *Digital Data Acquisition Tool Assertions and Test Plan Version 1.0*. Table 3 summarizes the test results for all the test cases by assertion. The column labeled **Assertions Tested** gives the text of each assertion. The column labeled **Tests** gives the number of test cases that use the given assertion. The column labeled **Anomaly** gives the section number in this report where any observed anomalies are discussed.

See section 2 for a discussion of source access interface, execution environment and digital source.

Table 3. Assertions Tested

Assertions Tested	Tests	Anomaly
AM-01 The tool uses access interface SRC-AI to access the digital source.	26	3.6
AM-02 The tool acquires digital source DS.	26	
AM-03 The tool executes in execution environment XE.	38	
AM-04 If clone creation is specified, the tool creates a clone of the digital source.	12	
AM-05 If image file creation is specified, the tool creates an image file on file system type FS.	14	
AM-06 All visible sectors are acquired from the digital source.	26	3.3
AM-07 All hidden sectors are acquired from the digital source.	3	
AM-08 All sectors acquired from the digital source are acquired accurately.	26	3.1
AM-09 If unresolved errors occur while reading from the selected digital source, the tool notifies the user of the error type and location within the digital source.	3	
AM-10 If unresolved errors occur while reading from the selected digital source, the tool uses a benign fill in the destination object in place of the inaccessible data.	3	
AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.	14	
AO-04 If the tool is creating an image file and there is insufficient space on the image destination device to contain the image file, the tool shall notify the user.	1	
AO-05 If the tool creates a multifile image of a requested size, then all the individual files shall be no larger than the requested size.	14	
AO-06 If the tool performs an image file integrity	1	

Assertions Tested	Tests	Anomaly
check on an image file that has not been changed since the file was created, the tool shall notify the user that the image file has not been changed.		
AO-07 If the tool performs an image file integrity check on an image file that has been changed since the file was created, the tool shall notify the user that the image file has been changed.	1	
AO-08 If the tool performs an image file integrity check on an image file that has been changed since the file was created, the tool shall notify the user of the affected locations.	1	
AO-10 If there is insufficient space to contain all files of a multifile image and if destination device switching is supported, the image is continued on another device.	1	
AO-11 If requested, a clone is created during an acquisition of a digital source.	12	
AO-12 If requested, a clone is created from an image file.	10	3.2
AO-13 A clone is created using access interface DST-AI to write to the clone device.	22	
AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.	21	
AO-17 If requested, any excess sectors on a clone destination device are not modified.	13	
AO-18 If requested, a benign fill is written to excess sectors of a clone.	1	
AO-19 If there is insufficient space to create a complete clone, a truncated clone is created using all available sectors of the clone device.	2	
AO-20 If a truncated clone is created, the tool notifies the user.	2	3.4
AO-23 If the tool logs any log-significant information, the information is accurately recorded in the log file.	38	3.5
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.	26	

Two test assertions only apply in special circumstances. The assertion AO-22 is checked only for tools that create block hashes. The assertion AO-24 is only checked if the tool is executed in a run time environment that does not modify attached storage devices, such as MS-DOS. In normal operation, an imaging tool is used in conjunction with a write block device to protect the source drive; however, a blocker was not used during the tests so that assertion AO-24 could be checked. Table 4 lists the assertions that were not tested, usually due to the tool not supporting some optional feature, e.g., creation of cylinder-aligned clones.

Table 4. Assertions not Tested

Assertions not Tested
AO-02 If an image file format is specified, the tool creates an image file in the specified format.
AO-03 If there is an error while writing the image file, the tool notifies the user.
AO-09 If the tool converts a source image file from one format to a target image file in another format, the acquired data represented in the target image file is the same as the acquired data in the source image file.
AO-15 If an aligned clone is created, each sector within a contiguous span of sectors from the source is accurately written to the same disk address on the clone device relative to the start of the span as the sector occupied on the original digital source. A span of sectors is defined to be either a mountable partition or a contiguous sequence of sectors not part of a mountable partition. Extended partitions, which may contain both mountable partitions and unallocated sectors, are not mountable partitions.
AO-16 If a subset of an image or acquisition is specified, all of the subset is cloned.
AO-21 If there is a write error during clone creation, the tool notifies the user.
AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.

3.1 Inaccurate Acquire to a Clone

In test case DA-01-SATA48, the Solo-3 Forensics device was configured to use the *Lg-XferBlk* imaging option to clone a 250GB source drive to a slightly larger destination drive. 97,204,670 sectors (20 percent) of the created clone matched the corresponding sectors on the source drive. The remaining 391,192,498 sectors did not. The test case, DA-01-SATA48, was rerun without *Lg-XferBlk* as DA-01-SATA48-ALT and the same source drive was acquired completely and accurately.

3.2 Partial and Inaccurate Clone Created on Image Restore

DA-14-SATA28 and DA-14-SATA28-EVIDENCEII document a test where the Solo-3 Forensics device was configured to restore the image of an 80 GB drive to two destination drives in the same restore operation. In this test, Solo-3 Forensics created a complete and accurate clone to the drive that was connected on the EVIDENCE II port (DA-14-SATA28-EVIDENCEII), but the clone it created to the drive on EVIDENCE I (DA-14-SATA28) was both incomplete and inaccurate. First, the clone was incomplete. Solo-3 Forensics only wrote to the first 2,000,000 (approximate) sectors of the EVIDENCE I drive; the size of the EVIDENCE I drive was 156,301,488 sectors. Second, the clone was inaccurate. The content that the Solo-3 Forensics wrote to the clone was from the end of the image. For example, sector 0 of the clone contained the contents for sector 154,431,488 of the image, sector 1 of the clone contained the contents for sector 154,431,489, etc.

3.3 Acquisition of Faulty Sectors

The Solo-3 Forensics device offers three options for treating faulty sectors encountered on the source media:

- *Prompt* – user is given the options to abort acquire or skip faulty sector
- *Continue* – tool automatically skips any faulty sectors
- *Skip Block* – skip entire 256-sector imaging block when a faulty sector is encountered and write 0s (zeroes).

For test case DA-09-SKIPBLOCK, the *Skip Block* option is specified and some readable sectors are missed. For test cases DA-09-PROMPT and DA-09-CONTINUE, the *Prompt* and *Continue* options were specified and all readable sectors were acquired. These are the behaviors intended for the tool by the vendor.

3.4 Truncated Clone Behaviors

DA-04 tests the behavior of the Solo-3 Forensics when asked to acquire a physical device to a truncated clone. DA-17 tests the behavior for creating truncated clones from image files. In DA-04, the tool failed to notify the user (neither prior to acquisition nor upon completion) that a truncated clone was created. The same was true in DA-17. When the acquisition had completed, the tool instead reported that the operation had failed and that the destination drive contained a faulty sector.

3.5 Incorrect Hash Values

Solo-3 Forensics supports destination device switching when acquiring a device to an image file and insufficient space exists on a volume. This capability is referred to as "drive spanning" in vendor documentation. For test case DA-13, where this functionality is tested, the hash value calculated by the tool is incorrect.

In DA-14-HOT, restoring DA-13's image to a clone, the clone is created correctly but the hash reported is again incorrect.

3.6 Imaging Using the LinkMASSter Boot CD

Two test cases, DA-01-USB and DA-01-FWLAP, test Solo-3 Forensics' ability to acquire a drive that has not been removed from a PC. The PCs were booted using the LinkMASSter version 3.0.0.8 boot CD and the data was acquired via the USB and FireWire interfaces. Test case DA-01-USB completed without anomaly; DA-01-FWLAP runs did not. These behaviors were observed:

- Test host machine booting into LinkMASSter software, but unable to detect destination (evidence) drive.
- Test host machine booting into the LinkMASSter software and detecting destination (evidence) drive, but aborting with errors either initially or partway through the clone operation.

4 Testing Environment

The tests were run in the NIST CFTT lab. This section describes the test computers available for testing, using the support software, and notes on other test hardware.

4.1 Test Computers

Two test computers were used. Bold lettering indicates the computer name (unique identifier) and is followed by the computer's configuration.

Chip has the following configuration:

Dell Latitude D800
Phoenix Technologies BIOS Revision A09
Intel® Pentium™ M CPU 1.7Ghz
Intel® 855PM chipset
2GB RAM
Samsung SN-324S CDRW/DVD-ROM drive
1 PCMCIA port
3 USB 2.0 ports
1 IEEE 1394 port

SamSpade has the following configuration:

Intel® D865PERL Motherboard
BE7X 1.08.00.048 BIOS
Intel® Pentium™ 4 CPU 2.4GHz
FE7X 1.05.00.063 Firmware
2048 MB RAM
ABIT R9200SE-T APG graphics adapter
3ware ATA RAID Contoller: Escalade 7506-4LP
Lite-On DVDRW SOHW-1234 Drive
1.44 MB Floppy Drive
Four USB ports
Two slots for removable IDE drives
One slot for removable SATA drive

4.2 Support Software

A package of programs to support test analysis, FS-TST Release 2.0, was used. The software can be obtained from: http://www.cftt.nist.gov/diskimaging/fs-tst20.zip.

4.3 Test Drive Creation

There are three ways that a hard drive may be used in a tool test case: as a source drive that is imaged by the tool, as a media drive that contains image files created by the tool under test, or as a destination drive on which the tool under test creates a clone of the source drive. In addition to operating system drive formatting tools, some tools (**diskwipe** and **diskhash**) from the FS-TST package are used to setup test drives.

To setup a media drive, the drive is formatted with one of the supported file systems. A media drive may be used in several test cases.

The setup of most source drives follows the same general procedure, but there are several steps that may be varied depending on the needs of the test case.

1. The drive is filled with known data by the **diskwipe** program from FS-TST. The **diskwipe** program writes the sector address to each sector in both C/H/S and LBA format. The remainder of the sector bytes is set to a constant fill value unique for each drive. The fill value is noted in the **diskwipe** tool log file.
2. The drive may be formatted with partitions as required for the test case.
3. An operating system may optionally be installed.
4. A set of reference hashes is created by the FS-TST **diskhash** tool. These include both SHA1 and MD5 hashes. In addition to full drive hashes, hashes of each partition may also be computed.
5. If the drive is intended for hidden area tests (DA-08), a Host Protected Area, a Device Configuration Overlay or both may be created. The **diskhash** tool is then used to calculate reference hashes of just the visible sectors of the drive.

The source drives for DA-09 are created such that there is a consistent set of faulty sectors on the drive. Each of these source drives is initialized with **diskwipe** and then their faulty sectors are activated. For each of these source drives, a second drive of the same size with the same content as the faulty sector drive, but with no faulty sectors, serves as a reference drive for images made from the faulty drive.

To setup a destination drive, the drive is filled with known data by the **diskwipe** program from FS-TST. Partitions may be created if the test case involves restoring from the image of a logical acquire.

4.4 Test Drive Analysis

For test cases that create a clone of a physical device (e.g., DA-01, DA-04, etc.), the destination drive is compared to the source drive with the **diskcmp** program from the FS-TST package; for test cases that create a clone of a logical device, i.e., a partition (e.g., DA-02, DA-20, etc.), the destination partition is compared to the source partition with the **partcmp** program. For a destination created from an image file (e.g., DA-14), the destination is compared, using either **diskcmp** (for physical device clones) or **partcmp** (for partition clones), to the source that was acquired to create the image file. Both **diskcmp** and **partcmp** note differences between the source and destination. If the destination is larger than the source, it is scanned and the excess destination sectors are categorized as either “undisturbed” (still containing the fill pattern written by **diskwipe**), “zero filled” or “changed to something else.”

For test case DA-09, imaging a drive with known faulty sectors, the program **anabad** is used to compare the faulty sector reference drive to a cloned version of the faulty sector drive.

For test cases such as DA-06 and DA-07, any acquisition hash computed by the tool under test is compared to the reference hash of the source to check that the source is completely and accurately acquired.

4.5 Note on Test Drives

The testing uses several test drives from a variety of vendors. The drives are identified by an external label that consists of a two-digit, hexadecimal value and an optional tag, e.g., 25-SATA. The combination of hex value and tag serves as a unique identifier for each drive. The two-digit hex value is used by the FS-TST **diskwipe** program as a sector fill value. The FS-TST compare tools, **diskcmp** and **partcmp,** count sectors that are filled with the source and destination fill values on a destination that is larger than the original source.

5 Test Results

The main item of interest for interpreting the test results is determining the conformance of the device with the test assertions. Conformance with each assertion tested by a given test case is evaluated by examining the Log Highlights box of the test case details.

5.1 Test Results Report Key

A summary of the actual test results is presented in this report. The following table presents a description of each section of the test report summary. The Tester Name, Test Host, Test Date, Drives, Source Setup and Log Highlights sections for each test case are populated by excerpts taken from the log files produced by the tool under test and the FS-TST tools that were executed in support of test case setup and analysis.

Heading	Description
First Line:	Test case ID, name, and version of tool tested.
Case Summary:	Test case summary from *Digital Data Acquisition Tool Assertions and Test Plan Version 1.0*.
Assertions:	The test assertions applicable to the test case, selected from *Digital Data Acquisition Tool Assertions and Test Plan Version 1.0*.
Tester Name:	Name or initials of person executing test procedure.
Test Host:	Host computer executing the test.
Test Date:	Time and date that test was started.
Drives:	Source drive (the drive acquired), destination drive (if a clone is created) and media drive (to contain a created image).
Source Setup:	Layout of partitions on the source drive and the expected hash of the drive.
Log Highlights:	Information extracted from various log files to illustrate conformance or nonconformance to the test assertions.
Results:	Expected and actual results for each assertion tested.
Analysis:	Whether or not the expected results were achieved.

5.2 Test Details

5.2.1 DA-01-ATA28

Test Case DA-01-ATA28 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Fri Apr 30 11:50:16 2010
Drives:	src(01-IDE) dst (FC) other (none)
Source Setup:	src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 > src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E > 78165360 total sectors (40020664320 bytes) Model (0BB-00JHC0) serial # (WD-WMAMC74171) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended 15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027744192 sectors 14205026304 bytes
Log	====== Destination drive setup ======

Test Case DA-01-ATA28 Image MASSter Solo-3 Software Version 2.0.10.23f

Highlights:

```
90069840 sectors wiped with FC

====== Comparison of original to clone drive ======
Sectors compared: 78165360
Sectors match:    78165360
Sectors differ:          0
Bytes differ:            0
Diffs range
Source (78165360) has 11904480 fewer sectors than destination (90069840)
Zero fill:                0
Src Byte fill (01):       0
Dst Byte fill (FC): 11904480
Other fill:               0
Other no fill:            0
Zero fill range:
Src fill range:
Dst fill range:  78165360-90069839
Other fill range:
Other not filled range:
0 source read errors, 0 destination read errors


====== Tool Settings: ======
Lg-XferBlk yes
dst-interface ata28
dst-port I

====== Extract from IM Solo III audit01.txt file ======
Unit Settings . . .
Software Version 2.0.10.23f
Built on: Jul 30 2009 15:23:21
Firmware Version 5.0.4.10
SCSI Module F/W:   1.80
Serial #: 32520
Operational mode: SING Capture
Hashing: MD5
Suspect drive's Identity
Model: WDC WD400BB-00JHC0
Serial Number: WD-WMAMC7417100
Capacity: 38166MB, 78165360 sectors
Block size: 512

====== Hash of Acquired Data ======
MD5: F458F673 894753FA 6A0EC8B8 EC63848E

====== Source drive rehash ======
Rehash (SHA1) of source: A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9
```

Results:

Assertion & Expected Result	Actual Result
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-04 A clone is created.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-11 A clone is created during acquisition.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results achieved

5.2.2 DA-01-ATA28-EVIDENCEII

Test Case DA-01-ATA28-EVIDENCEII Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Fri Apr 30 12:05:10 2010
Drives:	src(01-IDE) dst (6F) other (none)
Source Setup:	src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 > src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E > 78165360 total sectors (40020664320 bytes) Model (0BB-00JHC0) serial # (WD-WMAMC74171) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended 15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027744192 sectors 14205026304 bytes
Log Highlights:	====== Destination drive setup ====== 120103200 sectors wiped with 6F ====== Comparison of original to clone drive ====== Sectors compared: 78165360

Test Case DA-01-ATA28-EVIDENCEII Image MASSter Solo-3 Software Version 2.0.10.23f

```
Sectors match:    78165360
Sectors differ:          0
Bytes differ:            0
Diffs range
Source (78165360) has 41937840 fewer sectors than destination (120103200)
Zero fill:                 0
Src Byte fill (01):        0
Dst Byte fill (6F): 41937840
Other fill:                0
Other no fill:             0
Zero fill range:
Src fill range:
Dst fill range:  78165360-120103199
Other fill range:
Other not filled range:
0 source read errors, 0 destination read errors


====== Tool Settings: ======
Lg-XferBlk yes
dst-interface ata28
dst-port II

====== Extract from IM Solo III audit01.txt file ======
Unit Settings . . .
Software Version 2.0.10.23f
Built on: Jul 30 2009 15:23:21
Firmware Version 5.0.4.10
SCSI Module F/W:   1.80
Serial #: 32520
Operational mode: SING Capture
Hashing: MD5
Suspect drive's Identity
Model: WDC WD400BB-00JHC0
Serial Number: WD-WMAMC7417100
Capacity: 38166MB, 78165360 sectors
Block size: 512

====== Hash of Acquired Data ======
MD5: F458F673 894753FA 6A0EC8B8 EC63848E

====== Source drive rehash ======
Rehash (SHA1) of source: A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9
```

Results:

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-04 A clone is created.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-11 A clone is created during acquisition.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results achieved

5.2.3 DA-01-ATA48

Test Case DA-01-ATA48 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Tue May 4 09:19:30 2010
Drives:	src(4C) dst (46-SATA) other (none)
Source Setup:	src hash (SHA1): < 8FF620D2BEDCCAFE8412EDAAD56C8554F872EFBF > src hash (MD5): < D10F763B56D4CEBA2D1311C61F9FB382 > 390721968 total sectors (200049647616 bytes) 24320/254/63 (max cyl/hd values) 24321/255/63 (number of cyl/hd) IDE disk: Model (WDC WD2000JB-00KFA0) serial # (WD-WMAMR1031111) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 390700737 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 390700737 sectors 200038777344 bytes
Log Highlights:	====== Destination drive setup ====== 488397168 sectors wiped with 46 ====== Comparison of original to clone drive ====== Sectors compared: 390721968 Sectors match: 390721968 Sectors differ: 0 Bytes differ: 0 Diffs range Source (390721968) has 97675200 fewer sectors than destination (488397168) Zero fill: 0 Src Byte fill (01): 0 Dst Byte fill (6F): 0 Other fill (46): 97675200 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: Other fill range: 390721968-488397167 Other not filled range: 0 source read errors, 0 destination read errors ====== Tool Settings: ======

Test Case DA-01-ATA48 Image MASSter Solo-3 Software Version 2.0.10.23f

```
Lg-XferBlk yes
dst-interface SATA48
dst-port II

====== Extract from IM Solo III audit01.txt file ======
Unit Settings . . .
Software Version 2.0.10.23f
Built on: Jul 30 2009 15:23:21
Firmware Version 5.0.4.5
SCSI Module F/W:   1.80
Serial #: 32520
Operational mode: SING Capture
Hashing: SHA1
Suspect drive's Identity
Model: WDC WD2000JB-00KFA0
Serial Number: WD-WMAMR1031111
Capacity: 190782MB, 390721968 sectors
Block size: 512

====== Hash of Acquired Data ======
SHA1: 8FF620D2 BEDCCAFE 8412EDAA D56C8554 F872EFBF

====== Source drive rehash ======
Rehash (SHA1) of source: 8FF620D2BEDCCAFE8412EDAAD56C8554F872EFBF
```

Results:

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-04 A clone is created.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-11 A clone is created during acquisition.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results achieved

5.2.4 DA-01-ESATA

Test Case DA-01-ESATA Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Wed Oct 6 15:50:29 2010
Drives:	src(07-SATA) dst (83) other (none)
Source Setup:	src hash (SHA256): < CE65C4A3C3164D3EBAD58D33BB2415D29E260E1F88DC5A131B1C4C9C2945B8A9 > src hash (SHA1): < 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E > src hash (MD5): < 2EAF712DAD80F66E30DEA00365B4579B > 156301488 total sectors (80026361856 bytes) Model (WDC WD800JD-32HK) serial # (WD-WMAJ91510044) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 156280257 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 156280257 sectors 80015491584 bytes
Log Highlights:	====== Destination drive setup ====== 156301488 sectors wiped with 83 ====== Comparison of original to clone drive ====== Sectors compared: 156301488 Sectors match: 156301488 Sectors differ: 0 Bytes differ: 0 Diffs range 0 source read errors, 0 destination read errors ====== Tool Settings: ====== Lg-XferBlk yes dst-interface ATA28 dst-port I ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80

Test Case DA-01-ESATA Image MASSter Solo-3 Software Version 2.0.10.23f

Serial #: 32520
Operational mode: SING Capture
Hashing: SHA1
Suspect drive's Identity
Model: WDC WD800JD-32HKA0
Serial Number: WD-WMAJ91510044
Capacity: 76319MB, 156301488 sectors
Block size: 512

====== Hash of Acquired Data ======
SHA1: 655E9BDD B36A3F9C 5C4CC8BF 32B8C5B4 1AF9F52E

====== Source drive rehash ======
Rehash (SHA1) of source: 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E

Results:

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-04 A clone is created.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-11 A clone is created during acquisition.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results achieved

5.2.5 DA-01-FWLAP

Test Case DA-01-FWLAP Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	Chip
Test Date:	Tue May 11 11:47:34 2010
Drives:	src(07-LAP) dst (23-IDE) other (none)
Source Setup:	src hash (SHA1): < C97EB69418E8FEA0BB70083F62A42DC8902F2340 > src hash (MD5): < 266887701A9921484CE78347DD48AF49 > 195371568 total sectors (100030242816 bytes) 12160/254/63 (max cyl/hd values) 12161/255/63 (number of cyl/hd) Model (A) serial # (5MH0Q8)
Log Highlights:	====== Destination drive setup ====== 195813072 sectors wiped with 23 Unable to complete successful test run. The following behaviors were observed: either 1) test host machine booting into LinkMASSter software, but unable to detect destination (evidence) drive or 2) test host machine booting into the LinkMASSter software and detecting destination (evidence) drive, but aborting with errors either initially or part way through the clone (single capture) operation. ====== Tool Settings: ====== Lg-XferBlk yes dst-interface ATA28 dst-port I ====== Source drive rehash ====== Rehash (SHA1) of source: C97EB69418E8FEA0BB70083F62A42DC8902F2340
Results:	

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	Acquisition failed
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-04 A clone is created.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-11 A clone is created during acquisition.	as expected
AO-13 Clone created using interface AI.	as expected

Test Case DA-01-FWLAP Image MASSter Solo-3 Software Version 2.0.10.23f		
	AO-14 An unaligned clone is created.	as expected
	AO-17 Excess sectors are unchanged.	as expected
	AO-22 Tool calculates hashes by block.	option not available
	AO-23 Logged information is correct.	as expected
	AO-24 Source is unchanged by acquisition.	as expected
Analysis:	Expected results not achieved	

5.2.6 DA-01-SATA28

Test Case DA-01-SATA28 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Tue May 4 16:18:27 2010
Drives:	src(07-SATA) dst (04-SATA) other (none)
Source Setup:	src hash (SHA256): < CE65C4A3C3164D3EBAD58D33BB2415D29E260E1F88DC5A131B1C4C9C2945B8A9 > src hash (SHA1): < 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E > src hash (MD5): < 2EAF712DAD80F66E30DEA00365B4579B > 156301488 total sectors (80026361856 bytes) Model (WDC WD800JD-32HK) serial # (WD-WMAJ91510044) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 156280257 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 156280257 sectors 80015491584 bytes
Log Highlights:	====== Destination drive setup ====== 156301488 sectors wiped with 4 ====== Comparison of original to clone drive ====== Sectors compared: 156301488 Sectors match: 156301488 Sectors differ: 0 Bytes differ: 0 Diffs range 0 source read errors, 0 destination read errors ====== Tool Settings: ====== Lg-XferBlk yes dst-interface SATA28 dst-port I ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.6 SCSI Module F/W: 1.80

Test Case DA-01-SATA28 Image MASSter Solo-3 Software Version 2.0.10.23f	
	Serial #: 32520 Operational mode: SING Capture Read-Verify: Full Hashing: SHA2 Suspect drive's Identity Model: WDC WD800JD-32HKA0 Serial Number: WD-WMAJ91510044 Capacity: 76319MB, 156301488 sectors Block size: 512 ====== Hash of Acquired Data ====== SHA2: CE65C4A3 C3164D3E BAD58D33 BB2415D2 9E260E1F 88DC5A13 1B1C4C9C 2945B8A9 ====== Source drive rehash ====== Rehash (SHA1) of source: 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E
Results:	

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-04 A clone is created.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-11 A clone is created during acquisition.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis:	Expected results achieved

5.2.7 DA-01-SATA48

Test Case DA-01-SATA48 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Wed May 5 10:36:16 2010
Drives:	src(0D-SATA) dst (2C-IDE) other (none)
Source Setup:	src hash (SHA1): < BAAD80E8781E55F2E3EF528CA73BD41D228C1377 > src hash (MD5): < 1FA7C3CBE60EB9E89863DED2411E40C9 > 488397168 total sectors (250059350016 bytes) 30400/254/63 (max cyl/hd values) 30401/255/63 (number of cyl/hd) Model (WDC WD2500JD-22F) serial # (WD-WMAEH2678216) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 488375937 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 488375937 sectors 250048479744 bytes
Log Highlights:	====== Destination drive setup ====== 490234752 sectors wiped with 2C ====== Comparison of original to clone drive ====== Sectors compared: 488397168 Sectors match: 97204670 Sectors differ: 391192498 Bytes differ: 9475117854 Diffs range 688351-720884, 801659-801882, 802551-804212, 804215-805853, 805857-853395, 853503-855391, 855551-857368, 857599-858813, 859135-860268, 860274-860638, 860932-862309, 862571-864328, 864604-865750, 866037-867904, 868175-889664, 889667-889762, 889767-890153, 890159-890357, 890359-890361, 890364-890375. . . + 391074141 more Source (488397168) has 1837584 fewer sectors than destination (490234752) Zero fill: 0 Src Byte fill (0D): 0 Dst Byte fill (2C): 1837584 Other fill: 0 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: 488397168-490234751 Other fill range:

Test Case DA-01-SATA48 Image MASSter Solo-3 Software Version 2.0.10.23f

Other not filled range:
0 source read errors, 0 destination read errors

```
====== Tool Settings: ======
Lg-XferBlk yes
dst-interface ATA48
dst-port I

====== Extract from IM Solo III audit01.txt file ======
Unit Settings . . .
Software Version 2.0.10.23f
Built on: Jul 30 2009 15:23:21
Firmware Version 5.0.4.10
SCSI Module F/W:   1.80
Serial #: 32520
Operational mode: SING Capture
Hashing: MD5+
Suspect drive's Identity
Model: WDC WD2500JD-22FYB0
Serial Number: WD-WMAEH2678216
Capacity: 238475MB, 488397168 sectors
Block size: 512

====== Hash of Acquired Data ======
MD5: 1FA7C3CB E60EB9E8 9863DED2 411E40C9
MD5: C66145F5 9CF4D636 2DA4C224 903619B5

====== Source drive rehash ======
Rehash (SHA1) of source: BAAD80E8781E55F2E3EF528CA73BD41D228C1377
```

Results:

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-04 A clone is created.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	80% of sectors not acquired
AO-11 A clone is created during acquisition.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results not achieved

5.2.8 DA-01-SATA48-ALT

Test Case DA-01-SATA48-ALT Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Tue Oct 12 15:14:51 2010
Drives:	src(0D-SATA) dst (2C-IDE) other (none)
Source Setup:	src hash (SHA1): < BAAD80E8781E55F2E3EF528CA73BD41D228C1377 > src hash (MD5): < 1FA7C3CBE60EB9E89863DED2411E40C9 > 488397168 total sectors (250059350016 bytes) 30400/254/63 (max cyl/hd values) 30401/255/63 (number of cyl/hd) Model (WDC WD2500JD-22F) serial # (WD-WMAEH2678216) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 488375937 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 488375937 sectors 250048479744 bytes
Log Highlights:	====== Destination drive setup ====== 490234752 sectors wiped with 2C ====== Comparison of original to clone drive ====== Sectors compared: 488397168 Sectors match: 488397168 Sectors differ: 0 Bytes differ: 0 Diffs range Source (488397168) has 1837584 fewer sectors than destination (490234752) Zero fill: 0 Src Byte fill (0D): 0 Dst Byte fill (2C): 1837584 Other fill: 0 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: 488397168-490234751 Other fill range: Other not filled range: 0 source read errors, 0 destination read errors ====== Tool Settings: ======

Test Case DA-01-SATA48-ALT Image MASSter Solo-3 Software Version 2.0.10.23f

```
Lg-XferBlk no
dst-interface ATA48
dst-port I

====== Extract from IM Solo III audit01.txt file ======
Unit Settings . . .
Software Version 2.0.10.23f
Built on: Jul 30 2009 15:23:21
Firmware Version 5.0.4.10
SCSI Module F/W:   1.80
Serial #: 32520
Operational mode: SING Capture
Hashing: MD5+
Suspect drive's Identity
Model: WDC WD2500JD-22FYB0
Serial Number: WD-WMAEH2678216
Capacity: 238475MB, 488397168 sectors
Block size: 512

====== Hash of Acquired Data ======
MD5: 1FA7C3CB E60EB9E8 9863DED2 411E40C9
MD5: 1FA7C3CB E60EB9E8 9863DED2 411E40C9

====== Source drive rehash ======
Rehash (SHA1) of source: BAAD80E8781E55F2E3EF528CA73BD41D228C1377
```

Results:

Assertion & Expected Result	Actual Result
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-04 A clone is created.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-11 A clone is created during acquisition.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results achieved

5.2.9 DA-01-SCSI

Test Case DA-01-SCSI Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	jrl
Test Host:	none
Test Date:	Fri May 7 10:05:47 2010
Drives:	src(E0) dst (CC) other (none)
Source Setup:	src hash (SHA1): < 4A6941F1337A8A22B10FC844B4D7FA6158BECB82 > src hash (MD5): < A97C8F36B7AC9D5233B90AC09284F938 > 17938985 total sectors (9184760320 bytes) Model (ATLAS10K2-TY092J) serial # (169028142436)
Log Highlights:	====== Destination drive setup ====== 71687370 sectors wiped with CC ====== Comparison of original to clone drive ====== Sectors compared: 17938985 Sectors match: 17938985 Sectors differ: 0 Bytes differ: 0 Diffs range Source (17938985) has 53748385 fewer sectors than destination (71687370) Zero fill: 0 Src Byte fill (E0): 0 Dst Byte fill (CC): 53748385 Other fill: 0 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: 17938985-71687369 Other fill range: Other not filled range: 0 source read errors, 0 destination read errors ====== Tool Settings: ====== Lg-XferBlk yes dst-interface SCSI dst-port I ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21

Test Case DA-01-SCSI Image MASSter Solo-3 Software Version 2.0.10.23f

```
Firmware Version 5.0.4.10
SCSI Module F/W:   1.80
Serial #: 32520
Operational mode: SING Capture
Hashing: SHA1+
Suspect drive's Identity
Model: QUANTUM ATLAS10K2-TY092JDDD6
Serial Number:
Capacity: 8759MB, 17938985 sectors
Block size: 512

====== Hash of Acquired Data ======
SHA1: 4A6941F1 337A8A22 B10FC844 B4D7FA61 58BECB82
SHA1: 4A6941F1 337A8A22 B10FC844 B4D7FA61 58BECB82

====== Source drive rehash ======
Rehash (SHA1) of source: 4A6941F1337A8A22B10FC844B4D7FA6158BECB82
```

Results:

Assertion & Expected Result	Actual Result
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-04 A clone is created.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-11 A clone is created during acquisition.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results achieved

5.2.10 DA-01-USB

Test Case DA-01-USB Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	SamSpade
Test Date:	Thu May 13 14:23:36 2010
Drives:	src(01-IDE) dst (49-SATA) other (none)
Source Setup:	src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 > src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E > 78165360 total sectors (40020664320 bytes) Model (0BB-00JHC0) serial # (WD-WMAMC74171) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended 15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027744192 sectors 14205026304 bytes
Log Highlights:	====== Destination drive setup ====== 156301488 sectors wiped with 49 ====== Comparison of original to clone drive ======

Test Case DA-01-USB Image MASSter Solo-3 Software Version 2.0.10.23f

```
Sectors compared: 78165360
Sectors match:    78165360
Sectors differ:          0
Bytes differ:            0
Diffs range
Source (78165360) has 78136128 fewer sectors than destination (156301488)
Zero fill:               0
Src Byte fill (01):      0
Dst Byte fill (49): 78136128
Other fill:              0
Other no fill:           0
Zero fill range:
Src fill range:
Dst fill range:  78165360-156301487
Other fill range:
Other not filled range:
0 source read errors, 0 destination read errors


====== Tool Settings: ======
dst-interface SATA28
dst-port I

====== Extract from IM Solo III audit01.txt file ======
Suspect drive's Identity
Drive Position: ATA)
Model: WDC WD400BB-00JHC0
Serial Number: WD-WMAMC7417100
Capacity: 38166MB, 78165360 sectors
Block size: 512
====== Hash of Acquired Data ======
SHA1: 0xA48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9

====== Source drive rehash ======
Rehash (SHA1) of source: A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9
```

Results:

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-04 A clone is created.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-11 A clone is created during acquisition.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results achieved

5.2.11 DA-04

Test Case DA-04 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-04 Acquire a physical device to a truncated clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-19 If there is insufficient space to create a complete clone, a truncated clone is created using all available sectors of the clone device. AO-20 If a truncated clone is created, the tool notifies the user. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Fri May 14 09:53:22 2010
Drives:	src(01-IDE) dst (25-IDE) other (none)
Source Setup:	src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 > src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E > 78165360 total sectors (40020664320 bytes) Model (0BB-00JHC0) serial # (WD-WMAMC74171) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended 15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027744192 sectors 14205026304 bytes
Log Highlights:	====== Destination drive setup ====== 58633344 sectors wiped with 25 ====== Comparison of original to clone drive ======

Test Case DA-04 Image MASSter Solo-3 Software Version 2.0.10.23f

```
Sectors compared: 58633344
Sectors match:    58633344
Sectors differ:          0
Bytes differ:            0
Diffs range
Source (78165360) has 19532016 more sectors than destination (58633344)
0 source read errors, 0 destination read errors

====== Error Message: ======
Success!
Hash result:
CRC32: 85E76C48
SHA1: 53A00648 392AB837 FEEF43
BA C32BB954 37153174
for 58633344 sectors.


====== Tool Settings: ======
Lg-XferBlk yes
dst-interface ata28
dst-port I

====== Extract from IM Solo III audit01.txt file ======
Unit Settings . . .
Software Version 2.0.10.23f
Built on: Jul 30 2009 15:23:21
Firmware Version 5.0.4.5
SCSI Module F/W:   1.80
Serial #: 32520
Operational mode: SING Capture
Hashing: SHA1
Suspect drive's Identity
Model: WDC WD400BB-00JHC0
Serial Number: WD-WMAMC7417100
Capacity: 38166MB, 78165360 sectors
Block size: 512

====== Hash of Acquired Data ======
SHA1: 53A00648 392AB837 FEEF43BA C32BB954 37153174

====== Source drive rehash ======
Rehash (SHA1) of source: A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9
```

Results:

Assertion & Expected Result	Actual Result
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-04 A clone is created.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-11 A clone is created during acquisition.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-19 Truncated clone is created.	as expected
AO-20 User notified that clone is truncated.	No message indicating incomplete acquire
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results not achieved

5.2.12 DA-06-ATA28

Test Case DA-06-ATA28 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-06 Acquire a physical device using access interface AI to an image file.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-05 If image file creation is specified, the tool creates an image file on file system type FS. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool. AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Wed May 19 15:27:27 2010
Drives:	src(01-IDE) dst (none) other (3B-SATA)
Source Setup:	src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 > src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E > 78165360 total sectors (40020664320 bytes) Model (0BB-00JHC0) serial # (WD-WMAMC74171) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended 15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027744192 sectors 14205026304 bytes
Log Highlights:	====== Tool Settings: ====== Lg-XferBlk no dst-port I ====== Image file segments ====== 1 681574400 06ata28.001 2 681574400 06ata28.002 3 681574400 06ata28.003

Test Case DA-06-ATA28 Image MASSter Solo-3 Software Version 2.0.10.23f

```
   . . .
    57  681574400 06ata28.057
    58  681574400 06ata28.058
    59  489349120 06ata28.059
====== Extract from IM Solo III audit01.txt file ======
Unit Settings . . .
Software Version 2.0.10.23f
Built on: Jul 30 2009 15:23:21
Firmware Version 5.0.4.5
SCSI Module F/W:   1.80
Serial #: 32520
Operational mode: LinuxDD Capture
Fragment size: 655MB
Hashing: SHA1
Suspect drive's Identity
Model: WDC WD400BB-00JHC0
Serial Number: WD-WMAMC7417100
Capacity: 38166MB, 78165360 sectors
Block size: 512

====== Hash of Acquired Data ======
SHA1: A48BB566 5D6DC57C 22DB68E2 F723DA9A A8DF82B9

====== Source drive rehash ======
Rehash (SHA1) of source: A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9
```

Results:

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-05 An image is created on file system type FS.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-01 Image file is complete and accurate.	as expected
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results achieved

5.2.13 DA-06-ATA48

Test Case DA-06-ATA48 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-06 Acquire a physical device using access interface AI to an image file.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-05 If image file creation is specified, the tool creates an image file on file system type FS. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool. AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Tue May 18 17:31:11 2010
Drives:	src(4C) dst (none) other (3B-SATA)
Source Setup:	src hash (SHA1): < 8FF620D2BEDCCAFE8412EDAAD56C8554F872EFBF > src hash (MD5): < D10F763B56D4CEBA2D1311C61F9FB382 > 390721968 total sectors (200049647616 bytes) 24320/254/63 (max cyl/hd values) 24321/255/63 (number of cyl/hd) IDE disk: Model (WDC WD2000JB-00KFA0) serial # (WD-WMAMR1031111) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 390700737 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 390700737 sectors 200038777344 bytes
Log Highlights:	====== Tool Settings: ====== Lg-XferBlk yes dst-port I ====== Image file segments ====== 1 4289724416 06ata48.001 2 4289724416 06ata48.002 3 4289724416 06ata48.003 . . . 45 4289724416 06ata48.045 46 4289724416 06ata48.046 47 2722324480 06ata48.047 ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Capture Fragment size: 4096MB Hashing: SHA1 Suspect drive's Identity Model: WDC WD2000JB-00KFA0 Serial Number: WD-WMAMR1031111 Capacity: 190782MB, 390721968 sectors Block size: 512

Test Case DA-06-ATA48 Image MASSter Solo-3 Software Version 2.0.10.23f	
	====== Hash of Acquired Data ====== SHA1: 8FF620D2 BEDCCAFE 8412EDAA D56C8554 F872EFBF ====== Source drive rehash ====== Rehash (SHA1) of source: 8FF620D2BEDCCAFE8412EDAAD56C8554F872EFBF
Results:	

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-05 An image is created on file system type FS.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-01 Image file is complete and accurate.	as expected
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis:	Expected results achieved

5.2.14 DA-06-ESATA

Test Case DA-06-ESATA Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-06 Acquire a physical device using access interface AI to an image file.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-05 If image file creation is specified, the tool creates an image file on file system type FS. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool. AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Fri Oct 8 09:18:20 2010
Drives:	src(07-SATA) dst (none) other (3D-SATA)
Source Setup:	src hash (SHA256): < CE65C4A3C3164D3EBAD58D33BB2415D29E260E1F88DC5A131B1C4C9C2945B8A9 > src hash (SHA1): < 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E > src hash (MD5): < 2EAF712DAD80F66E30DEA00365B4579B > 156301488 total sectors (80026361856 bytes) Model (WDC WD800JD-32HK) serial # (WD-WMAJ91510044) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 156280257 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 156280257 sectors 80015491584 bytes
Log Highlights:	====== Tool Settings: ====== Lg-XferBlk no dst-port I ====== Image file segments ====== 1 4289724416 06esatal.001 2 4289724416 06esatal.002 3 4289724416 06esatal.003 . . . 17 4289724416 06esatal.017 18 4289724416 06esatal.018 19 2811322368 06esatal.019 ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Capture Fragment size: 4096MB Hashing: SHA1 Suspect drive's Identity Model: WDC WD800JD-32HKA0 Serial Number: WD-WMAJ91510044 Capacity: 76319MB, 156301488 sectors

Test Case DA-06-ESATA Image MASSter Solo-3 Software Version 2.0.10.23f	
	Block size: 512 ====== Hash of Acquired Data ====== SHA1: 655E9BDD B36A3F9C 5C4CC8BF 32B8C5B4 1AF9F52E ====== Source drive rehash ====== Rehash (SHA1) of source: 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E
Results:	

Assertion & Expected Result	Actual Result
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-05 An image is created on file system type FS.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-01 Image file is complete and accurate.	as expected
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis:	Expected results achieved

5.2.15 DA-06-SATA28

Test Case DA-06-SATA28 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-06 Acquire a physical device using access interface AI to an image file.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-05 If image file creation is specified, the tool creates an image file on file system type FS. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool. AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Thu May 20 11:24:13 2010
Drives:	src(01-SATA) dst (none) other (3B-SATA)
Source Setup:	src hash (SHA256): < 1AA01FEAE55F5CD55185D2B1A1359B3F913E7093FEF1D1ADA220CAC456BA40D8 > src hash (SHA1): < 4951236428C36B944E62E8D65862DCBEF05F282C > src hash (MD5): < 0A49B13D91FA9DA87CEEE9D006CB6FD6 > 156301488 total sectors (80026361856 bytes) Model (0JD-32HKA0) serial # (WD-WMAJ91448529)
Log Highlights:	====== Tool Settings: ====== Lg-XferBlk yes dst-port II ====== Image file segments ====== 1 1068498944 06sata28.001 2 1068498944 06sata28.002 3 1068498944 06sata28.003 . . . 73 1068498944 06sata28.073 74 1068498944 06sata28.074 75 957440000 06sata28.075 ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.6 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Capture Fragment size: 1024MB Hashing: SHA2+ Suspect drive's Identity Model: WDC WD800JD-32HKA0 Serial Number: WD-WMAJ91448529 Capacity: 76319MB, 156301488 sectors Block size: 512 ====== Hash of Acquired Data ====== SHA2: 1AA01FEA E55F5CD5 5185D2B1 A1359B3F 913E7093 FEF1D1AD A220CAC4 56BA40D8 SHA2: 1AA01FEA E55F5CD5 5185D2B1 A1359B3F 913E7093 FEF1D1AD A220CAC4

<table>
<tr><td colspan="2">Test Case DA-06-SATA28 Image MASSter Solo-3 Software Version 2.0.10.23f</td></tr>
<tr><td></td><td>56BA40D8

====== Source drive rehash ======
Rehash (SHA1) of source: 4951236428C36B944E62E8D65862DCBEF05F282C</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-01 Source acquired using interface AI.</td><td>as expected</td></tr>
<tr><td>AM-02 Source is type DS.</td><td>as expected</td></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AM-05 An image is created on file system type FS.</td><td>as expected</td></tr>
<tr><td>AM-06 All visible sectors acquired.</td><td>as expected</td></tr>
<tr><td>AM-08 All sectors accurately acquired.</td><td>as expected</td></tr>
<tr><td>AO-01 Image file is complete and accurate.</td><td>as expected</td></tr>
<tr><td>AO-05 Multifile image created.</td><td>as expected</td></tr>
<tr><td>AO-22 Tool calculates hashes by block.</td><td>option not available</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
<tr><td>AO-24 Source is unchanged by acquisition.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

5.2.16 DA-06-SATA48

Test Case DA-06-SATA48 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-06 Acquire a physical device using access interface AI to an image file.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-05 If image file creation is specified, the tool creates an image file on file system type FS. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool. AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Fri May 21 10:12:39 2010
Drives:	src(0D-SATA) dst (none) other (3B-SATA)
Source Setup:	src hash (SHA1): < BAAD80E8781E55F2E3EF528CA73BD41D228C1377 > src hash (MD5): < 1FA7C3CBE60EB9E89863DED2411E40C9 > 488397168 total sectors (250059350016 bytes) 30400/254/63 (max cyl/hd values) 30401/255/63 (number of cyl/hd) Model (WDC WD2500JD-22F) serial # (WD-WMAEH2678216) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 488375937 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 488375937 sectors 250048479744 bytes
Log Highlights:	====== Tool Settings: ====== Lg-XferBlk yes dst-port I ====== Image file segments ====== 1 4289724416 06sata48.001 2 4289724416 06sata48.002 3 4289724416 06sata48.003 . . . 57 4289724416 06sata48.057 58 4289724416 06sata48.058 59 1255333888 06sata48.059 ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Capture Fragment size: 4096MB Hashing: SHA1 Suspect drive's Identity Model: WDC WD2500JD-22FYB0 Serial Number: WD-WMAEH2678216 Capacity: 238475MB, 488397168 sectors Block size: 512

Test Case DA-06-SATA48 Image MASSter Solo-3 Software Version 2.0.10.23f	
	====== Hash of Acquired Data ====== SHA1: BAAD80E8 781E55F2 E3EF528C A73BD41D 228C1377 ====== Source drive rehash ====== Rehash (SHA1) of source: BAAD80E8781E55F2E3EF528CA73BD41D228C1377
Results:	
Analysis:	Expected results achieved

Assertion & Expected Result	Actual Result
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-05 An image is created on file system type FS.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-01 Image file is complete and accurate.	as expected
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

5.2.17 DA-06-SCSI

Test Case DA-06-SCSI Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-06 Acquire a physical device using access interface AI to an image file.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-05 If image file creation is specified, the tool creates an image file on file system type FS. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool. AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Tue Jun 22 08:57:45 2010
Drives:	src(E0) dst (none) other (1D)
Source Setup:	src hash (SHA1): < 4A6941F1337A8A22B10FC844B4D7FA6158BECB82 > src hash (MD5): < A97C8F36B7AC9D5233B90AC09284F938 > 17938985 total sectors (9184760320 bytes) Model (ATLAS10K2-TY092J) serial # (169028142436)
Log Highlights:	====== Tool Settings: ====== Lg-XferBlk yes dst-port I ====== Image file segments ====== 1 99614720 06scsi.001 2 99614720 06scsi.002 3 99614720 06scsi.003 . . . 91 99614720 06scsi.091 92 99614720 06scsi.092 93 20206080 06scsi.093 ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Capture Fragment size: 100MB Hashing: SHA1 Suspect drive's Identity Model: QUANTUM ATLAS10K2-TY092JDDD6 Serial Number: 169028142436 Capacity: 8759MB, 17938985 sectors Block size: 512 ====== Hash of Acquired Data ====== SHA1: 4A6941F1 337A8A22 B10FC844 B4D7FA61 58BECB82 ====== Source drive rehash ====== Rehash (SHA1) of source: 4A6941F1337A8A22B10FC844B4D7FA6158BECB82
Results:	

Test Case DA-06-SCSI Image MASSter Solo-3 Software Version 2.0.10.23f		
	Assertion & Expected Result	**Actual Result**
	AM-01 Source acquired using interface AI.	as expected
	AM-02 Source is type DS.	as expected
	AM-03 Execution environment is XE.	as expected
	AM-05 An image is created on file system type FS.	as expected
	AM-06 All visible sectors acquired.	as expected
	AM-08 All sectors accurately acquired.	as expected
	AO-01 Image file is complete and accurate.	as expected
	AO-05 Multifile image created.	as expected
	AO-22 Tool calculates hashes by block.	option not available
	AO-23 Logged information is correct.	as expected
	AO-24 Source is unchanged by acquisition.	as expected
Analysis:	Expected results achieved	

5.2.18 DA-07-CF

Test Case DA-07-CF Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-07 Acquire a digital source of type DS to an image file.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-05 If image file creation is specified, the tool creates an image file on file system type FS. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool. AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Wed May 26 12:21:46 2010
Drives:	src(C1-CF) dst (none) other (3B-SATA)
Source Setup:	src hash (SHA256): < C7CF0218222DF80D5316511D6814266C7FA507C13F795AD3D323BB73C1590D80 > src hash (SHA1): < 5B8235178DF99FA307430C088F81746606638A0B > src hash (MD5): < 776DF8B4D2589E21DEBCF589EDC16D78 > 503808 total sectors (257949696 bytes) Model (CF) serial # () N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 778135908 1141509631 0357/116/40 0357/032/45 Boot 72 other 2 P 168689522 1936028240 0288/115/43 0367/114/50 Boot 65 other 3 P 1869881465 1936028192 0366/032/33 0357/032/43 Boot 79 other 4 P 2885681152 000055499 0372/097/50 0000/010/00 Boot 0D other 1 1141509631 sectors 584452931072 bytes 2 1936028240 sectors 991246458880 bytes 3 1936028192 sectors 991246434304 bytes 4 000055499 sectors 28415488 bytes
Log Highlights:	====== Tool Settings: ====== Lg-XferBlk yes dst-port I ====== Image file segments ====== 1 257949696 May 26 12:26 07cf.001 2 6039 May 26 12:57 07cf.txt ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Capture Fragment size: 4096MB Hashing: SHA1 Suspect drive's Identity Model: LEXAR ATA FLASH Serial Number: 11524642039199094054 Capacity: 246MB, 503808 sectors Block size: 512

Test Case DA-07-CF Image MASSter Solo-3 Software Version 2.0.10.23f	
	====== Hash of Acquired Data ====== SHA1: 5B823517 8DF99FA3 07430C08 8F817466 06638A0B ====== Source drive rehash ====== Rehash (SHA1) of source: 5B8235178DF99FA307430C088F81746606638A0B
Results:	

Assertion & Expected Result	Actual Result
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-05 An image is created on file system type FS.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-01 Image file is complete and accurate.	as expected
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis:	Expected results achieved

5.2.19 DA-08-ATA28

Test Case DA-08-ATA28 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-08 Acquire a physical drive with hidden sectors to an image file.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-05 If image file creation is specified, the tool creates an image file on file system type FS. AM-06 All visible sectors are acquired from the digital source. AM-07 All hidden sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool. AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Wed May 26 17:48:19 2010
Drives:	src(42) dst (none) other (3B-SATA)
Source Setup:	src hash (SHA1): < 5A75399023056E0EB905082B35F8FAA1DB049229 > src hash (MD5): < F4B9AAB24554EEEB2A962BDA554A9252 > 78165360 total sectors (40020664320 bytes) 65534/015/63 (max cyl/hd values) 65535/016/63 (number of cyl/hd) IDE disk: Model (WDC WD400JB-00JJC0) serial # (WD-WCAMA3958512) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 070348572 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 070348572 sectors 36018468864 bytes HPA created BIOS, XBIOS and Direct disk geometry Reporter (BXDR) BXDR 128 /S70000000 /P /fbxdrlog.txt Setting Maximum Addressable Sector to 70000000 MAS now set to 70000000 Hashes with HPA in place md5:9BF3C3DEADE47056A1DDC073C5F6B2E2 sha1:D76F909482B00767B62C295CADE202F92E61CD2E
Log Highlights:	====== Tool Settings: ====== Lg-XferBlk yes dst-port I ====== Image file segments ====== 1 4289724416 08ata28.001 2 4289724416 08ata28.002 3 4289724416 08ata28.003 . . . 8 4289724416 08ata28.008 9 4289724416 08ata28.009 10 1413144576 08ata28.010 ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21

Test Case DA-08-ATA28 Image MASSter Solo-3 Software Version 2.0.10.23f

```
Firmware Version 5.0.4.5
SCSI Module F/W:   1.80
Serial #: 32520
Operational mode: LinuxDD Capture
Fragment size: 4096MB
Hashing: SHA1
Suspect drive's Identity
Model: WDC WD400JB-00JJC0
Serial Number: WD-WCAMA3958512
Capacity: 34179MB, 70000001 sectors
Block size: 512

====== Hash of Acquired Data ======
SHA1: 5A753990 23056E0E B905082B 35F8FAA1 DB049229

====== Source drive rehash ======
Rehash (SHA1) of source: D76F909482B00767B62C295CADE202F92E61CD2E
```

Results:

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-05 An image is created on file system type FS.	as expected
AM-06 All visible sectors acquired.	as expected
AM-07 All hidden sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-01 Image file is complete and accurate.	as expected
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results achieved

5.2.20 DA-08-DCO

Test Case DA-08-DCO Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-08 Acquire a physical drive with hidden sectors to an image file.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-05 If image file creation is specified, the tool creates an image file on file system type FS. AM-06 All visible sectors are acquired from the digital source. AM-07 All hidden sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool. AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Thu Jun 3 11:29:33 2010
Drives:	src(15-SATA) dst (none) other (3D-SATA)
Source Setup:	src hash (SHA1): < 76B22DDE84CE61F090791DDBB79057529AAF00E1 > src hash (MD5): < 9B4A9D124107819A9CE6F253FE7DC675 > 156301488 total sectors (80026361856 bytes) Model (0JD-00HKA0) serial # (WD-WMAJ91513490) DCO Created with Maximum LBA Sectors = 140,000,000 Hashes with DCO in place: md5: E5F8B277A39ED0F49794E9916CD62DD9 sha1: AC64CF1B3736BB2FE40C14D871E6F207BC432C2F
Log Highlights:	====== Tool Settings: ====== Lg-XferBlk yes dst-port I ====== Image file segments ====== 1 4289724416 08dco.001 2 4289724416 08dco.002 3 4289724416 08dco.003 . . . 17 4289724416 08dco.017 18 4289724416 08dco.018 19 2811322368 08dco.019 ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Capture Fragment size: 4096MB Hashing: SHA1 Suspect drive's Identity Model: WDC WD800JD-00HKA0 Serial Number: WD-WMAJ91513490 Capacity: 76319MB, 156301488 sectors Block size: 512 ====== Hash of Acquired Data ======

Test Case DA-08-DCO Image MASSter Solo-3 Software Version 2.0.10.23f	
	SHA1: 76B22DDE 84CE61F0 90791DDB B7905752 9AAF00E1 ====== Source drive rehash ====== Rehash (SHA1) of source: 76B22DDE84CE61F090791DDBB79057529AAF00E1
Results:	

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-05 An image is created on file system type FS.	as expected
AM-06 All visible sectors acquired.	as expected
AM-07 All hidden sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-01 Image file is complete and accurate.	as expected
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis:	Expected results achieved

5.2.21 DA-08-SATA48

Test Case DA-08-SATA48 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-08 Acquire a physical drive with hidden sectors to an image file.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-05 If image file creation is specified, the tool creates an image file on file system type FS. AM-06 All visible sectors are acquired from the digital source. AM-07 All hidden sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool. AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Wed Jun 2 10:03:14 2010
Drives:	src(1E-SATA) dst (none) other (3B-SATA)
Source Setup:	src hash (SHA1): < 3E7439D9E99ACD030B969C1BE5B1430BF7183573 > src hash (MD5): < 8E1CF5E20E86362E0EACF12EDDEF42A6 > 625142448 total sectors (320072933376 bytes) 38912/254/63 (max cyl/hd values) 38913/255/63 (number of cyl/hd) Model (ST3320620AS) serial # (5QF3X4F6) HPA created HPA Created with Maximum LBA Sectors = 560,000,000 Hashes with HPA in place md5: 3655FA5086B6864154898533DFAE2442 sha1: EB1045B57DE7CDA28FE9504E3FA238D0B5DBC587
Log Highlights:	====== Tool Settings: ====== Lg-XferBlk yes dst-port I ====== Image file segments ====== 1 4289724416 08sata48.001 2 4289724416 08sata48.002 3 4289724416 08sata48.003 . . . 73 4289724416 08sata48.073 74 4289724416 08sata48.074 75 2633326592 08sata48.075 ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Capture Fragment size: 4096MB Hashing: SHA1 Suspect drive's Identity Model: ST3320620AS Serial Number: 5QF3X4F6

Test Case DA-08-SATA48 Image MASSter Solo-3 Software Version 2.0.10.23f	
	Capacity: 273437MB, 560000001 sectors Block size: 512 ====== Hash of Acquired Data ====== SHA1: 3E7439D9 E99ACD03 0B969C1B E5B1430B F7183573 ====== Source drive rehash ====== Rehash (SHA1) of source: 3E7439D9E99ACD030B969C1BE5B1430BF7183573
Results:	

Assertion & Expected Result	Actual Result
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-05 An image is created on file system type FS.	as expected
AM-06 All visible sectors acquired.	as expected
AM-07 All hidden sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-01 Image file is complete and accurate.	as expected
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis:	Expected results achieved

5.2.22 DA-09-CONTINUE

Test Case DA-09-CONTINUE Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-09 Acquire a digital source that has at least one faulty data sector.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-05 If image file creation is specified, the tool creates an image file on file system type FS. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AM-09 If unresolved errors occur while reading from the selected digital source, the tool notifies the user of the error type and location within the digital source. AM-10 If unresolved errors occur while reading from the selected digital source, the tool uses a benign fill in the destination object in place of the inaccessible data. AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool. AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Mon Jun 7 17:05:34 2010
Drives:	src(ED-BAD-CPR4) dst (49-SATA) other (ED-REF-CPR4)
Source Setup:	No before hash for ED-BAD-CPR4 Known Bad Sector List for ED-BAD-CPR4 Manufacturer: Maxtor Model: DiamondMax Plus 9 Serial Number: Y23EGSJE Capacity: 60GB Interface: SATA 35 faulty sectors 6160328, 6160362, 10041157, 10041995, 10118634, 10209448, 11256569, 14115689, 14778391, 14778392, 14778449, 14778479, 14778517, 14778518, 14778519, 14778520, 14778521, 14778551, 14778607, 14778626, 14778627, 14778650, 14778668, 14778669, 14778709, 14778727, 14778747, 14778772, 14778781, 14778870, 14778949, 14778953, 14779038, 14779113, 14779321
Log Highlights:	====== Destination drive setup ====== 156301488 sectors wiped with 49 ====== Comparison of original to clone drive ====== Sectors compared: 120103200 Sectors match: 120103165 Sectors differ: 35 Bytes differ: 17885 Diffs range 6160328, 6160362, 10041157, 10041995, 10118634, 10209448, 11256569, 14115689, 14778391-14778392, 14778449, 14778479, 14778517-14778521, 14778551, 14778607, 14778626-14778627, 14778650, 14778668-14778669, 14778709, 14778727, 14778747, 14778772, 14778781, 14778870, 14778949, 14778953, 14779038, 14779113, 14779321 Source (120103200) has 36198288 fewer sectors than destination (156301488) Zero fill: 0 Src Byte fill (ED): 0

Test Case DA-09-CONTINUE Image MASSter Solo-3 Software Version 2.0.10.23f

```
Dst Byte fill (49): 36198288
Other fill:                0
Other no fill:             0
Zero fill range:
Src fill range:
Dst fill range:  120103200-156301487
Other fill range:
Other not filled range:
0 source read errors, 0 destination read errors


====== Tool Settings: ======
Lg-XferBlk yes
dst-interface SATA28
dst-port I

====== Extract from IM Solo III audit01.txt file ======
Unit Settings . . .
Software Version 2.0.10.23f
Built on: Jul 30 2009 15:23:21
Firmware Version 5.0.4.5
SCSI Module F/W:   1.80
Serial #: 32520
Operational mode: SING Capture
Hashing: SHA1
Suspect drive's Identity
Model: Maxtor 6Y060M0
Serial Number: Y23EGSJE
Capacity: 58644MB, 120103200 sectors
Block size: 512

====== Hash of Acquired Data ======
SHA1: 3DE5F1F5 4EA84BC8 7479DCA2 D880635D 98BDA5D5
Suspect: failed read at LBA=6160328
Suspect: failed read at LBA=6160362
Suspect: failed read at LBA=10041157
Suspect: failed read at LBA=10041995
Suspect: failed read at LBA=10118634
Suspect: failed read at LBA=10209448
    . . .
Suspect: failed read at LBA=14778870
Suspect: failed read at LBA=14778949
Suspect: failed read at LBA=14778953
Suspect: failed read at LBA=14779038
Suspect: failed read at LBA=14779113
Suspect: failed read at LBA=14779321
35 Read errors
====== Summary of Sectors not acquired ======
3 different run lengths observed in 28 runs
24 runs of length 1
3 runs of length 2
1 runs of length 5
35 sectors differ
    35 zero filled and 0 varying non-zero filled
```

Results:

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-05 An image is created on file system type FS.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AM-09 Error logged.	as expected
AM-10 Benign fill replaces inaccessible sectors.	as expected
AO-01 Image file is complete and accurate.	as expected
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected

Test Case DA-09-CONTINUE Image MASSter Solo-3 Software Version 2.0.10.23f		
	AO-24 Source is unchanged by acquisition.	not checked
Analysis:	Expected results achieved	

5.2.23 DA-09-PROMPT

Test Case DA-09-PROMPT Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-09 Acquire a digital source that has at least one faulty data sector.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-05 If image file creation is specified, the tool creates an image file on file system type FS. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AM-09 If unresolved errors occur while reading from the selected digital source, the tool notifies the user of the error type and location within the digital source. AM-10 If unresolved errors occur while reading from the selected digital source, the tool uses a benign fill in the destination object in place of the inaccessible data. AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool. AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Tue Jun 8 15:00:41 2010
Drives:	src(ED-BAD-CPR4) dst (50-SATA) other (ED-REF-CPR4)
Source Setup:	No before hash for ED-BAD-CPR4 Known Bad Sector List for ED-BAD-CPR4 Manufacturer: Maxtor Model: DiamondMax Plus 9 Serial Number: Y23EGSJE Capacity: 60GB Interface: SATA 35 faulty sectors 6160328, 6160362, 10041157, 10041995, 10118634, 10209448, 11256569, 14115689, 14778391, 14778392, 14778449, 14778479, 14778517, 14778518, 14778519, 14778520, 14778521, 14778551, 14778607, 14778626, 14778627, 14778650, 14778668, 14778669, 14778709, 14778727, 14778747, 14778772, 14778781, 14778870, 14778949, 14778953, 14779038, 14779113, 14779321
Log Highlights:	====== Destination drive setup ====== 156301488 sectors wiped with 50 ====== Comparison of original to clone drive ====== Sectors compared: 120103200 Sectors match: 120103165 Sectors differ: 35 Bytes differ: 17885 Diffs range 6160328, 6160362, 10041157, 10041995, 10118634, 10209448, 11256569, 14115689, 14778391-14778392, 14778449, 14778479, 14778517-14778521, 14778551, 14778607, 14778626-14778627, 14778650, 14778668-14778669, 14778709, 14778727, 14778747, 14778772, 14778781, 14778870, 14778949, 14778953, 14779038, 14779113, 14779321 Source (120103200) has 36198288 fewer sectors than destination (156301488) Zero fill: 0 Src Byte fill (ED): 0

Test Case DA-09-PROMPT Image MASSter Solo-3 Software Version 2.0.10.23f

```
Dst Byte fill (50): 36198288
Other fill:                0
Other no fill:             0
Zero fill range:
Src fill range:
Dst fill range:  120103200-156301487
Other fill range:
Other not filled range:
0 source read errors, 0 destination read errors


====== Tool Settings: ======
Lg-XferBlk yes
dst-interface SATA28
dst-port I

====== Extract from IM Solo III audit01.txt file ======
Unit Settings . . .
Software Version 2.0.10.23f
Built on: Jul 30 2009 15:23:21
Firmware Version 5.0.4.5
SCSI Module F/W:   1.80
Serial #: 32520
Operational mode: SING Capture
Hashing: SHA1
Suspect drive's Identity
Model: Maxtor 6Y060M0
Serial Number: Y23EGSJE
Capacity: 58644MB, 120103200 sectors
Block size: 512

====== Hash of Acquired Data ======
SHA1: 3DE5F1F5 4EA84BC8 7479DCA2 D880635D 98BDA5D5
Suspect: failed read at LBA=6160328
Suspect: failed read at LBA=6160362
Suspect: failed read at LBA=10041157
Suspect: failed read at LBA=10041995
Suspect: failed read at LBA=10118634
Suspect: failed read at LBA=10209448
    . . .
Suspect: failed read at LBA=14778870
Suspect: failed read at LBA=14778949
Suspect: failed read at LBA=14778953
Suspect: failed read at LBA=14779038
Suspect: failed read at LBA=14779113
Suspect: failed read at LBA=14779321
35 Read errors
====== Summary of Sectors not acquired ======
3 different run lengths observed in 28 runs
24 runs of length 1
3 runs of length 2
1 runs of length 5
35 sectors differ
    35 zero filled and 0 varying non-zero filled
```

Results:

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-05 An image is created on file system type FS.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AM-09 Error logged.	as expected
AM-10 Benign fill replaces inaccessible sectors.	as expected
AO-01 Image file is complete and accurate.	as expected
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected

Test Case DA-09-PROMPT Image MASSter Solo-3 Software Version 2.0.10.23f		
	AO-24 Source is unchanged by acquisition.	not checked
Analysis:	Expected results achieved	

5.2.24 DA-09-SKIPBLOCK

Test Case DA-09-SKIPBLOCK Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-09 Acquire a digital source that has at least one faulty data sector.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-05 If image file creation is specified, the tool creates an image file on file system type FS. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AM-09 If unresolved errors occur while reading from the selected digital source, the tool notifies the user of the error type and location within the digital source. AM-10 If unresolved errors occur while reading from the selected digital source, the tool uses a benign fill in the destination object in place of the inaccessible data. AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool. AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Fri Jun 4 13:01:24 2010
Drives:	src(ED-BAD-CPR3) dst (04-SATA) other (ED-REF-CPR1)
Source Setup:	No before hash for ED-BAD-CPR3 Known Bad Sector List for ED-CPR-BAD-3 Manufacturer: Maxtor Model: DiamondMax Plus 9 Serial Number: Y239EQSE Capacity: 60GB Interface: PATA 398 bad sectors 67407, 68223, 688162, 1769014, 1772576, 2215215, 2215216, 2664136, 3155361, 3155362, 4768530, 4768531, 4769394, 4772924, 4772925, 8045038, 8045039, 8045854, 8045855, 8049417, 8389861, 8744901, 9125736, 9126552, 9129116, 9191655, 9195963, 9199526, 11269881, 11269882, 11980920, 12842146, 12842147, 12842148, 12992812, 12994673, 12994674, 13243497, 13243498, 13284319, 13284320, 13287790, 15045897, 17124920, 17155941, 17349716, 17350516, 17834576, 17835376, 17838847, 18709199, 18709200, 19141687, 19145086, 19707761, 19707762, 20395235, 21120528, 21302675, 23029932, 23030717, 23033156, 23543974, 24026977, 24030376, 24267176, 24268112, 24894528, 25124195, 25126569, 25128391, 25907287, 27473160, 27729399, 28069828, 28070647, 28070648, 28074024, 28114008, 30169624, 30169625, 30172937, 30714787, 31384365, 32861553, 34743165, 34812327, 35486209, 35488589, 36119007, 36180825, 36181587, 38559078, 38562283, 38563068, 38565313, 38567058, 38569303, 38570088, 38573293, 38574078, 38577283, 38578068, 38580313, 38581098, 38584303, 38585088, 38588293, 38589078, 38591323, 38593068, 38595313, 38596098, 38599303, 38600088, 38603293, 38604078,

Test Case DA-09-SKIPBLOCK Image MASSter Solo-3 Software Version 2.0.10.23f	
	38606323, 38620141, 38620881, 38897305, 38899050, 42094511, 42465442, 43183880, 43184665, 43260160, 43394835, 43398070, 43398810, 43402046, 43402786, 43750978, 44800409, 44800410, 44800411, 44973682, 44974467, 45356362, 45357102, 46257820, 47165564, 47321156, 47321157, 47323327, 47323328, 47494761, 47495478, 47726421, 48341780, 48734094, 48734095, 50134562, 51585137, 51867698, 52360449, 52648662, 53528122, 54213909, 54264295, 54266407, 54267140, 54270148, 54270880, 54270881, 54430365, 54782902, 54783599, 55209653, 55209654, 55349728, 56318241, 56318242, 56318939, 57243691, 57244423, 57244424, 57244425, 57761985, 57849957, 57851508, 57868205, 58164568, 58504322, 58620884, 58620885, 58952200, 58952898, 58955929, 58955930, 58956627, 58958805, 59197526, 59197527, 60436819, 60437552, 61409236, 61409969, 61412977, 61413709, 61416717, 63727308, 63727309, 63738793, 63739500, 63920170, 64076240, 64329170, 64329171, 64593949, 64593950, 66748349, 66920640, 67531748, 68006944, 68087366, 68101930, 68102636, 68105536, 68385185, 68385186, 68385892, 69948427, 69948428, 69949099, 69949100, 71112921, 71112922, 71115741, 71116391, 71653802, 72546138, 72546819, 73235739, 73826238, 73826239, 74203813, 74203814, 74204463, 74207283, 74295784, 74297808, 74299253, 74301277, 74445185, 74448004, 74448005, 74448654, 74448655, 74450678, 74450679, 74452124, 74454148, 74454798, 74457617, 74457618, 74713761, 74870301, 77873655, 79804018, 81355285, 83602337, 83724839, 83727555, 83728183, 85378553, 85668102, 85668103, 85670698, 86204756, 86204757, 86205384, 86205385, 86246103, 86247969, 86714200, 86714201, 86714828, 86714829, 87223888, 87223889, 87225694, 87225695, 87266653, 87266654, 87573245, 88893525, 89003121, 89640885, 90666380, 90666381, 91745469, 92792331, 92792332, 93141136, 93142907, 93143472, 93145934, 93145935, 93146499, 93146500, 93726751, 94384947, 94384948, 94386718, 96059934, 97632231, 97788697, 98668702, 98668703, 98668704, 101185055, 101543106, 101543107, 102185876, 102185877, 102186413, 102906956, 103050553, 103051745, 103053424, 103053425, 103053426, 103053961, 103056296, 103056833, 103682376, 103781915, 103783171, 103783172, 103784796, 103784797, 103836527, 103836528, 104514100, 104514101, 104516436, 104516972, 104985790, 105053945, 105122201, 105561193, 105561194, 106184000, 106844041, 107791465, 107791466, 108072205, 108074371, 108074898, 108077063, 108077590, 108077591, 108077592, 108127698, 108129864, 109183361, 110705590, 110706117, 110708283, 110708810, 110710975, 110710976, 110779861, 110780363, 111232403, 111234431, 111812565, 111812566, 111812567, 111813990, 111813991, 112514199, 113839689, 113839690, 114291183, 114291654, 114293697, 114776038, 114776531, 114777956, 115004584, 115005077, 115007105, 115379975, 115722901, 115723372, 115903726, 115930248, 115930719, 118133584, 118309687, 118311574, 119469050, 119469504, 119471378, 119471379, 119717829
Log Highlights:	====== Destination drive setup ====== 156301488 sectors wiped with 4 ====== Comparison of original to clone drive ====== Sectors compared: 120103200 Sectors match: 120020767 Sectors differ: 82433 Bytes differ: 42123263

Test Case DA-09-SKIPBLOCK Image MASSter Solo-3 Software Version 2.0.10.23f	
	Diffs range 67328-67583, 68096-68351, 688128-688383, 1768960-1769215, 1772544-1772799, 2215168-2215423, 2664136, 3155200-3155455, 4768512-4768767, 4769280-4769535, 4772864-4773119, 8044800-8045055, 8045824-8046079, 8049408-8049663, 8389632-8389887, 8744704-8744959, 9125632-9125887, 9126400-9126655, 9128960-9129215, 9191424-9191679, 9195776-9196031, 9199360-9199615, 11269632-11269887, 11980800-11981055, 12841984-12842239, 12992768-12993023, 12994560-12994815, 13243392-13243647, 13284096-13284351, 13287680-13287935, 15045888-15046143, 17124864-17125119, 17155840-17156095, 17349632-17349887, 17350400-17350655, 17834496-17834751, 17835264-17835519, 17838592-17838847, 18708992-18709247, 19141632-19141887, 19144960-19145215, 19707648-19707903, 20395008-20395263, 21120512-21120767, 21302528-21302783, 23029760-23030015, 23030528-23030783, 23033088-23033343, 23543808-23544063, 24026880-24027135, 24030208-24030463, 24267008-24267263, 24268032-24268287, 24894464-24894719, 25124096-25124351, 25126400-25126655, 25128192-25128447, 25907200-25907455, 27473152-27473407, 27729152-27729407, 28069632-28069887, 28070400-28070655, 28073984-28074239, 28113920-28114175, 30169600-30169855, 30172928-30173183, 30714624-30714879, 31384320-31384575, 32861440-32861695, 34743040-34743295, 34812160-34812415, 35486208-35486463, 35488512-35488767, 36118784-36119039, 36180736-36180991, 36181504-36181759, 38558976-38559231, 38562048-38562303, 38562816-38563071, 38565120-38565375, 38566912-38567167, 38569216-38569471, 38569984-38570239, 38573056-38573311, 38573824-38574079, 38577152-38577407, 38577920-38578175, 38580224-38580479, 38580992-38581247, 38584064-38584319, 38585088-38585343, 38588160-38588415, 38588928-38589183, 38591232-38591487, 38593024-38593279, 38595072-38595327, 38596096-38596351, 38599168-38599423, 38599936-38600191, 38603264-38603519, 38604032-38604287, 38606080-38606335, 38619904-38620159, 38620672-38620927, 38897152-38897407, 38898944-38899199, 42094336-42094591, 42465280-42465535, 43183872-43184127, 43184640-43184895, 43260160-43260415, 43394816-43395071, 43397888-43398143, 43398656-43398911, 43401984-43402239, 43402752-43403007, 43750912-43751167, 44800256-44800511, 44973568-44973823, 44974336-44974591, 45356288-45356543, 45357056-45357311, 46257664-46257919, 47165440-47165695, 47321088-47321343, 47323136-47323391, 47494656-47494911, 47495424-47495679, 47726336-47726591, 48341760-48342015, 48733952-48734207, 50134528-50134783, 51585024-51585279, 51867648-51867903, 52360448-52360703, 52648448-52648703, 53528064-53528319, 54213888-54214143, 54264064-54264319, 54266368-54266623, 54267136-54267391, 54269952-54270207, 54270720-54270975, 54430208-54430463, 54782720-54782975, 54783488-54783743, 55209472-55209727, 55349504-55349759, 56318208-56318463, 56318720-56318975, 57243648-57243903, 57244416-57244671, 57761792-57762047, 57849856-57850111, 57851392-57851647, 57868032-57868287, 58164480-58164735, 58504192-58504447, 58620672-58620927, 58952192-58952447, 58952704-58952959, 58955776-58956031, 58956544-58956799, 58958592-58958847, 59197440-59197695, 60436736-60436991, 60437504-60437759, 61409024-61409279, 61409792-61410047, 61412864-61413119, 61413632-61413887, 61416704-61416959, 63727104-63727359, 63738624-63738879, 63739392-63739647, 63920128-63920383, 64076032-64076287, 64328960-64329215, 64593920-64594175, 66748160-66748415, 66920448-66920703, 67531520-67531775, 68006912-68007167, 68087296-68087551, 68101888-68102143, 68102400-68102655, 68105472-68105727, 68385024-68385279, 68385792-68386047, 69948416-69948671, 69948928-69949183, 71112704-71112959, 71115520-71115775, 71116288-71116543, 71653632-71653887, 72546048-72546303, 72546816-72547071, 73235712-73235967, 73826048-73826303, 74203648-74203903, 74204416-74204671, 74207232-74207487, 74295552-74295807, 74297600-74297855, 74299136-74299391, 74301184-74301439, 74445056-74445311, 74447872-74448127, 74448640-74448895, 74450432-74450687, 74451968-74452223,

Test Case DA-09-SKIPBLOCK Image MASSter Solo-3 Software Version 2.0.10.23f	
	74454016-74454271, 74454784-74455039, 74457600-74457855, 74713600-74713855, 74870272-74870527, 77873408-77873663, 79803904-79804159, 81355264-81355519, 83602176-83602431, 83724800-83725055, 83727360-83727615, 83728128-83728383, 85378304-85378559, 85668096-85668351, 85670656-85670911, 86204672-86204927, 86205184-86205439, 86245888-86246143, 86247936-86248191, 86714112-86714367, 86714624-86714879, 87223808-87224063, 87225600-87225855, 87266560-87266815, 87572992-87573247, 88893440-88893695, 89003008-89003263, 89640704-89640959, 90666240-90666495, 91745280-91745535, 92792320-92792575, 93140992-93141247, 93142784-93143039, 93143296-93143551, 93145856-93146111, 93146368-93146623, 93726720-93726975, 94384896-94385151, 94386688-94386943, 96059904-96060159, 97632000-97632255, 97788672-97788927, 98668544-98668799, 101185024-101185279, 101542912-101543167, 102185728-102185983, 102186240-102186495, 102906880-102907135, 103050496-103050751, 103051520-103051775, 103053312-103053567, 103053824-103054079, 103056128-103056383, 103056640-103056895, 103682304-103682559, 103781888-103782143, 103783168-103783423, 103784704-103784959, 103836416-103836671, 104514048-104514303, 104516352-104516607, 104516864-104517119, 104985600-104985855, 105053696-105053951, 105122048-105122303, 105561088-105561343, 106183936-106184191, 106843904-106844159, 107791360-107791615, 108072192-108072447, 108074240-108074495, 108074752-108075007, 108077056-108077311, 108077568-108077823, 108127488-108127743, 108129792-108130047, 109183232-109183487, 110705408-110705663, 110705920-110706175, 110708224-110708479, 110708736-110708991, 110710784-110711039, 110779648-110779903, 110780160-110780415, 111232256-111232511, 111234304-111234559, 111812352-111812607, 111813888-111814143, 112514048-112514303, 113839616-113839871, 114290944-114291199, 114291456-114291711, 114293504-114293759, 114775808-114776063, 114776320-114776575, 114777856-114778111, 115004416-115004671, 115004928-115005183, 115006976-115007231, 115379968-115380223, 115722752-115723007, 115723264-115723519, 115903488-115903743, 115930112-115930367, 115930624-115930879, 118133504-118133759, 118309632-118309887, 118311424-118311679, 119468800-119469055, 119469312-119469567, 119471360-119471615, 119717632-119717887 Source (120103200) has 36198288 fewer sectors than destination (156301488) Zero fill: 0 Src Byte fill (ED): 0 Dst Byte fill (04): 36198288 Other fill: 0 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: 120103200-156301487 Other fill range: Other not filled range: 0 source read errors, 0 destination read errors ====== Tool Settings: ====== Lg-XferBlk yes dst-interface SATA28 dst-port I ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: SING Capture Hashing: SHA1 Suspect drive's Identity Model: Maxtor 6Y060L0 Serial Number: Y239EQSE Capacity: 58644MB, 120103200 sectors

Test Case DA-09-SKIPBLOCK Image MASSter Solo-3 Software Version 2.0.10.23f

```
Block size: 512

====== Hash of Acquired Data ======
SHA1: 87EDC48D D4DF5663 BBCC9712 7B15E100 BF0740B7
Suspect: failed read at LBA=67407
Suspect: failed read at LBA=68223
Suspect: failed read at LBA=688162
Suspect: failed read at LBA=1769014
Suspect: failed read at LBA=1772576
Suspect: failed read at LBA=2215215
    . . .
Suspect: failed read at LBA=118309687
Suspect: failed read at LBA=118311574
Suspect: failed read at LBA=119469050
Suspect: failed read at LBA=119469504
Suspect: failed read at LBA=119471378
Suspect: failed read at LBA=119717829
323 Read errors
====== Summary of Sectors not acquired ======
2 different run lengths observed in 323 runs
1 runs of length 1
322 runs of length 256
82433 sectors differ
    82433 zero filled and 0 varying non-zero filled
```

Results:

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-05 An image is created on file system type FS.	as expected
AM-06 All visible sectors acquired.	some sectors skipped
AM-08 All sectors accurately acquired.	as expected
AM-09 Error logged.	as expected
AM-10 Benign fill replaces inaccessible sectors.	as expected
AO-01 Image file is complete and accurate.	as expected
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	not checked

Analysis: Expected results not achieved

5.2.25 DA-13

Test Case DA-13 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-13 Create an image file where there is insufficient space on a single volume, and use destination device switching to continue on another volume.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-05 If image file creation is specified, the tool creates an image file on file system type FS. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool. AO-04 If the tool is creating an image file and there is insufficient space on the image destination device to contain the image file, the tool shall notify the user. AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size. AO-10 If there is insufficient space to contain all files of a multi-file image and if destination device switching is supported, the image is continued on another device. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Wed Jun 9 15:59:55 2010
Drives:	src(01-IDE) dst (none) other (18-SATA)
Source Setup:	src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 > src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E > 78165360 total sectors (40020664320 bytes) Model (0BB-00JHC0) serial # (WD-WMAMC74171) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended 15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027744192 sectors 14205026304 bytes
Log Highlights:	====== Tool Settings: ====== Lg-XferBlk no dst-port I

Test Case DA-13 Image MASSter Solo-3 Software Version 2.0.10.23f

```
====== Image file segments (First destination) ======
     1  681574400 13.001
     2  681574400 13.002
     3  681574400 13.003
   . . .
    55  681574400 13.055
    56  681574400 13.056
    57  480772096 13.057

====== Image file segments (Final destination) ======
     1  681574400 Jun 10 08:50 13.058
     2  681574400 Jun 10 08:52 13.059
     3    8577024 Jun 10 08:53 13.060
     4       2257 Jun 10 08:53 13.txt
====== Extract from IM Solo III audit01.txt file ======
Unit Settings . . .
Software Version 2.0.10.23f
Built on: Jul 30 2009 15:23:21
Firmware Version 5.0.4.5
SCSI Module F/W:   1.80
Serial #: 32520
Operational mode: LinuxDD Capture
Fragment size: 655MB
Hashing: SHA1
Suspect drive's Identity
Model: WDC WD400BB-00JHC0
Serial Number: WD-WMAMC7417100
Capacity: 38166MB, 78165360 sectors
Block size: 512

====== Hash of Acquired Data ======
SHA1: FE2C0A75 BBEE55EB 55B2C577 4758B6D1 F0D6FB99

====== Source drive rehash ======
Rehash (SHA1) of source: A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9
```

Results:

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-05 An image is created on file system type FS.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-01 Image file is complete and accurate.	as expected
AO-04 User notified if space exhausted.	as expected
AO-05 Multifile image created.	as expected
AO-10 Image file continued on new device.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	Reported hash is incorrect
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results not achieved

5.2.26 DA-14-ATA28

Test Case DA-14-ATA28 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-14 Create an unaligned clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	brl
Test Host:	none
Test Date:	Thu Jun 24 11:49:19 2010
Drives:	src(01-IDE) dst (FD) other (3B-SATA)
Source Setup:	src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 > src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E > 78165360 total sectors (40020664320 bytes) Model (0BB-00JHC0) serial # (WD-WMAMC74171) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended 15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027744192 sectors 14205026304 bytes
Log Highlights:	====== Destination drive setup ====== 90069840 sectors wiped with FD ====== Comparison of original to clone drive ====== Sectors compared: 78165360 Sectors match: 78165360 Sectors differ: 0 Bytes differ: 0 Diffs range Source (78165360) has 11904480 fewer sectors than destination (90069840) Zero fill: 0 Src Byte fill (01): 0 Dst Byte fill (FD): 11904480 Other fill: 0 Other no fill: 0 Zero fill range:

Test Case DA-14-ATA28 Image MASSter Solo-3 Software Version 2.0.10.23f	
	Src fill range: Dst fill range: 78165360-90069839 Other fill range: Other not filled range: 0 source read errors, 0 destination read errors ====== Tool Settings: ====== Lg-XferBlk yes dst-interface ata28 dst-port I ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Restore Hashing: SHA1 Suspect drive's Identity Model: Hitachi HDS721010KLA330 Serial Number: GTH000PAH0LW8H Capacity: 953869MB, 1953525168 sectors Block size: 512 ====== Hash of Acquired Data ====== SHA1: A48BB566 5D6DC57C 22DB68E2 F723DA9A A8DF82B9
Results:	
Analysis:	Expected results achieved

Assertion & Expected Result	Actual Result
AM-03 Execution environment is XE.	as expected
AO-12 A clone is created from an image file.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-23 Logged information is correct.	as expected

5.2.27 DA-14-ATA48

Test Case DA-14-ATA48 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-14 Create an unaligned clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	brl
Test Host:	none
Test Date:	Thu Jun 17 17:25:08 2010
Drives:	src(4C) dst (1B-LAP) other (3B-SATA)
Source Setup:	src hash (SHA1): < 8FF620D2BEDCCAFE8412EDAAD56C8554F872EFBF > src hash (MD5): < D10F763B56D4CEBA2D1311C61F9FB382 > 390721968 total sectors (200049647616 bytes) 24320/254/63 (max cyl/hd values) 24321/255/63 (number of cyl/hd) IDE disk: Model (WDC WD2000JB-00KFA0) serial # (WD-WMAMR1031111) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 390700737 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 390700737 sectors 200038777344 bytes
Log Highlights:	====== Destination drive setup ====== 390721968 sectors wiped with 1B ====== Comparison of original to clone drive ====== Sectors compared: 390721968 Sectors match: 390721968 Sectors differ: 0 Bytes differ: 0 Diffs range 0 source read errors, 0 destination read errors ====== Tool Settings: ====== Lg-XferBlk yes dst-interface sata48 dst-port I ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Restore Hashing: SHA1 Suspect drive's Identity Model: Hitachi HDS721010KLA330 Serial Number: GTH000PAH0LW8H Capacity: 953869MB, 1953525168 sectors Block size: 512 ====== Hash of Acquired Data ====== SHA1: 8FF620D2 BEDCCAFE 8412EDAA D56C8554 F872EFBF

Test Case DA-14-ATA48 Image MASSter Solo-3 Software Version 2.0.10.23f	
Results:	

Assertion & Expected Result	**Actual Result**
AM-03 Execution environment is XE.	as expected
AO-12 A clone is created from an image file.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-23 Logged information is correct.	as expected

Analysis:	Expected results achieved

5.2.28 DA-14-CF

Test Case DA-14-CF Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-14 Create an unaligned clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	brl
Test Host:	none
Test Date:	Wed Jun 30 10:29:08 2010
Drives:	src(C1-CF) dst (C2-CF) other (3B-SATA)
Source Setup:	src hash (SHA256): < C7CF0218222DF80D5316511D6814266C7FA507C13F795AD3D323BB73C1590D80 > src hash (SHA1): < 5B8235178DF99FA307430C088F81746606638A0B > src hash (MD5): < 776DF8B4D2589E21DEBCF589EDC16D78 > 503808 total sectors (257949696 bytes) Model (CF) serial # () N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 778135908 1141509631 0357/116/40 0357/032/45 Boot 72 other 2 P 168689522 1936028240 0288/115/43 0367/114/50 Boot 65 other 3 P 1869881465 1936028192 0366/032/33 0357/032/43 Boot 79 other 4 P 2885681152 000055499 0372/097/50 0000/010/00 Boot 0D other 1 1141509631 sectors 584452931072 bytes 2 1936028240 sectors 991246458880 bytes 3 1936028192 sectors 991246434304 bytes 4 000055499 sectors 28415488 bytes
Log Highlights:	====== Destination drive setup ====== 503808 sectors wiped with C2 ====== Comparison of original to clone drive ====== Sectors compared: 503808 Sectors match: 503808 Sectors differ: 0 Bytes differ: 0 Diffs range 0 source read errors, 0 destination read errors ====== Tool Settings: ====== Lg-XferBlk yes dst-port I ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Restore Hashing: SHA1 Suspect drive's Identity Model: Hitachi HDS721010KLA330 Serial Number: GTH000PAH0LW8H Capacity: 953869MB, 1953525168 sectors Block size: 512

Test Case DA-14-CF Image MASSter Solo-3 Software Version 2.0.10.23f	
	====== Hash of Acquired Data ====== SHA1: 5B823517 8DF99FA3 07430C08 8F817466 06638A0B
Results:	

Assertion & Expected Result	**Actual Result**
AM-03 Execution environment is XE.	as expected
AO-12 A clone is created from an image file.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-23 Logged information is correct.	as expected

Analysis:	Expected results achieved

5.2.29 DA-14-ESATA

Test Case DA-14-ESATA Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-14 Create an unaligned clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	brl
Test Host:	none
Test Date:	Fri Oct 8 10:04:54 2010
Drives:	src(07-SATA) dst (1A-SATA) other (3D-SATA)
Source Setup:	src hash (SHA256): < CE65C4A3C3164D3EBAD58D33BB2415D29E260E1F88DC5A131B1C4C9C2945B8A9 > src hash (SHA1): < 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E > src hash (MD5): < 2EAF712DAD80F66E30DEA00365B4579B > 156301488 total sectors (80026361856 bytes) Model (WDC WD800JD-32HK) serial # (WD-WMAJ91510044) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 156280257 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 156280257 sectors 80015491584 bytes
Log Highlights:	====== Destination drive setup ====== 234441648 sectors wiped with 1A ====== Comparison of original to clone drive ====== Sectors compared: 156301488 Sectors match: 156301488 Sectors differ: 0 Bytes differ: 0 Diffs range Source (156301488) has 78140160 fewer sectors than destination (234441648) Zero fill: 0 Src Byte fill (07): 0 Dst Byte fill (1A): 78140160 Other fill: 0 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: 156301488-234441647 Other fill range: Other not filled range: 0 source read errors, 0 destination read errors ====== Tool Settings: ====== Lg-XferBlk no dst-interface esata dst-port I ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80

<table>
<tr><th colspan="2">Test Case DA-14-ESATA Image MASSter Solo-3 Software Version 2.0.10.23f</th></tr>
<tr><td></td><td>Serial #: 32520
Operational mode: LinuxDD Restore
Hashing: SHA1
Suspect drive's Identity
Model: ST3750330AS
Serial Number: 3QK01GB4
Capacity: 715404MB, 1465149168 sectors
Block size: 512

====== Hash of Acquired Data ======
SHA1: 655E9BDD B36A3F9C 5C4CC8BF 32B8C5B4 1AF9F52E</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AO-12 A clone is created from an image file.</td><td>as expected</td></tr>
<tr><td>AO-13 Clone created using interface AI.</td><td>as expected</td></tr>
<tr><td>AO-14 An unaligned clone is created.</td><td>as expected</td></tr>
<tr><td>AO-17 Excess sectors are unchanged.</td><td>as expected</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

5.2.30 DA-14-HOT

Test Case DA-14-HOT Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-14 Create an unaligned clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	brl
Test Host:	none
Test Date:	Thu Jun 10 09:42:26 2010
Drives:	src(01-IDE) dst (FC) other (18-SATA)
Source Setup:	src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 > src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E > 78165360 total sectors (40020664320 bytes) Model (0BB-00JHC0) serial # (WD-WMAMC74171) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended 15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027744192 sectors 14205026304 bytes
Log Highlights:	====== Destination drive setup ====== 90069840 sectors wiped with FC ====== Comparison of original to clone drive ====== Sectors compared: 78165360 Sectors match: 78165360 Sectors differ: 0 Bytes differ: 0 Diffs range Source (78165360) has 11904480 fewer sectors than destination (90069840) Zero fill: 0 Src Byte fill (01): 0 Dst Byte fill (FC): 11904480 Other fill: 0 Other no fill: 0 Zero fill range:

Test Case DA-14-HOT Image MASSter Solo-3 Software Version 2.0.10.23f	
	Src fill range: Dst fill range: 78165360-90069839 Other fill range: Other not filled range: 0 source read errors, 0 destination read errors ====== Tool Settings: ====== Lg-XferBlk yes dst-interface ata28 dst-port I ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Restore Hashing: SHA1 Suspect drive's Identity Model: WDC WD1200JD-00GBB0 Serial Number: WD-WMAES2057710 Capacity: 114473MB, 234441648 sectors Block size: 512 ====== Hash of Acquired Data ====== SHA1: FE2C0A75 BBEE55EB 55B2C577 4758B6D1 F0D6FB99
Results:	
Analysis:	Expected results not achieved

Assertion & Expected Result	Actual Result
AM-03 Execution environment is XE.	as expected
AO-12 A clone is created from an image file.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-23 Logged information is correct.	Reported hash is incorrect

5.2.31 DA-14-SATA28

Test Case DA-14-SATA28 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-14 Create an unaligned clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	brl
Test Host:	none
Test Date:	Fri Jun 25 09:53:56 2010
Drives:	src(01-SATA) dst (1B-SATA) other (3B-SATA)
Source Setup:	src hash (SHA256): < 1AA01FEAE55F5CD55185D2B1A1359B3F913E7093FEF1D1ADA220CAC456BA40D8 > src hash (SHA1): < 4951236428C36B944E62E8D65862DCBEF05F282C > src hash (MD5): < 0A49B13D91FA9DA87CEEE9D006CB6FD6 > 156301488 total sectors (80026361856 bytes) Model (0JD-32HKA0) serial # (WD-WMAJ91448529)
Log Highlights:	====== Destination drive setup ====== 234441648 sectors wiped with 1B ====== Comparison of original to clone drive ====== Sectors compared: 156301488 Sectors match: 0 Sectors differ: 156301488 Bytes differ: 74984051179 Diffs range 0-156301487 Source (156301488) has 78140160 fewer sectors than destination (234441648) Zero fill: 0 Src Byte fill (01): 0 Dst Byte fill (1B): 78140160 Other fill: 0 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: 156301488-234441647 Other fill range: Other not filled range: 0 source read errors, 0 destination read errors ====== Tool Settings: ====== Lg-XferBlk yes dst-interface sata28 dst-port I ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Restore Hashing: SHA1 Suspect drive's Identity Model: Hitachi HDS721010KLA330 Serial Number: GTH000PAH0LW8H

Test Case DA-14-SATA28 Image MASSter Solo-3 Software Version 2.0.10.23f	
	Capacity: 953869MB, 1953525168 sectors Block size: 512 ====== Hash of Acquired Data ====== SHA1: 49512364 28C36B94 4E62E8D6 5862DCBE F05F282C
Results:	

Assertion & Expected Result	Actual Result
AM-03 Execution environment is XE.	as expected
AO-12 A clone is created from an image file.	Clone does not match source
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-23 Logged information is correct.	as expected

Analysis:	Expected results not achieved

5.2.32 DA-14-SATA28-EVIDENCEII

Test Case DA-14-SATA28-EVIDENCEII Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-14 Create an unaligned clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	brl
Test Host:	none
Test Date:	Fri Jun 25 10:07:24 2010
Drives:	src(01-SATA) dst (30-SATA) other (3B-SATA)
Source Setup:	src hash (SHA256): < 1AA01FEAE55F5CD55185D2B1A1359B3F913E7093FEF1D1ADA220CAC456BA40D8 > src hash (SHA1): < 4951236428C36B944E62E8D65862DCBEF05F282C > src hash (MD5): < 0A49B13D91FA9DA87CEEE9D006CB6FD6 > 156301488 total sectors (80026361856 bytes) Model (0JD-32HKA0) serial # (WD-WMAJ91448529)
Log Highlights:	====== Destination drive setup ====== 156301488 sectors wiped with 30 ====== Comparison of original to clone drive ====== Sectors compared: 156301488 Sectors match: 156301488 Sectors differ: 0 Bytes differ: 0 Diffs range 0 source read errors, 0 destination read errors ====== Tool Settings: ====== Lg-XferBlk yes dst-interface sata28 dst-port II ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Restore Hashing: SHA1 Suspect drive's Identity Model: Hitachi HDS721010KLA330 Serial Number: GTH000PAH0LW8H Capacity: 953869MB, 1953525168 sectors Block size: 512 ====== Hash of Acquired Data ====== SHA1: 49512364 28C36B94 4E62E8D6 5862DCBE F05F282C
Results:	

Assertion & Expected Result	**Actual Result**
AM-03 Execution environment is XE.	as expected
AO-12 A clone is created from an image file.	as expected
AO-13 Clone created using interface AI.	as expected

Test Case DA-14-SATA28-EVIDENCEII Image MASSter Solo-3 Software Version 2.0.10.23f		
	AO-14 An unaligned clone is created.	as expected
	AO-17 Excess sectors are unchanged.	as expected
	AO-23 Logged information is correct.	as expected
Analysis:	Expected results achieved	

5.2.33 DA-14-SATA48

Test Case DA-14-SATA48 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-14 Create an unaligned clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	brl
Test Host:	none
Test Date:	Wed Jun 16 10:08:05 2010
Drives:	src(0D-SATA) dst (46-SATA) other (3B-SATA)
Source Setup:	src hash (SHA1): < BAAD80E8781E55F2E3EF528CA73BD41D228C1377 > src hash (MD5): < 1FA7C3CBE60EB9E89863DED2411E40C9 > 488397168 total sectors (250059350016 bytes) 30400/254/63 (max cyl/hd values) 30401/255/63 (number of cyl/hd) Model (WDC WD2500JD-22F) serial # (WD-WMAEH2678216) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 488375937 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 488375937 sectors 250048479744 bytes
Log Highlights:	====== Destination drive setup ====== 488397168 sectors wiped with 46 ====== Comparison of original to clone drive ====== Sectors compared: 488397168 Sectors match: 488397168 Sectors differ: 0 Bytes differ: 0 Diffs range 0 source read errors, 0 destination read errors ====== Tool Settings: ====== Lg-XferBlk yes dst-interface sata48 dst-port II ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Restore Hashing: SHA1 Suspect drive's Identity Model: Hitachi HDS721010KLA330 Serial Number: GTH000PAH0LW8H Capacity: 953869MB, 1953525168 sectors Block size: 512 ====== Hash of Acquired Data ====== SHA1: BAAD80E8 781E55F2 E3EF528C A73BD41D 228C1377

Test Case DA-14-SATA48 Image MASSter Solo-3 Software Version 2.0.10.23f	
Results:	

Assertion & Expected Result	**Actual Result**
AM-03 Execution environment is XE.	as expected
AO-12 A clone is created from an image file.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-23 Logged information is correct.	as expected

Analysis:	Expected results achieved

5.2.34 DA-14-SCSI

Test Case DA-14-SCSI Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-14 Create an unaligned clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	brl
Test Host:	none
Test Date:	Tue Jun 22 17:05:37 2010
Drives:	src(E0) dst (CC) other (1D)
Source Setup:	src hash (SHA1): < 4A6941F1337A8A22B10FC844B4D7FA6158BECB82 > src hash (MD5): < A97C8F36B7AC9D5233B90AC09284F938 > 17938985 total sectors (9184760320 bytes) Model (ATLAS10K2-TY092J) serial # (169028142436)
Log Highlights:	====== Destination drive setup ====== 71687370 sectors wiped with CC ====== Comparison of original to clone drive ====== Sectors compared: 17938985 Sectors match: 17938985 Sectors differ: 0 Bytes differ: 0 Diffs range Source (17938985) has 53748385 fewer sectors than destination (71687370) Zero fill: 0 Src Byte fill (E0): 0 Dst Byte fill (CC): 53748385 Other fill: 0 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: 17938985-71687369 Other fill range: Other not filled range: 0 source read errors, 0 destination read errors ====== Tool Settings: ====== Lg-XferBlk yes dst-port I ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Restore Read-Verify: Full Hashing: SHA1 Suspect drive's Identity Model: QUANTUM ATLAS10K3_18_SCA020K Serial Number: 342125051401 Capacity: 17537MB, 35916548 sectors Block size: 512

Test Case DA-14-SCSI Image MASSter Solo-3 Software Version 2.0.10.23f	
	====== Hash of Acquired Data ====== SHA1: 4A6941F1 337A8A22 B10FC844 B4D7FA61 58BECB82
Results:	

Assertion & Expected Result	**Actual Result**
AM-03 Execution environment is XE.	as expected
AO-12 A clone is created from an image file.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-17 Excess sectors are unchanged.	as expected
AO-23 Logged information is correct.	as expected

Analysis:	Expected results achieved

5.2.35 DA-17

Test Case DA-17 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-17 Create a truncated clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-19 If there is insufficient space to create a complete clone, a truncated clone is created using all available sectors of the clone device. AO-20 If a truncated clone is created, the tool notifies the user. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	brl
Test Host:	none
Test Date:	Fri Sep 24 16:25:38 2010
Drives:	src(0D-SATA) dst (50-SATA) other (3D-SATA)
Source Setup:	src hash (SHA1): < BAAD80E8781E55F2E3EF528CA73BD41D228C1377 > src hash (MD5): < 1FA7C3CBE60EB9E89863DED2411E40C9 > 488397168 total sectors (250059350016 bytes) 30400/254/63 (max cyl/hd values) 30401/255/63 (number of cyl/hd) Model (WDC WD2500JD-22F) serial # (WD-WMAEH2678216) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 488375937 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 488375937 sectors 250048479744 bytes
Log Highlights:	====== Destination drive setup ====== 156301488 sectors wiped with 50 ====== Comparison of original to clone drive ====== Sectors compared: 156301488 Sectors match: 156301488 Sectors differ: 0 Bytes differ: 0 Diffs range Source (488397168) has 332095680 more sectors than destination (156301488) 0 source read errors, 0 destination read errors ====== Tool Settings: ====== Lg-XferBlk yes dst-interface sata28 dst-port I ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Restore Hashing: SHA1 Suspect drive's Identity Model: ST3750330AS Serial Number: 3QK01GB4 Capacity: 715404MB, 1465149168 sectors Block size: 512 ====== Hash of Acquired Data ======
Results:	**Assertion & Expected Result** | **Actual Result**

Test Case DA-17 Image MASSter Solo-3 Software Version 2.0.10.23f		
	AM-03 Execution environment is XE.	as expected
	AO-12 A clone is created from an image file.	as expected
	AO-13 Clone created using interface AI.	as expected
	AO-19 Truncated clone is created.	as expected
	AO-20 User notified that clone is truncated.	No message to user
	AO-23 Logged information is correct.	as expected
Analysis:	Expected results not achieved	

5.2.36 DA-19

Test Case DA-19 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-19 Acquire a physical device to an unaligned clone, filling excess sectors.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-18 If requested, a benign fill is written to excess sectors of a clone. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	brl
Test Host:	none
Test Date:	Tue Sep 28 12:48:06 2010
Drives:	src(07-SATA) dst (1E-LAP) other (none)
Source Setup:	src hash (SHA256): < CE65C4A3C3164D3EBAD58D33BB2415D29E260E1F88DC5A131B1C4C9C2945B8A9 > src hash (SHA1): < 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E > src hash (MD5): < 2EAF712DAD80F66E30DEA00365B4579B > 156301488 total sectors (80026361856 bytes) Model (WDC WD800JD-32HK) serial # (WD-WMAJ91510044) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 156280257 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 156280257 sectors 80015491584 bytes
Log Highlights:	====== Destination drive setup ====== 234441648 sectors wiped with 1E ====== Comparison of original to clone drive ====== Sectors compared: 156301488 Sectors match: 156301488 Sectors differ: 0 Bytes differ: 0 Diffs range Source (156301488) has 78140160 fewer sectors than destination (234441648) Zero fill: 78140160 Src Byte fill (07): 0 Dst Byte fill (1E): 0 Other fill: 0 Other no fill: 0 Zero fill range: 156301488-234441647 Src fill range: Dst fill range: Other fill range: Other not filled range: 0 source read errors, 0 destination read errors ====== Tool Settings: ======

Test Case DA-19 Image MASSter Solo-3 Software Version 2.0.10.23f

```
Lg-XferBlk yes
dst-interface SATA28
dst-port I

====== Extract from IM Solo III audit01.txt file ======
Unit Settings . . .
Software Version 2.0.10.23f
Built on: Jul 30 2009 15:23:21
Firmware Version 5.0.4.5
SCSI Module F/W:   1.80
Serial #: 32520
Operational mode: SING Capture
Hashing: SHA1
Suspect drive's Identity
Model: WDC WD800JD-32HKA0
Serial Number: WD-WMAJ91510044
Capacity: 76319MB, 156301488 sectors
Block size: 512

====== Hash of Acquired Data ======
SHA1: 655E9BDD B36A3F9C 5C4CC8BF 32B8C5B4 1AF9F52E

====== Source drive rehash ======
Rehash (SHA1) of source: 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E
```

Results:

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-04 A clone is created.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-11 A clone is created during acquisition.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-18 Excess sectors are filled.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results achieved

5.2.37 DA-24

Test Case DA-24 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-24 Verify a valid image.
Assertions:	AM-03 The tool executes in execution environment XE. AO-06 If the tool performs an image file integrity check on an image file that has not been changed since the file was created, the tool shall notify the user that the image file has not been changed. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	brl
Test Host:	none
Test Date:	Thu Sep 30 11:31:34 2010
Drives:	src(01-IDE) dst (none) other (3B-SATA)
Source Setup:	src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 > src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E > 78165360 total sectors (40020664320 bytes) Model (0BB-00JHC0) serial # (WD-WMAMC74171) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended 15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027744192 sectors 14205026304 bytes
Log Highlights:	====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Hash Hashing: SHA1 Suspect drive's Identity Model: Hitachi HDS721010KLA330 Serial Number: GTH000PAH0LW8H Capacity: 953869MB, 1953525168 sectors Block size: 512 ====== Hash of Acquired Data ====== SHA1: A48BB566 5D6DC57C 22DB68E2 F723DA9A A8DF82B9
Results:	**Assertion & Expected Result** | **Actual Result**

Test Case DA-24 Image MASSter Solo-3 Software Version 2.0.10.23f		
	AM-03 Execution environment is XE.	as expected
	AO-06 Tool verifies image file unchanged.	as expected
	AO-23 Logged information is correct.	as expected
Analysis:	Expected results achieved	

5.2.38 DA-25

Test Case DA-25 Image MASSter Solo-3 Software Version 2.0.10.23f	
Case Summary:	DA-25 Detect a corrupted image.
Assertions:	AM-03 The tool executes in execution environment XE. AO-07 If the tool performs an image file integrity check on an image file that has been changed since the file was created, the tool shall notify the user that the image file has been changed. AO-08 If the tool performs an image file integrity check on an image file that has been changed since the file was created, the tool shall notify the user of the affected locations. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	brl
Test Host:	none
Test Date:	Thu Sep 30 13:44:17 2010
Drives:	src(01-IDE) dst (none) other (3B-SATA)
Source Setup:	src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 > src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E > 78165360 total sectors (40020664320 bytes) Model (0BB-00JHC0) serial # (WD-WMAMC74171) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended 15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027744192 sectors 14205026304 bytes
Log Highlights:	====== Image file corrupted for test run: ====== Change byte 544 of file /media/floppy1/06ata28/06ata28.001 from 0x01 to 0x00 ====== Extract from IM Solo III audit01.txt file ====== Unit Settings . . . Software Version 2.0.10.23f Built on: Jul 30 2009 15:23:21 Firmware Version 5.0.4.5 SCSI Module F/W: 1.80 Serial #: 32520 Operational mode: LinuxDD Hash Hashing: SHA1 Suspect drive's Identity Model: Hitachi HDS721010KLA330 Serial Number: GTH000PAH0LW8H Capacity: 953869MB, 1953525168 sectors

Test Case DA-25 Image MASSter Solo-3 Software Version 2.0.10.23f	
	Block size: 512 ====== Hash of Acquired Data ====== SHA1: CEF2B545 E049650B 51F8252A F41ED55C 21D13E01
Results:	

Assertion & Expected Result	**Actual Result**
AM-03 Execution environment is XE.	as expected
AO-07 User notified if image file has changed.	as expected
AO-08 User notified of changed locations.	as expected
AO-23 Logged information is correct.	as expected

Analysis:	Expected results achieved

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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.

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4. Disseminate relevant knowledge and information to practitioners and policymakers in an understandable, timely and concise manner.
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