SEPT. 09

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Special **REPORT**

Test Results for Digital Data Acquisition Tool: BlackBag MacQuisition 2.2

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Introduction

The Computer Forensics Tool Testing (CFTT) program is a joint project of the National Institute of Justice (NIJ), the research and development organization of the U.S. Department of Justice (DOJ), and the National Institute of Standards and Technology's (NIST's) Office of Law Enforcement Standards and Information Technology Laboratory. CFTT is supported by other organizations, including the Federal Bureau of Investigation, the U.S. Department of Defense Cyber Crime Center, U.S. Internal Revenue Service Criminal Investigation Division Electronic Crimes Program, and the U.S. Department of Homeland Security's 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. This 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 BlackBag MacQuisition, version 2.2, 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 software packages and the CFTT tool methodology can be found on NIJ's computer forensics tool testing Web page, http://www.ojp.usdoj.gov/nij/topics/technology/electronic-crime/cftt.htm.

Test Results for Digital Data Acquisition Tool

Tool Tested:	BlackBag MacQuisition
Version:	2.2
Run Environments:	Custom (Mac OS X)
Supplier:	BlackBag Technologies, Inc.
Address:	300 Piercy Road San Jose, CA 95138
Tel:	408–844–8890
Fax:	408–844–8891
WWW:	http://www.blackbagtech.com/

1 Results Summary

The tool acquired the source drives accurately except for acquiring a drive with faulty sectors. However, several tool anomalies were observed:

- In one distributed version of MacQuisition 2.2 SHA1 acquisition hashes on the PowerPC architecture are computed incorrectly (DA–06–FW).
- The last hash in a series of block hashes may be omitted (DA–06–SATA28, DA–08–SATA28, DA–08–SATA28–INTEL, DA–09, and DA–09–INTEL).
- Acquisition hashes may be computed incorrectly (DA–06–SATA48, DA–06–SATA48–INTEL, and DA–08–SATA48).
- Block hashes may be computed incorrectly (DA–06–FW, DA–06–FW–INTEL, DA–06–USB, DA–06–USB–INTEL, DA–09, DA–09–INTEL, DA–09–134, and DA–09–134–INTEL).
- The ranges of data over which block hashes are computed are logged inaccurately (DA–06–FW, DA–06–FW–INTEL, DA–06–SATA28, DA–06–USB, DA–06–USB–INTEL, DA–08–DCO, DA–08–SATA28, DA–08–SATA28–INTEL, DA–09, DA–09–INTEL, DA–09–134, and DA–09–134–INTEL).
- Log files are incomplete when acquisitions are written to devices with insufficient space (DA–12).
- The sectors hidden by a *device configuration overlay* (DCO) or *host protected area* (HPA) are not acquired (DA–08–DCO, DA–08–SATA28, DA–08–SATA28–INTEL, and DA–08–SATA48).
- Data is not skipped as directed by the skip parameter (DA–07–PART).
- Good sectors in the same block as a faulty sector are not acquired, and other data is written in their place (DA–09, DA–09–INTEL, DA–09–134, and DA–09–134–INTEL).

- When a faulty sector is encountered, a block of sectors equal in size to the imaging block size is omitted from the acquisition image (DA–09, DA–09–TPIPE, and DA–09–134).
- Data for faulty sectors may be replaced in the image file with data from an undetermined source (DA–09, DA–09–INTEL, DA–09–TPIPE, and DA–09–TPIPE–INTEL).
- In the image file, sectors surrounding a faulty sector may contain data that has been previously acquired (DA–09, DA–09–INTEL, DA–09–TPIPE, and DA–09–TPIPE–INTEL).

2 Test Case Selection

Not all test cases or test assertions specified in the *Digital Data Acquisition Tool Assertions and Test Plan Version 1.0* are appropriate for all tools. In addition to the base test cases, each remaining test case is linked to optional tool features needed for the test case. 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 MacQuisition and the linked test cases. Table 2 lists the features not available in MacQuisition and the linked test cases that were not run.

Table 1 Selected Test Cases

Supported Optional Feature	Cases selected for execution
Base Cases	06, 07 & 08
Read error during acquisition	09
Create an image file in more than one format	10
Insufficient space for image file	12

Table 2 Omitted Test Cases

Unsupported Optional Feature	Cases omitted (not executed)
Create a clone during acquisition	01, 02 & 04
Create cylinder aligned clones	03, 15, 21 & 23
Convert an image file from one format to another	26
Destination Device Switching	13
Device I/O error generator available	05, 11 & 18
Fill excess sectors on a clone device	19, 20, 21, 22 & 23
Create a clone from an image file	14 & 17
Create a clone from a subset of an image file	16
Detect a corrupted (or changed) image file	24 & 25

Some test cases have variant forms to accommodate parameters within test assertions. These variations cover the execution environment, acquisition interface to the source

drive, and type of digital object acquired. Variations were also created for each imaging method.

Execution was tested with both Intel and PowerPC architectures. The MacQuisition 2.2 tool does support both Intel and PowerPC architectures. Test cases whose names include the INTEL suffix (e.g., DA–09–134–INTEL) were run using the Intel architecture. Test cases whose names do not include the INTEL suffix were run using the PowerPC architecture.

The following source interfaces were tested: SATA28, SATA48, USB, and FireWire.

The image files were created on FAT32 and HFS+ partitions.

3 Test Execution Approach

There are several ways to perform an acquisition using the MacQuisition tool. At a high level there is an intuitive GUI driven approach and a manual command line approach.

The command line approach involves the user executing commands from the tool's Quick Terminal program.

The GUI-driven approach involves the user navigating through a series of windows to accomplish the acquisition. Several distinct program execution paths may be taken through these windows.

To accomplish a rigorous testing of the tool procedures A through F were defined and used in testing. Procedures A through E specify distinct paths through the GUI-driven acquisition process. Procedure F specifies a command line acquisition. These procedures are defined in the *Media Setup and Test Procedures for Disk Imaging* document, which is available at the CFTT Web site (http://www.cftt.nist.gov/)

4 Results by Test Assertion

Table 3 summarizes the test results 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.

Two test assertions only apply in special circumstances. The assertion AO–22 is checked only for tools that create block hashes. For MacQuisition, this optional computation was only tested in 11 test cases. 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 3 Assertions Tested

Assertions Tested	Tests	Anomaly
AM–01 The tool uses access interface SRC–AI to access the digital source.	22	
AM-02 The tool acquires digital source DS.	22	
AM-03 The tool executes in execution environment XE.	22	
AM-05 If image file creation is specified, the tool creates an image file on file system type FS.	22	
AM-06 All visible sectors are acquired from the digital source.	21	4.6
AM-07 All hidden sectors are acquired from the digital source.	4	4.4
AM-08 All sectors acquired from the digital source are acquired accurately.	21	4.6
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.	6	4.6
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.	6	4.6
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.	21	4.5
AO-02 If an image file format is specified, the tool creates an image file in the specified format.	1	
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	4.3
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.	21	
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.	9	4.2
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.	22	4.1
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.	22	

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
AM-04 If clone creation is specified, the tool creates a clone of the digital source.
AO-03 If there is an error while writing the image file, the tool notifies the user.
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-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-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-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.
AO-11 If requested, a clone is created during an acquisition of a digital source.
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-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 the subset is cloned.
AO-17 If requested, any excess sectors on a clone destination device are not modified.
AO-18 If requested, a benign fill is written to excess sectors of a clone.
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-21 If there is a write error during clone creation, the tool notifies the user.

The MacQuisition tool gives the user three imaging methods. The default method utilizes DCFLDD 1.3.4 and the remaining methods, Hashwindow and TPipe, use DCFLDD 1.0.

4.1 Acquisition Hashes

More than one version of the MacQuisition 2.2 imaging tool has been distributed. One version calculates incorrect SHA1 acquisition hash values on the PowerPC architecture. This version was used in test cases DA–06–FW and DA–06–FW–INTEL. The other version available was used for all other test cases.

The tool's TPipe imaging method can produce incorrect acquisition hash values for test cases DA–06–SATA48, DA–06–SATA48–INTEL, and DA–08–SATA48. In these cases the block size parameter does not evenly divide the size of the acquired device. In another case that used the TPipe imaging method, case DA–10, the acquisition hash value is correct, but we observed that for this case the value of the block size parameter evenly divides the size of the acquired device. It may be the case that the hash values are correctly computed if the block size evenly divides the size of the acquired device.

4.2 Block Acquisition Hashes

The hashwindow imaging method did not log a block hash for the last block of data acquired.

The tool's DCFLDD 1.3.4 imaging method did not compute correct block hash values for test cases DA–06–FW, DA–06–FW–INTEL, DA–06–USB, and DA–06–USB–INTEL where the hash size was set to 4.7 GB. Block hashes are computed correctly using the DCFLDD 1.3.4 imaging method when the hash size is set to a value less than 4 GB.

When the tool logs block hash values it also logs the range of data over which each block hash was computed. These ranges inaccurately identify the data hashed indicating that bytes used in the calculation of a given block hash were also used in the calculation of another block hash. For example, the first block hash for test case DA–06–SATA28 is logged as being computed over bytes 0–1048576000. The second block hash for the same test case is logged as being computed over bytes 1048576000–2097152000. The inaccuracy here is that byte 1048576000 was only used in the calculation of the second hash value and not the first.

4.3 Acquisition With Insufficient Space

When there is insufficient space on the destination media to completely acquire the source device incomplete log files are generated. This is seen in test case DA–12 and is because the log files are stored on the destination media. A message stating "Could not copy Acquisition log from /tmp Error code: 256" is displayed.

4.4 Acquisition of HPA and DCO

The tool does not remove either HPAs or DCOs. The tool did not acquire sectors hidden by an HPA or DCO in test cases DA–08–DCO, DA–08–SATA28, DA–08–SATA28–INTEL, and DA–08–SATA48.

4.5 Skip Request Ignored

MacQuisition 2.2 allows a subset of a source device to be acquired with the use of the skip and count parameters. The tool correctly limits the amount of data acquired according to the value of the count parameter, but does not skip data as directed by the skip parameter. This behavior is seen in test case DA–07–PART.

4.6 Acquisition of Faulty Sectors

To determine tool behavior on acquisitions of drives with faulty sectors, the image files were restored to clones using dd and the clones were compared to a drive that was identical to the source drive, but lacked any faulty sectors.

Each of the imaging methods fails to acquire readable sectors. Good sectors in the same block as a faulty sector are not acquired and other data is written to the image file in their place.

The Hashwindow imaging method used in cases DA–09 and DA–09–INTEL and the TPipe imaging method used in cases DA–09–TPIPE and DA–09–TPIPE–INTEL fill sectors that weren't acquired with one of three possible fills. First, data filled in place of a faulty sector is filled with data from an undetermined source. Data following and in the same block as a faulty sector is filled either with zeroes or with data that was previously acquired and written to an earlier location in the image file.

When a faulty sector is read by the TPipe imaging method, no record of it is made to the tool's error log file.

The DCFLDD 1.3.4 imaging method used in cases DA–09–134 and DA–09–134–INTEL fills zeroes into the image file for sectors that are not acquired. When a faulty sector is read, the entire block of sectors read (to which the faulty sector belongs) is filled with zeroes.

Upon encountering a faulty sector block hashes are computed incorrectly by the MacQuisition tool. In test cases DA–09, DA–09–INTEL, DA–09–134, and DA–09–134–INTEL block hashes computed over sections of the source drive located prior to the first faulty sector are computed correctly. All block hashes computed over the sections of the source drive including and subsequent to the first faulty sector, to include block hashes computed over portions of the drive that contain no faulty sectors, are computed incorrectly. Additionally, for the DCFLDD 1.3.4 imaging method used in cases DA–09–134 and DA–09–134–INTEL, the tool's block hash log reports the final block acquisition hash as not including the final sectors of the source drive. For case DA–09–134 the tool logs the last block hash as being over a range that does not include the final 28 sectors of the source drive and for case DA–09–134–INTEL the tool logs the last block hash as being over a range that does not include the final 19 sectors of the source drive.

It is the case for the three MacQuisition imaging methods (hashwindow, tpipe, and DCFLDD 1.3.4) when used on the PowerPC architecture (test cases DA–09, DA–09–TPIPE, and DA–09–134) that when a faulty sector is encountered a block of sectors equal in size to the imaging block size is not acquired by the MacQuisition tool. This block of sectors is completely omitted from the image file; no data is written in its place. This produces an offset between sectors on the source media and sectors in the acquisition image file. This behavior was only observed on the PowerPC architecture. It was not observed on the Intel architecture.

5 Testing Environment

The tests were run in the NIST CFTT lab. This section describes the test computers available for testing.

5.1 Test Computers

Four test computers were used.

D'Artagnan has the following configuration:

Mac Pro
Boot ROM Version: MP11.005C.B08
2 Dual-Core Intel Xeon 2.66 GHz CPUs 4MB L2 cache per CPU
4x2GB 667MHz DDR2 DIMMs
2x512MB 667MHz DDR2 DIMMs
Sony ATAPI DW–D150A DVD–RW drive
ST3250824AS P, 250 GB SATA disk drive
1.33 GHz bus
1 pair Fibre Channel ports
5 USB 2.0 ports
2 IEEE 1394 ports
2 IEEE 1394b port

Manuelito has the following configuration:

Mac mini
Boot ROM Version: MM21.009A.B00
1 Intel Core 2 Duo 2 GHz CPU 4MB L2 cache
2x1GB 667MHz DDR2 SDRAM DIMMs
Pioneer ATAPI DVR–K06 DVD–RW drive
Hitachi HTS542512K9SA00, 120 GB SATA disk drive
667 MHz bus
4 USB 2.0 ports
1 IEEE 1394 ports

Richelieu has the following configuration:

Power Mac G5
Boot ROM Version: 5.2.4f1
2 PowerPC G5 (3.0) 2.3GHz CPUs 512MB L2 cache per CPU
2x512MB PC3200U–30330 DDR SDRAM DIMMs
Pioneer ATAPI DVR–109 DVD–RW drive
WDC WD2500JD–41HBC0, 250 GB SATA disk drive
1.15GHz bus
1 pair Fibre Channel ports

3 USB 2.0 ports
2 IEEE 1394 ports
1 IEEE 1394b port

SamTyler has the following configuration:

iBook G4
Boot ROM Version: 4.8.7f1
PowerPC G4 (1.1) 1.2GHz CPU 512KB L2 cache
1GB PC2700U–25330 DDR SDRAM DIMM
256MB built-in RAM
Matishita ATAPI CD–RW CW–8123, CD–RW/DVD–ROM drive
Toshiba MK3025GAS, 27.94 GB ATA disk drive
133MHz bus
2 USB 2.0 ports
1 IEEE 1394 port

5.2 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.

6 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 File Highlights** box of the test report summary.

6.1 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.

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).

Heading	Description
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.

6.2 Test Details

6.2.1 DA-06-FW

Test Case DA-06-FW MacQuisition Version 2.2	
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:	Richelieu
Test Date:	Thu Jan 31 09:03:11 2008
Drives:	src(63-FU2) dst (none) other (1D-SATA)
Source Setup:	src hash (SHA256): < EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D > src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B > src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC > Reference MD5 hashes, Win size: 9625600 (sectors) 1 0 - 9625599 B9C76550A2E1799943F9F12B136B3681 - 2 9625600 - 19251199 2266BDA23964E222F5175D4AE2B4C34B - 3 19251200 - 28876799 FCF4BBB5D26FF636E693D2891C6FC293 - . . . 11 96256000 - 105881599 0DBF99A015945CEA99F5F520AFA8EA75 - 12 105881600 - 115507199 08C6525C99379415A1AF66DD0187BF1A - 13 115507200 - 117304991 834C625424E4F960AD1E63A8377D8900 - Reference SHA1 hashes, Win size: 9625600 (sectors) 1 0 - 9625599 909C72A0918E2189F2DC877B06237EC2DED6A76A - 2 9625600 - 19251199 01E1E92E8366E523A0883D001716EA8510712176 - 3 19251200 - 28876799 803D84E0F6273BF4073C55C4B0D7A0CC37976F97 - . . . 11 96256000 - 105881599 6F81F7B76DB8711E1379B92310C5B2A77C61D858 - 12 105881600 - 115507199 695DF444E6A5674913750098DFF042C3352F338D - 13 115507200 - 117304991 D755AE046965033076EA8CD8B580362B02262FD8 - Reference SHA256 hashes, Win size: 9625600 (sectors) 1 0 - 9625599

Test Case DA-06-FW MacQuisition Version 2.2	
	2E6036DE4630AB2D27EB000313CC2800C7632CA49427DB7B585C8A6B00E5FC93 2 9625600 - 19251199 B78EDCB181A1859620D788A37AA57560A4D8A9018E32D33F2032898CF1B4526A 3 19251200 - 28876799 EDE8657D5712B75E232EC00E59EB2874572B738BB683BC0E3D7976242644ABAD . . . 11 96256000 - 105881599 A57C14E7D9EAB403047EC6FBA970EC7C9A0F0F67E788C2DC1EA8A36D33FD86D5 12 105881600 - 115507199 9D8A076D3BBB3163E58663C1FF63C65B259B6A7ACA3A74962BB13C1FE37F7B72 13 115507200 - 117304991 1B598D46640210837ACA4D755984CECAD51754D496727EE76D252D490C205F01 117304992 total sectors (60060155904 bytes) Model (SP0612N) serial # () N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 004192902 0000/001/01 0260/254/63 Boot 06 Fat16 2 X 004192965 113097600 0261/000/01 1023/254/63 0F extended 3 S 000000063 113097537 0261/001/01 1023/254/63 0B Fat32 4 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 5 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 6 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 004192902 sectors 2146765824 bytes 3 113097537 sectors 57905938944 bytes
Log Highlights:	Tool hashes, Win size: 4928307200 bytes (9625600 sectors), 95 hash blocks 1 0 - 4928307200: 0f96e8b06a62b0eccef8fb52423750eb 1 0 - 4928307200: cc0a4bceab659e1882684ef14a377489fa9cfc5f 1 0 - 4928307200: 1da75f52de5686d0cafb336a5ebd6b3b8774bd3bc4ce7f687949e1c9199c5ada 2 4928307200 - 9856614400: 98d0bcc3acf20bc1cf2000a87fb38d68 2 4928307200 - 9856614400: bdb360b829cb4ba413d0d356a7597d52475d78a0 2 4928307200 - 9856614400: 4f8262566c624ecdf3646dfc7e4280db50ba3fff8fb7613afa8aefae5f86d3bf 3 9856614400 - 14784921600: 194f06135923b6216f99e3ce02fbcf42 3 9856614400 - 14784921600: 5aac59a0ed91da5dcdcee1917e21427b009b95a9 3 9856614400 - 14784921600: b3381d95f1dc3d1f46850c53687087ae769a234c9defd211376c1d318a142baf . . . 93 453404262400 - 458332569600: c740178717b9f1b3417c9db86dd4c7b0 93 453404262400 - 458332569600: 06750c312617e2a69fbbf1fff2fdbe6b1f0e391b 93 453404262400 - 458332569600: 435cb952180e56f9fa974ed67f4e56781ace6f1ed378d6cbc829074da62ffdce 94 458332569600 - 463260876800: 7f69957ace5d9c9169cd565bb409b51c 94 458332569600 - 463260876800: fef70106ca351762cc5da224e0ceba1b663fe699 94 458332569600 - 463260876800: 864479b9675434bf86c3aef91dc4a24d23a4a1759a864bbac586b414dd515a8b 95 463260876800 - 463787081728: aaa9cd144524404f697b7877158f793c 95 463260876800 - 463787081728: f2dc9c2cbccdc8d338f72e161ea0435566f9d80a 95 463260876800 - 463787081728: 38f55b02271da8bd33471e180590ca9ad0f5b12982005c0c11834abde9909678 Entire Drive hashes Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec Total (sha1): 3cfe209944898b337d832c96c5203cabca3bc761 Total (sha256): ec8ef011494ba6da18f74c47547c3e74e7180585096a830f9247a98ef613bb1d Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/newdcfldd/dcfldd if=/dev/disk1 status=off bs=4096 errlog=/tmp/mnt1/DA-06-FW/Admin/errorlog.txt hashwindow=4700M hash=md5,sha1,sha256 hashlog=/tmp/mnt1/DA-06-FW/Admin/hashlog.txt conv=noerror,sync split=4700M splitformat=nnn of=/tmp/mnt1/DA-06-FW/Images/IMAGE_0001 Source Device: /dev/disk1 FIREWIRE DMI SAMSUNG SP0612N - 55.94 GB Source Device Size: 60060155904 Bytes 117304992 Sectors Destination Device: /dev/disk0 SATA ST3320620AS - 298.09 GB Hash Options: MD5,SHA1,SHA256 Segmentation: 4700M Block Size: 4096 Bytes

Test Case DA-06-FW MacQuisition Version 2.2

```
Imaging Method: New DCFLDD 1.3.4
Hash Values:
TOTAL (MD5): EE217BC4FA4F3D1B4021D29B065AA9EC
TOTAL (SHA1): 3CFE209944898B337D832C96C5203CABCA3BC761
TOTAL (SHA256):
EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D

Source SHA1 rehash: F7069EDCBEAC863C88DECED82159F22DA96BE99B
Settings: acquisition_procedure A
bootMedia DVD
masterImage 1
hashwindow 4.7GB

Image file segments
     1  4928307200 Feb 12 12:51 IMAGE_0001.002.dmgpart
     2  4928307200 Feb 12 13:01 IMAGE_0001.003.dmgpart
     3  4928307200 Feb 12 13:11 IMAGE_0001.004.dmgpart
   . . .
    11  4928307200 Feb 12 14:32 IMAGE_0001.012.dmgpart
    12   920469504 Feb 12 14:34 IMAGE_0001.013.dmgpart
    13  4928307200 Feb 12 12:41 IMAGE_0001.dmg
```

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.	block hashes incorrect
AO-23 Logged information is correct.	SHA1 incorrect
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results not achieved

6.2.2 DA-06-FW-INTEL

Test Case DA-06-FW-INTEL MacQuisition Version 2.2	
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:	Manuelito
Test Date:	Mon Jan 5 14:19:23 2009
Drives:	src(63-FU2) dst (none) other (3D-SATA)
Source Setup:	src hash (SHA256): < EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D > src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B > src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC > Reference MD5 hashes, Win size: 9625600 (sectors) 1 0 - 9625599 B9C76550A2E1799943F9F12B136B3681 - 2 9625600 - 19251199 2266BDA23964E222F5175D4AE2B4C34B - 3 19251200 - 28876799 FCF4BBB5D26FF636E693D2891C6FC293 - . . . 11 96256000 - 105881599 0DBF99A015945CEA99F5F520AFA8EA75 - 12 105881600 - 115507199 08C6525C99379415A1AF66DD0187BF1A - 13 115507200 - 117304991 834C625424E4F960AD1E63A8377D8900 - Reference SHA1 hashes, Win size: 9625600 (sectors) 1 0 - 9625599 909C72A0918E2189F2DC877B06237EC2DED6A76A - 2 9625600 - 19251199 01E1E92E8366E523A0883D001716EA8510712176 - 3 19251200 - 28876799 803D84E0F6273BF4073C55C4B0D7A0CC37976F97 - . . . 11 96256000 - 105881599 6F81F7B76DB8711E1379B92310C5B2A77C61D858 - 12 105881600 - 115507199 695DF444E6A5674913750098DFF042C3352F338D - 13 115507200 - 117304991 D755AE046965033076EA8CD8B580362B02262FD8 - Reference SHA256 hashes, Win size: 9625600 (sectors) 1 0 - 9625599 2E6036DE4630AB2D27EB000313CC2800C7632CA49427DB7B585C8A6B00E5FC93 2 9625600 - 19251199 B78EDCB181A1859620D788A37AA57560A4D8A9018E32D33F2032898CF1B4526A 3 19251200 - 28876799 EDE8657D5712B75E232EC00E59EB2874572B738BB683BC0E3D7976242644ABAD . . . 11 96256000 - 105881599 A57C14E7D9EAB403047EC6FBA970EC7C9A0F0F67E788C2DC1EA8A36D33FD86D5 12 105881600 - 115507199 9D8A076D3BBB3163E58663C1FF63C65B259B6A7ACA3A74962BB13C1FE37F7B72 13 115507200 - 117304991 1B598D46640210837ACA4D755984CECAD51754D496727EE76D252D490C205F01 117304992 total sectors (60060155904 bytes) Model (SP0612N) serial # () N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 004192902 0000/001/01 0260/254/63 Boot 06 Fat16 2 X 004192965 113097600 0261/000/01 1023/254/63 0F extended

Test Case DA-06-FW-INTEL MacQuisition Version 2.2	
	3 S 000000063 113097537 0261/001/01 1023/254/63 0B Fat32 4 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 5 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 6 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 004192902 sectors 2146765824 bytes 3 113097537 sectors 57905938944 bytes
Log Highlights:	Tool hashes, Win size: 4928307200 bytes (9625600 sectors), 95 hash blocks 1 0 - 4928307200: 0f96e8b06a62b0eccef8fb52423750eb 1 0 - 4928307200: af41df3c21016755176307fff7d92c68fffa2616 1 0 - 4928307200: 1da75f52de5686d0cafb336a5ebd6b3b8774bd3bc4ce7f687949e1c9199c5ada 2 4928307200 - 9856614400: 98d0bcc3acf20bc1cf2000a87fb38d68 2 4928307200 - 9856614400: ea1027ea03fbad3d6eb79c81d695d80d8b8654ae 2 4928307200 - 9856614400: 4f8262566c624ecdf3646dfc7e4280db50ba3fff8fb7613afa8aefae5f86d3bf 3 9856614400 - 14784921600: 194f06135923b6216f99e3ce02fbcf42 3 9856614400 - 14784921600: 2360131a08ca8be0f3d733fe84890a46b7a1edff 3 9856614400 - 14784921600: b3381d95f1dc3d1f46850c53687087ae769a234c9defd211376c1d318a142baf . . . 93 453404262400 - 458332569600: c740178717b9f1b3417c9db86dd4c7b0 93 453404262400 - 458332569600: e7a1ce0964cbb6c0c5d23ef8ff68030ee8cd7bfe 93 453404262400 - 458332569600: 435cb952180e56f9fa974ed67f4e56781ace6f1ed378d6cbc829074da62ffdce 94 458332569600 - 463260876800: 7f69957ace5d9c9169cd565bb409b51c 94 458332569600 - 463260876800: 44cfa4e8b3b800399099591eed6a330402724e84 94 458332569600 - 463260876800: 864479b9675434bf86c3aef91dc4a24d23a4a1759a864bbac586b414dd515a8b 95 463260876800 - 463787081728: aaa9cd144524404f697b7877158f793c 95 463260876800 - 463787081728: d8c6f3b1fa91d97ecc2d6fb34c9d863c356d0db2 95 463260876800 - 463787081728: 38f55b02271da8bd33471e180590ca9ad0f5b12982005c0c11834abde9909678 Entire Drive hashes Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec Total (sha1): f7069edcbeac863c88deced82159f22da96be99b Total (sha256): ec8ef011494ba6da18f74c47547c3e74e7180585096a830f9247a98ef613bb1d Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/newdcfldd/dcfldd if=/dev/disk7 status=off bs=4096 errlog=/tmp/mnt1/DA_06_FW_INTEL/Admin/errorlog.txt hashwindow=4700M hash=md5,sha1,sha256 hashlog=/tmp/mnt1/DA_06_FW_INTEL/Admin/hashlog.txt conv=noerror,sync split=4700M splitformat=nnn of=/tmp/mnt1/DA_06_FW_INTEL/Images/IMAGE_0001 Source Device: /dev/disk7 FIREWIRE DMI SAMSUNG SP0612N - 55.94 GB Source Device Size: 60060155904 Bytes 117304992 Sectors Destination Device: /dev/disk8 USB ST375033 0AS - 698.64 GB Hash Options: MD5,SHA1,SHA256 Segmentation: 4700M Block Size: 4096 Bytes Imaging Method: New DCFLDD 1.3.4 Hash Values: TOTAL (MD5): EE217BC4FA4F3D1B4021D29B065AA9EC TOTAL (SHA1): F7069EDCBEAC863C88DECED82159F22DA96BE99B TOTAL (SHA256): EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D Source SHA1 rehash: F7069EDCBEAC863C88DECED82159F22DA96BE99B Settings: acquisition_procedure A bootMedia DVD masterImage 1 hashwindow 4.7GB Image file segments 1 501 4928307200 Jan 5 14:45 IMAGE_0001.002.dmgpart 2 501 4928307200 Jan 5 14:54 IMAGE_0001.003.dmgpart

Test Case DA-06-FW-INTEL MacQuisition Version 2.2

```
      3   501  4928307200 Jan  5 15:03 IMAGE_0001.004.dmgpart
    . . .
     11   501  4928307200 Jan  5 16:14 IMAGE_0001.012.dmgpart
     12   501   920469504 Jan  5 16:15 IMAGE_0001.013.dmgpart
     13   501  4928307200 Jan  5 14:37 IMAGE_0001.dmg
```

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.	block hashes incorrect
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results not achieved

6.2.3 DA-06-SATA28

Test Case DA-06-SATA28 MacQuisition Version 2.2	
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:	Richelieu
Test Date:	Wed Feb 6 11:25:44 2008
Drives:	src(07-SATA) dst (none) other (1D-SATA)
Source Setup:	src hash (SHA1): < 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E > src hash (MD5): < 2EAF712DAD80F66E30DEA00365B4579B > Reference MD5 hashes, Win size: 2048000 (sectors) 1 0 - 2047999 7461CFC14022754D4B0733B03872B690 - 2 2048000 - 4095999 31C720F0FFBE6537D0560A8E3B9EEAA1 - 3 4096000 - 6143999 F15DB36BC5B456C7877E1F8CAFD67701 - . . . 75 151552000 - 153599999 7DDBFA56FEA4FF137651163017F613C7 - 76 153600000 - 155647999 CF24E1CE3D3086BA520893E38B3E3431 - 77 155648000 - 156301487 0CB5C3EDE20AB493D5A995F6EF2C6BE4 - 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 hashes, Win size: 1048576000 bytes (2048000 sectors), 76 hash blocks 1 0 - 1048576000: 7461cfc14022754d4b0733b03872b690 2 1048576000 - 2097152000: 31c720f0ffbe6537d0560a8e3b9eeaa1 3 2097152000 - 3145728000: f15db36bc5b456c7877e1f8cafd67701 . . . 74 76546048000 - 77594624000: abc534d941446bf073d209fb6db15e3a 75 77594624000 - 78643200000: 7ddbfa56fea4ff137651163017f613c7 76 78643200000 - 79691776000: cf24e1ce3d3086ba520893e38b3e3431 Entire Drive hashes Total: 2eaf712dad80f66e30dea00365b4579b Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/dcfldd if=/dev/disk0 status=off 2>/tmp/mnt1/DA_06_SATA28/Admin/errorlog.txt bs=4096 hashwindow=1000M hashlog=/tmp/mnt1/DA_06_SATA28/Admin/hashlog.txt conv=noerror,sync | /Applications/MacQuisition_2.2UB.app/Contents/MacOS/ddsplit - -m -b 1000m /tmp/mnt1/DA_06_SATA28/Images/IMAGE_0001 Source Device: /dev/disk0 ATA WDC WD800JD-32HKA0 - 74.53 GB Source Device Size: 80026361856 Bytes 156301488 Sectors Destination Device: /dev/disk1 SATA ST3320620AS - 298.09 GB

Test Case DA-06-SATA28 MacQuisition Version 2.2

```
Hash Options: MD5,SHA1,SHA256
Segmentation: 1000m
Block Size: 4096 Bytes
Hash Block Size: 1000M
Imaging Method: Hashwindow DCFLDD 1.0

Source SHA1 rehash: 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E
Settings: acquisition_procedure B
bootMedia CF
masterImage 2
hashwindow 1G

Image file segments
     1   1048576000 Feb  6 04:22 IMAGE_0001.002.dmgpart
     2   1048576000 Feb  6 04:23 IMAGE_0001.003.dmgpart
     3   1048576000 Feb  6 04:24 IMAGE_0001.004.dmgpart
   . . .
    75   1048576000 Feb  6 05:22 IMAGE_0001.076.dmgpart
    76    334585856 Feb  6 05:22 IMAGE_0001.077.dmgpart
    77   1048576000 Feb  6 04:22 IMAGE_0001.dmg
```

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.	last block hash missing
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results not achieved

6.2.4 DA-06-SATA48

Test Case DA-06-SATA48 MacQuisition Version 2.2	
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:	Richelieu
Test Date:	Fri Feb 1 16:26:17 2008
Drives:	src(16-SATA) dst (none) other (1D-SATA)
Source Setup:	src hash (SHA1): < F82982A9C63133988C1D2B4DA7C9C25CCA2D77A5 > src hash (MD5): < 7BB1D64D47671ED3E69130A2AD08FA02 > 312581808 total sectors (160041885696 bytes) 19456/254/63 (max cyl/hd values) 19457/255/63 (number of cyl/hd) Model (WDC WD1600JD-00G) serial # (WD-WMAES2058252) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 312560577 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 312560577 sectors 160031015424 bytes
Log Highlights:	1 5d542dc75c409345e4878683dc62342d - Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/dcfldd if=/dev/rdisk1 bs=65536 conv=noerror,sync | /Applications/MacQuisition_2.2UB.app/Contents/MacOS/tpipe "/Applications/MacQuisition_2.2UB.app/Contents/MacOS/md5sum > /tmp/mnt1/DA_06_SATA48/Admin/hashlog.txt" | /Applications/MacQuisition_2.2UB.app/Contents/MacOS/ddsplit - -m -b 700m /tmp/mnt1/DA_06_SATA48/Images/IMAGE_0001 2>/tmp/mnt1/DA_06_SATA48/Admin/errorlog.txt Source Device: /dev/rdisk1 ATA WDC WD1600JD-00GBB0 - 149.05 GB Source Device Size: 160041885696 Bytes 312581808 Sectors Destination Device: /dev/disk0 SATA ST3320620AS - 298.09 GB Hash Options: MD5,SHA1 Segmentation: 700m Block Size: 65536 Bytes Imaging Method: Tpipe DCFLDD 1.0 Source SHA1 rehash: F82982A9C63133988C1D2B4DA7C9C25CCA2D77A5 Settings: acquisition_procedure C bootMedia DVD masterImage 2 Image file segments 1 734003200 Feb 5 11:39 IMAGE_0001.002.dmgpart 2 734003200 Feb 5 11:40 IMAGE_0001.003.dmgpart 3 734003200 Feb 5 11:41 IMAGE_0001.004.dmgpart . . . 217 734003200 Feb 5 14:41 IMAGE_0001.218.dmgpart

Test Case DA-06-SATA48 MacQuisition Version 2.2	
	218 29229056 Feb 5 14:41 IMAGE_0001.219.dmgpart 219 734003200 Feb 5 11:39 IMAGE_0001.dmg
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 tested
AO-23 Logged information is correct.	hash incorrect
AO-24 Source is unchanged by acquisition.	as expected

Analysis:	Expected results not achieved

6.2.5 DA-06-SATA48-INTEL

Test Case DA-06-SATA48-INTEL MacQuisition Version 2.2	
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:	D'Artagnan
Test Date:	Fri Dec 19 12:12:42 2008
Drives:	src(16-SATA) dst (none) other (3D-SATA)
Source Setup:	src hash (SHA1): < F82982A9C63133988C1D2B4DA7C9C25CCA2D77A5 > src hash (MD5): < 7BB1D64D47671ED3E69130A2AD08FA02 > 312581808 total sectors (160041885696 bytes) 19456/254/63 (max cyl/hd values) 19457/255/63 (number of cyl/hd) Model (WDC WD1600JD-00G) serial # (WD-WMAES2058252) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 312560577 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 312560577 sectors 160031015424 bytes
Log Highlights:	1 5d542dc75c409345e4878683dc62342d - Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/dcfldd if=/dev/rdisk0 bs=65536 conv=noerror,sync | /Applications/MacQuisition_2.2UB.app/Contents/MacOS/tpipe "/Applications/MacQuisition_2.2UB.app/Contents/MacOS/md5sum > /tmp/mnt1/DA_06_SATA48_INTEL/Admin/hashlog.txt" | /Applications/MacQuisition_2.2UB.app/Contents/MacOS/ddsplit - -m -b 700m /tmp/mnt1/DA_06_SATA48_INTEL/Images/IMAGE_0001 2>/tmp/mnt1/DA_06_SATA48_INTEL/Admin/errorlog.txt Source Device: /dev/rdisk0 OTHER WDC WD1600JD-00GBB0 - 149.05 GB Source Device Size: 160041885696 Bytes 312581808 Sectors Destination Device: /dev/disk1 OTHER ST3750330AS - 698.64 GB Hash Options: MD5 Segmentation: 700m Block Size: 65536 Bytes Imaging Method: Tpipe DCFLDD 1.0 Source SHA1 rehash: F82982A9C63133988C1D2B4DA7C9C25CCA2D77A5 Settings: acquisition_procedure A bootMedia CF masterImage 2 Image file segments 1 501 734003200 Dec 19 17:37 IMAGE_0001.002.dmgpart 2 501 734003200 Dec 19 17:38 IMAGE_0001.003.dmgpart 3 501 734003200 Dec 19 17:39 IMAGE_0001.004.dmgpart . . .

Test Case DA-06-SATA48-INTEL MacQuisition Version 2.2

```
   217   501  734003200 Dec 19 21:03 IMAGE_0001.218.dmgpart
   218   501   29229056 Dec 19 21:03 IMAGE_0001.219.dmgpart
   219   501  734003200 Dec 19 17:36 IMAGE_0001.dmg
```

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 tested
AO-23 Logged information is correct.	hash incorrect
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results not achieved

6.2.6 DA-06-USB

Test Case DA-06-USB MacQuisition Version 2.2	
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:	Richelieu
Test Date:	Thu Jan 31 11:06:37 2008
Drives:	src(63-FU2) dst (none) other (1D-SATA)
Source Setup:	src hash (SHA256): < EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D > src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B > src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC > Reference MD5 hashes, Win size: 9625600 (sectors) 1 0 - 9625599 B9C76550A2E1799943F9F12B136B3681 - 2 9625600 - 19251199 2266BDA23964E222F5175D4AE2B4C34B - 3 19251200 - 28876799 FCF4BBB5D26FF636E693D2891C6FC293 - . . . 11 96256000 - 105881599 0DBF99A015945CEA99F5F520AFA8EA75 - 12 105881600 - 115507199 08C6525C99379415A1AF66DD0187BF1A - 13 115507200 - 117304991 834C625424E4F960AD1E63A8377D8900 - Reference SHA1 hashes, Win size: 9625600 (sectors) 1 0 - 9625599 909C72A0918E2189F2DC877B06237EC2DED6A76A - 2 9625600 - 19251199 01E1E92E8366E523A0883D001716EA8510712176 - 3 19251200 - 28876799 803D84E0F6273BF4073C55C4B0D7A0CC37976F97 - . . . 11 96256000 - 105881599 6F81F7B76DB8711E1379B92310C5B2A77C61D858 - 12 105881600 - 115507199 695DF444E6A5674913750098DFF042C3352F338D - 13 115507200 - 117304991 D755AE046965033076EA8CD8B580362B02262FD8 - Reference SHA256 hashes, Win size: 9625600 (sectors) 1 0 - 9625599 2E6036DE4630AB2D27EB000313CC2800C7632CA49427DB7B585C8A6B00E5FC93 2 9625600 - 19251199 B78EDCB181A1859620D788A37AA57560A4D8A9018E32D33F2032898CF1B4526A 3 19251200 - 28876799 EDE8657D5712B75E232EC00E59EB2874572B738BB683BC0E3D7976242644ABAD . . . 11 96256000 - 105881599 A57C14E7D9EAB403047EC6FBA970EC7C9A0F0F67E788C2DC1EA8A36D33FD86D5 12 105881600 - 115507199 9D8A076D3BBB3163E58663C1FF63C65B259B6A7ACA3A74962BB13C1FE37F7B72 13 115507200 - 117304991 1B598D46640210837ACA4D755984CECAD51754D496727EE76D252D490C205F01 117304992 total sectors (60060155904 bytes) Model (SP0612N) serial # () N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 004192902 0000/001/01 0260/254/63 Boot 06 Fat16 2 X 004192965 113097600 0261/000/01 1023/254/63 0F extended

Test Case DA-06-USB MacQuisition Version 2.2	
	3 S 000000063 113097537 0261/001/01 1023/254/63 0B Fat32 4 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 5 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 6 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 004192902 sectors 2146765824 bytes 3 113097537 sectors 57905938944 bytes
Log Highlights:	Tool hashes, Win size: 4928307200 bytes (9625600 sectors), 95 hash blocks 1 0 - 4928307200: 0f96e8b06a62b0eccef8fb52423750eb 1 0 - 4928307200: af41df3c21016755176307fff7d92c68fffa2616 1 0 - 4928307200: 1da75f52de5686d0cafb336a5ebd6b3b8774bd3bc4ce7f687949e1c9199c5ada 2 4928307200 - 9856614400: 98d0bcc3acf20bc1cf2000a87fb38d68 2 4928307200 - 9856614400: ea1027ea03fbad3d6eb79c81d695d80d8b8654ae 2 4928307200 - 9856614400: 4f8262566c624ecdf3646dfc7e4280db50ba3fff8fb7613afa8aefae5f86d3bf 3 9856614400 - 14784921600: 194f06135923b6216f99e3ce02fbcf42 3 9856614400 - 14784921600: 2360131a08ca8be0f3d733fe84890a46b7a1edff 3 9856614400 - 14784921600: b3381d95f1dc3d1f46850c53687087ae769a234c9defd211376c1d318a142baf . . . 93 453404262400 - 458332569600: c740178717b9f1b3417c9db86dd4c7b0 93 453404262400 - 458332569600: e7a1ce0964cbb6c0c5d23ef8ff68030ee8cd7bfe 93 453404262400 - 458332569600: 435cb952180e56f9fa974ed67f4e56781ace6f1ed378d6cbc829074da62ffdce 94 458332569600 - 463260876800: 7f69957ace5d9c9169cd565bb409b51c 94 458332569600 - 463260876800: 44cfa4e8b3b800399099591eed6a330402724e84 94 458332569600 - 463260876800: 864479b9675434bf86c3aef91dc4a24d23a4a1759a864bbac586b414dd515a8b 95 463260876800 - 463787081728: aaa9cd144524404f697b7877158f793c 95 463260876800 - 463787081728: d8c6f3b1fa91d97ecc2d6fb34c9d863c356d0db2 95 463260876800 - 463787081728: 38f55b02271da8bd33471e180590ca9ad0f5b12982005c0c11834abde9909678 Entire Drive hashes Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec Total (sha1): f7069edcbeac863c88deced82159f22da96be99b Total (sha256): ec8ef011494ba6da18f74c47547c3e74e7180585096a830f9247a98ef613bb1d Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/newdcfldd/dcfldd if=/dev/rdisk1 status=off bs=4096 errlog=/tmp/mnt1/DA_06_USB/Admin/errorlog.txt hashwindow=4700M hash=md5,sha1,sha256 hashlog=/tmp/mnt1/DA_06_USB/Admin/hashlog.txt conv=noerror,sync split=660M splitformat=nnn of=/tmp/mnt1/DA_06_USB/Images/IMAGE_0001 Source Device: /dev/rdisk1 USB SAMSUNG SP0612N - 55.94 GB Source Device Size: 60060155904 Bytes 117304992 Sectors Destination Device: /dev/disk0 SATA ST3320620AS - 298.09 GB Hash Options: MD5,SHA1,SHA256 Segmentation: 660M Block Size: 4096 Bytes Imaging Method: New DCFLDD 1.3.4 Hash Values: TOTAL (MD5): EE217BC4FA4F3D1B4021D29B065AA9EC TOTAL (SHA1): F7069EDCBEAC863C88DECED82159F22DA96BE99B TOTAL (SHA256): EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D Source SHA1 rehash: F7069EDCBEAC863C88DECED82159F22DA96BE99B Settings: acquisition_procedure D bootMedia CF masterImage 2 hashwindow 4.7GB Image file segments 1 692060160 Jan 31 11:36 ../Images/IMAGE_0001.002.dmgpart 2 692060160 Jan 31 11:44 ../Images/IMAGE_0001.003.dmgpart 3 692060160 Jan 31 11:52 ../Images/IMAGE_0001.004.dmgpart

Test Case DA-06-USB MacQuisition Version 2.2

```
. . .
 85  692060160 Jan 31 23:20 ../Images/IMAGE_0001.086.dmgpart
 86  542982144 Jan 31 23:27 ../Images/IMAGE_0001.087.dmgpart
 87  692060160 Jan 31 11:27 ../Images/IMAGE_0001.dmg
```

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.	block hashes incorrect
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results not achieved

6.2.7 DA-06-USB-INTEL

Test Case DA-06-USB-INTEL MacQuisition Version 2.2	
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:	Manuelito
Test Date:	Mon Dec 29 10:29:18 2008
Drives:	src(63-FU2) dst (none) other (3D-SATA)
Source Setup:	src hash (SHA256): < EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D > src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B > src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC > Reference MD5 hashes, Win size: 9625600 (sectors) 1 0 - 9625599 B9C76550A2E1799943F9F12B136B3681 - 2 9625600 - 19251199 2266BDA23964E222F5175D4AE2B4C34B - 3 19251200 - 28876799 FCF4BBB5D26FF636E693D2891C6FC293 - . . . 11 96256000 - 105881599 0DBF99A015945CEA99F5F520AFA8EA75 - 12 105881600 - 115507199 08C6525C99379415A1AF66DD0187BF1A - 13 115507200 - 117304991 834C625424E4F960AD1E63A8377D8900 - Reference SHA1 hashes, Win size: 9625600 (sectors) 1 0 - 9625599 909C72A0918E2189F2DC877B06237EC2DED6A76A - 2 9625600 - 19251199 01E1E92E8366E523A0883D001716EA8510712176 - 3 19251200 - 28876799 803D84E0F6273BF4073C55C4B0D7A0CC37976F97 - . . . 11 96256000 - 105881599 6F81F7B76DB8711E1379B92310C5B2A77C61D858 - 12 105881600 - 115507199 695DF444E6A5674913750098DFF042C3352F338D - 13 115507200 - 117304991 D755AE046965033076EA8CD8B580362B02262FD8 - Reference SHA256 hashes, Win size: 9625600 (sectors) 1 0 - 9625599 2E6036DE4630AB2D27EB000313CC2800C7632CA49427DB7B585C8A6B00E5FC93 2 9625600 - 19251199 B78EDCB181A1859620D788A37AA57560A4D8A9018E32D33F2032898CF1B4526A 3 19251200 - 28876799 EDE8657D5712B75E232EC00E59EB2874572B738BB683BC0E3D7976242644ABAD . . . 11 96256000 - 105881599 A57C14E7D9EAB403047EC6FBA970EC7C9A0F0F67E788C2DC1EA8A36D33FD86D5 12 105881600 - 115507199 9D8A076D3BBB3163E58663C1FF63C65B259B6A7ACA3A74962BB13C1FE37F7B72 13 115507200 - 117304991 1B598D46640210837ACA4D755984CECAD51754D496727EE76D252D490C205F01 117304992 total sectors (60060155904 bytes) Model (SP0612N) serial # () N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 004192902 0000/001/01 0260/254/63 Boot 06 Fat16 2 X 004192965 113097600 0261/000/01 1023/254/63 0F extended

Test Case DA-06-USB-INTEL MacQuisition Version 2.2	
	3 S 000000063 113097537 0261/001/01 1023/254/63 0B Fat32 4 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 5 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 6 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 004192902 sectors 2146765824 bytes 3 113097537 sectors 57905938944 bytes
Log Highlights:	Tool hashes, Win size: 4928307200 bytes (9625600 sectors), 95 hash blocks 1 0 - 4928307200: 0f96e8b06a62b0eccef8fb52423750eb 1 0 - 4928307200: af41df3c21016755176307fff7d92c68fffa2616 1 0 - 4928307200: 1da75f52de5686d0cafb336a5ebd6b3b8774bd3bc4ce7f687949e1c9199c5ada 2 4928307200 - 9856614400: 98d0bcc3acf20bc1cf2000a87fb38d68 2 4928307200 - 9856614400: ea1027ea03fbad3d6eb79c81d695d80d8b8654ae 2 4928307200 - 9856614400: 4f8262566c624ecdf3646dfc7e4280db50ba3fff8fb7613afa8aefae5f86d3bf 3 9856614400 - 14784921600: 194f06135923b6216f99e3ce02fbcf42 3 9856614400 - 14784921600: 2360131a08ca8be0f3d733fe84890a46b7a1edff 3 9856614400 - 14784921600: b3381d95f1dc3d1f46850c53687087ae769a234c9defd211376c1d318a142baf . . . 93 453404262400 - 458332569600: c740178717b9f1b3417c9db86dd4c7b0 93 453404262400 - 458332569600: e7a1ce0964cbb6c0c5d23ef8ff68030ee8cd7bfe 93 453404262400 - 458332569600: 435cb952180e56f9fa974ed67f4e56781ace6f1ed378d6cbc829074da62ffdce 94 458332569600 - 463260876800: 7f69957ace5d9c9169cd565bb409b51c 94 458332569600 - 463260876800: 44cfa4e8b3b800399099591eed6a330402724e84 94 458332569600 - 463260876800: 864479b9675434bf86c3aef91dc4a24d23a4a1759a864bbac586b414dd515a8b 95 463260876800 - 463787081728: aaa9cd144524404f697b7877158f793c 95 463260876800 - 463787081728: d8c6f3b1fa91d97ecc2d6fb34c9d863c356d0db2 95 463260876800 - 463787081728: 38f55b02271da8bd33471e180590ca9ad0f5b12982005c0c11834abde9909678 Entire Drive hashes Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec Total (sha1): f7069edcbeac863c88deced82159f22da96be99b Total (sha256): ec8ef011494ba6da18f74c47547c3e74e7180585096a830f9247a98ef613bb1d Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/newdcfldd/dcfldd if=/dev/rdisk1 status=off bs=4096 errlog=/tmp/mnt1/DA_06_USB_INTEL/Admin/errorlog.txt hashwindow=4700M hash=md5,sha1,sha256 hashlog=/tmp/mnt1/DA_06_USB_INTEL/Admin/hashlog.txt conv=noerror,sync split=660M splitformat=nnn of=/tmp/mnt1/DA_06_USB_INTEL/Images/IMAGE_0001 Source Device: /dev/rdisk1 USB SAMSUNG SP0612N - 55.94 GB Source Device Size: 60060155904 Bytes 117304992 Sectors Destination Device: /dev/disk8 USB ST375033 0AS - 698.64 GB Hash Options: MD5,SHA1,SHA256 Segmentation: 660M Block Size: 4096 Bytes Imaging Method: New DCFLDD 1.3.4 Hash Values: TOTAL (MD5): EE217BC4FA4F3D1B4021D29B065AA9EC TOTAL (SHA1): F7069EDCBEAC863C88DECED82159F22DA96BE99B TOTAL (SHA256): EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D Source SHA1 rehash: F7069EDCBEAC863C88DECED82159F22DA96BE99B Settings: acquisition_procedure A bootMedia CF masterImage 2 hashwindow 4.7GB Image file segments 1 501 692060160 Dec 31 13:50 IMAGE_0001.002.dmgpart

Test Case DA-06-USB-INTEL MacQuisition Version 2.2

```
     2   501  692060160 Dec 31 13:58 IMAGE_0001.003.dmgpart
     3   501  692060160 Dec 31 14:07 IMAGE_0001.004.dmgpart
   . . .
    85   501  692060160 Jan  1 01:40 IMAGE_0001.086.dmgpart
    86   501  542982144 Jan  1 01:47 IMAGE_0001.087.dmgpart
    87   501  692060160 Dec 31 13:41 IMAGE_0001.dmg
```

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.	block hashes incorrect
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results not achieved

6.2.8 DA-07-CF

Test Case DA-07-CF MacQuisition Version 2.2	
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:	Richelieu
Test Date:	Wed Feb 6 11:24:06 2008
Drives:	src(C1-CF) dst (none) other (8F-FU2)
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:	1 Total: 776df8b4d2589e21debcf589edc16d78 Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/dcfldd if=/dev/rdisk8 status=off 2>/tmp/mnt1/DA_07_CF/Admin/errorlog.txt bs=4096 hashwindow=1500M hashlog=/tmp/mnt1/DA_07_CF/Admin/hashlog.txt conv=noerror,sync | /Applications/MacQuisition_2.2UB.app/Contents/MacOS/ddsplit - -m -b 1000m /tmp/mnt1/DA_07_CF/Images/IMAGE_0001 Source Device: /dev/rdisk8 USB ICSI CF Card CF - 0.24 GB Source Device Size: 257949696 Bytes 503808 Sectors Destination Device: /dev/disk9 USB SEAGATE ST9402115A - 37.26 GB Hash Options: MD5 Segmentation: 1000m Block Size: 4096 Bytes Hash Block Size: 1500M Imaging Method: Hashwindow DCFLDD 1.0 Source SHA1 rehash: 5B8235178DF99FA307430C088F81746606638A0B Settings: acquisition_procedure E bootMedia CF masterImage 2 hashwindow 1.5G Image file segments 1 257949696 Feb 6 11:40 IMAGE_0001.dmg

Test Case DA-07-CF MacQuisition Version 2.2	
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 tested
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis:	Expected results achieved

6.2.9 DA-07-PART

Test Case DA-07-PART MacQuisition Version 2.2	
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:	SamTyler
Test Date:	Mon Feb 4 15:55:38 2008
Drives:	src(D5-THUMB) dst (none) other (C2-CF)
Source Setup:	src hash (SHA1): < D68520EF74A336E49DCCF83815B7B08FDC53E38A > src hash (MD5): < C843593624B2B3B878596D8760B19954 > Reference MD5 hashes, Win size: 204800 (sectors) 1 0 - 204799 C7200DA309F57220435E8131DA8203F9 - 2 204800 - 409599 B1E353F9081F76A9C2D8272F65B1EB08 - 3 409600 - 505855 3824541B13B93F0C15DA0A105BC51DC6 - 505856 total sectors (258998272 bytes) Model (usb2.0Flash Disk) 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 hashes, Win size: 104857600 bytes (204800 sectors), 1 hash blocks 1 0 - 104857600: c7200da309f57220435e8131da8203f9 2 Total (md5): c7200da309f57220435e8131da8203f9 Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/newdcfldd/dcfldd if=/dev/rdisk2 bs=4096 errlog=/tmp/mnt1/DA_07_PART/Admin/errorlog.txt count=25600 hash=md5 hashwindow=100M hashlog=/tmp/mnt1/DA_07_PART/Admin/hashlog.txt conv=noerror,sync split=1G splitformat=nnn of=/tmp/mnt1/DA_07_PART/Images/IMAGE_0001 Source Device: /dev/rdisk2 USB CRUCIAL usb2.0Flash Disk - 0.24 GB Source Device Size: 258998272 Bytes 505856 Sectors Destination Device: /dev/disk3 FIREWIRE LEXAR AT A FLASH - 0.24 GB Hash Options: MD5 Segmentation: 1G Block Size: 4096 Bytes Source Count: 25600 Imaging Method: New DCFLDD 1.3.4 Hash Values: TOTAL (MD5): C7200DA309F57220435E8131DA8203F9 Source SHA1 rehash: D68520EF74A336E49DCCF83815B7B08FDC53E38A

Test Case DA-07-PART MacQuisition Version 2.2	
	Settings: acquisition_procedure B bootMedia DVD masterImage 2 hashwindow 100M Image file segments 1 IMAGE_0001.dmg
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.	wrong sectors acquired
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	as expected
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis:	Expected results not achieved

6.2.10 DA-07-THUMB

<table>
<tr><td colspan="2">Test Case DA-07-THUMB MacQuisition Version 2.2</td></tr>
<tr><td>Case Summary:</td><td>DA-07 Acquire a digital source of type DS to an image file.</td></tr>
<tr><td>Assertions:</td><td>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.</td></tr>
<tr><td>Tester Name:</td><td>brl</td></tr>
<tr><td>Test Host:</td><td>SamTyler</td></tr>
<tr><td>Test Date:</td><td>Tue Jan 29 11:27:12 2008</td></tr>
<tr><td>Drives:</td><td>src(D5-THUMB) dst (none) other (1D-SATA)</td></tr>
<tr><td>Source Setup:</td><td>src hash (SHA1): < D68520EF74A336E49DCCF83815B7B08FDC53E38A >
src hash (MD5): < C843593624B2B3B878596D8760B19954 >
505856 total sectors (258998272 bytes)
Model (usb2.0Flash Disk) 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</td></tr>
<tr><td>Log Highlights:</td><td>Tool hashes, Win size: 258998272 bytes (505856 sectors), 1 hash blocks
1 0 - 258998272: c843593624b2b3b878596d8760b19954
2 Total (md5): c843593624b2b3b878596d8760b19954
No acquisition log file

Source SHA1 rehash: D68520EF74A336E49DCCF83815B7B08FDC53E38A
Settings: acquisition_procedure F
bootMedia DVD
masterImage 2
hashwindow 2G

Image file segments
1 258998272 Jan 29 18:00 IMAGE_001.000</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 tested</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
</table>
</td></tr>
</table>

Test Case DA-07-THUMB MacQuisition Version 2.2		
	AO-24 Source is unchanged by acquisition.	as expected
Analysis:	Expected results achieved	

6.2.11 DA-08-DCO

Test Case DA-08-DCO MacQuisition Version 2.2	
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:	Richelieu
Test Date:	Wed Feb 6 14:23:57 2008
Drives:	src(15-SATA) dst (none) other (1D-SATA)
Source Setup:	src hash (SHA1): < 76B22DDE84CE61F090791DDBB79057529AAF00E1 > src hash (MD5): < 9B4A9D124107819A9CE6F253FE7DC675 > Reference MD5 hashes, Win size: 8192000 (sectors) 1 0 - 8191999 38956C56774D1272F07D5D3483C4D302 - 2 8192000 - 16383999 D17790220FE1E98698F9E9F207B86A88 - 3 16384000 - 24575999 15FF3FBFF3EA1F0FF2E193820264518A - . . . 18 139264000 - 147455999 FD7BE579B5DC787DE06A8A393CB4D8FD - 19 147456000 - 155647999 F75D182B5413F3A0F6BDEDBB7813D7C6 - 20 155648000 - 156301487 77717ED10E77A656FF7002F77F009213 - 156301488 total sectors (80026361856 bytes) Model (0JD-00HKA0) serial # (WD-WMAJ91513490) Hashes with DCO in place: md5: E5F8B277A39ED0F49794E9916CD62DD9 sha1.txt: AC64CF1B3736BB2FE40C14D871E6F207BC432C2F
Log Highlights:	Tool hashes, Win size: 4194304000 bytes (8192000 sectors), 18 hash blocks 1 0 - 4194304000: 38956c56774d1272f07d5d3483c4d302 2 4194304000 - 8388608000: d17790220fe1e98698f9e9f207b86a88 3 8388608000 - 12582912000: 15ff3fbff3ea1f0ff2e193820264518a . . . 16 62914560000 - 67108864000: 415ac13ee9f765864f5a1e4d276d45cf 17 67108864000 - 71303168000: 6c668e5f1f3ba1a0ad6594fac193f5e6 18 71303168000 - 71680000512: 24ecdb84c1219e709c1cc8a110dc1f13 Entire Drive hashes Total (md5): e5f8b277a39ed0f49794e9916cd62dd9 Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/newdcfldd/dcfldd if=/dev/rdisk0 status=off bs=32768 errlog=/tmp/mnt1/DA_08_DCO/Admin/errorlog.txt hashwindow=4000M hash=md5 hashlog=/tmp/mnt1/DA_08_DCO/Admin/hashlog.txt conv=noerror,sync split=2G splitformat=nnn of=/tmp/mnt1/DA_08_DCO/Images/IMAGE_0001 Source Device: /dev/rdisk0 ATA WDC WD800JD-00HKA0 - 66.76 GB Source Device Size: 71680000512 Bytes 140000001 Sectors Destination Device: /dev/disk1 SATA ST3320620AS - 298.09 GB Hash Options: MD5

Test Case DA-08-DCO MacQuisition Version 2.2

```
Segmentation: 2G
Block Size: 32768 Bytes
Imaging Method: New DCFLDD 1.3.4
Hash Values:
TOTAL (MD5): E5F8B277A39ED0F49794E9916CD62DD9

Source SHA1 rehash: AC64CF1B3736BB2FE40C14D871E6F207BC432C2F
Settings: acquisition_procedure A
bootMedia DVD
masterImage 2
hashwindow 4G

Image file segments
     1   2147483648 Feb  7 09:37 IMAGE_0001.002.dmgpart
     2   2147483648 Feb  7 09:39 IMAGE_0001.003.dmgpart
     3   2147483648 Feb  7 09:40 IMAGE_0001.004.dmgpart
   . . .
    32   2147483648 Feb  7 10:28 IMAGE_0001.033.dmgpart
    33    813072384 Feb  7 10:29 IMAGE_0001.034.dmgpart
    34   2147483648 Feb  7 09:35 IMAGE_0001.dmg
```

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.	DCO not acquired
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.	as expected
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results not achieved

6.2.12 DA-08-SATA28

Test Case DA-08-SATA28 MacQuisition Version 2.2	
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:	Richelieu
Test Date:	Tue Feb 5 15:29:13 2008
Drives:	src(23-SATA) dst (none) other (1D-SATA)
Source Setup:	src hash (SHA1): < 7EC47699DE37A7DB70FBDF80CE69B24C9A8D43A9 > src hash (MD5): < A0CF255EF706D8E2048EA2B57AB0D6C4 > Reference MD5 hashes, Win size: 1228800 (sectors) 1 0 - 1228799 1122E56AEEBCE41D8DACF2374570F8A6 - 2 1228800 - 2457599 EC7896FAD0E70A7416926955FE21460A - 3 2457600 - 3686399 4685ACB3F7614891B4F9D7363D8E06DF - . . . 126 153600000 - 154828799 C9E88A4474B9AF8B34EC19183AEC3629 - 127 154828800 - 156057599 7457A0EF4F3AC93C5B5092AEF677E315 - 128 156057600 - 156301487 896C935BA20F5F0BBCEFA2B27BF0FB04 - 156301488 total sectors (80026361856 bytes) Model (ST380013AS) serial # (5JVCYJCF) HPA created Hashes with HPA in place md5: 95D719CC0B895B0FB3740770A9D4F894 sha1: EE5B26B34DEBF089EFF45EFCACBC125CF9C37F49
Log Highlights:	Tool hashes, Win size: 629145600 bytes (1228800 sectors), 113 hash blocks 1 0 - 629145600: 1122e56aeebce41d8dacf2374570f8a6 2 629145600 - 1258291200: ec7896fad0e70a7416926955fe21460a 3 1258291200 - 1887436800: 4685acb3f7614891b4f9d7363d8e06df . . . 111 69206016000 - 69835161600: 8cd0901e052064adc7f613ee787b32d8 112 69835161600 - 70464307200: 9a7c97ac7560e1febf915e4f672a112b 113 70464307200 - 71093452800: b3109b94c141f836472eb7e2b8355d09 Entire Drive hashes Total: 95d719cc0b895b0fb3740770a9d4f894 Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/dcfldd if=/dev/rdisk1 status=off 2>/tmp/mnt1/DA-08-SATA28/Admin/errorlog.txt bs=4096 hashwindow=600M hashlog=/tmp/mnt1/DA-08-SATA28/Admin/hashlog.txt conv=noerror,sync | /Applications/MacQuisition_2.2UB.app/Contents/MacOS/ddsplit - -m -b 610m /tmp/mnt1/DA-08-SATA28/Images/IMAGE_0001 Source Device: /dev/rdisk1 ATA ST380013AS - 66.76 GB

Test Case DA-08-SATA28 MacQuisition Version 2.2

```
Source Device Size: 71680000512 Bytes 140000001 Sectors
Destination Device: /dev/disk0 SATA SAMSUNG SP2004C - 186.31 GB
Hash Options: MD5
Segmentation: 610m
Block Size: 4096 Bytes
Hash Block Size: 600M
Imaging Method: Hashwindow DCFLDD 1.0

Source SHA1 rehash: EE5B26B34DEBF089EFF45EFCACBC125CF9C37F49
Settings: acquisition_procedure A
bootMedia CF
masterImage 2
hashwindow 600M

Image file segments
     1  639631360 Feb  5 15:44 IMAGE_0001.002.dmgpart
     2  639631360 Feb  5 15:45 IMAGE_0001.003.dmgpart
     3  639631360 Feb  5 15:47 IMAGE_0001.004.dmgpart
   . . .
   111  639631360 Feb  5 17:58 IMAGE_0001.112.dmgpart
   112   41291776 Feb  5 17:58 IMAGE_0001.113.dmgpart
   113  639631360 Feb  5 15:43 IMAGE_0001.dmg
```

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.	HPA not acquired
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.	last block hash missing
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results not achieved

6.2.13 DA-08-SATA28-INTEL

Test Case DA-08-SATA28-INTEL MacQuisition Version 2.2	
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:	D'Artagnan
Test Date:	Wed Dec 17 09:25:43 2008
Drives:	src(23-SATA) dst (none) other (40-SATA)
Source Setup:	src hash (SHA1): < 7EC47699DE37A7DB70FBDF80CE69B24C9A8D43A9 > src hash (MD5): < A0CF255EF706D8E2048EA2B57AB0D6C4 > Reference MD5 hashes, Win size: 1228800 (sectors) 1 0 - 1228799 1122E56AEEBCE41D8DACF2374570F8A6 - 2 1228800 - 2457599 EC7896FAD0E70A7416926955FE21460A - 3 2457600 - 3686399 4685ACB3F7614891B4F9D7363D8E06DF - . . . 126 153600000 - 154828799 C9E88A4474B9AF8B34EC19183AEC3629 - 127 154828800 - 156057599 7457A0EF4F3AC93C5B5092AEF677E315 - 128 156057600 - 156301487 896C935BA20F5F0BBCEFA2B27BF0FB04 - 156301488 total sectors (80026361856 bytes) Model (ST380013AS) serial # (5JVCYJCF) HPA created Hashes with HPA in place md5: 95D719CC0B895B0FB3740770A9D4F894 sha1: EE5B26B34DEBF089EFF45EFCACBC125CF9C37F49
Log Highlights:	Tool hashes, Win size: 629145600 bytes (1228800 sectors), 113 hash blocks 1 0 - 629145600: 1122e56aeebce41d8dacf2374570f8a6 2 629145600 - 1258291200: ec7896fad0e70a7416926955fe21460a 3 1258291200 - 1887436800: 4685acb3f7614891b4f9d7363d8e06df . . . 111 69206016000 - 69835161600: 8cd0901e052064adc7f613ee787b32d8 112 69835161600 - 70464307200: 9a7c97ac7560e1febf915e4f672a112b 113 70464307200 - 71093452800: b3109b94c141f836472eb7e2b8355d09 Entire Drive hashes Total: 95d719cc0b895b0fb3740770a9d4f894 Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/dcfldd if=/dev/disk0 status=off 2>/tmp/mnt1/DA_08_SATA28_INTEL/Admin/errorlog.txt bs=4096 hashwindow=600M hashlog=/tmp/mnt1/DA_08_SATA28_INTEL/Admin/hashlog.txt conv=noerror,sync | /Applications/MacQuisition_2.2UB.app/Contents/MacOS/ddsplit - -m -b 610m /tmp/mnt1/DA_08_SATA28_INTEL/Images/IMAGE_0001

Test Case DA-08-SATA28-INTEL MacQuisition Version 2.2

```
Source Device: /dev/disk0 OTHER ST380013AS - 66.76 GB
Source Device Size: 71680000512 Bytes 140000001 Sectors
Destination Device: /dev/disk1 OTHER ST3160815AS - 149.05 GB
Hash Options: MD5
Segmentation: 610m
Block Size: 4096 Bytes
Hash Block Size: 600M
Imaging Method: Hashwindow DCFLDD 1.0

Source SHA1 rehash: EE5B26B34DEBF089EFF45EFCACBC125CF9C37F49
Settings: acquisition_procedure A
bootMedia CF
masterImage 2
hashwindow 600M

Image file segments
     1   639631360 Dec 17 14:51 IMAGE_0001.002.dmgpart
     2   639631360 Dec 17 14:52 IMAGE_0001.003.dmgpart
     3   639631360 Dec 17 14:53 IMAGE_0001.004.dmgpart
   . . .
   111   639631360 Dec 17 21:07 IMAGE_0001.112.dmgpart
   112    41291776 Dec 17 21:07 IMAGE_0001.113.dmgpart
   113   639631360 Dec 17 14:50 IMAGE_0001.dmg
```

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.	HPA not acquired
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.	last block hash missing
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results not achieved

6.2.14 DA-08-SATA48

Test Case DA-08-SATA48 MacQuisition Version 2.2	
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:	Aramis
Test Date:	Mon Feb 4 17:51:39 2008
Drives:	src(1E-SATA) dst (none) other (1D-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 Hashes with HPA in place md5: 3655FA5086B6864154898533DFAE2442 sha1: EB1045B57DE7CDA28FE9504E3FA238D0B5DBC587
Log Highlights:	Destination setup 625142448 sectors wiped with 1D Comparision of original to clone Sectors compared: 560000001 Sectors match: 560000001 Sectors differ: 0 Bytes differ: 0 Diffs range Source (560000001) has 65142447 fewer sectors than destination (625142448) Zero fill: 7 Src Byte fill (1E): 0 Dst Byte fill (1D): 65142440 Other fill: 0 Other no fill: 0 Zero fill range: 560000001-560000007 Src fill range: Dst fill range: 560000008-625142447 Other fill range: Other not filled range: 0 source read errors, 0 destination read errors 1 63eb5cbc5ddd232addb0c6a4db9b9e73 - Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/dcfldd if=/dev/rdisk0 bs=4096 conv=noerror,sync | /Applications/MacQuisition_2.2UB.app/Contents/MacOS/tpipe "/Applications/MacQuisition_2.2UB.app/Contents/MacOS/md5sum > /tmp/mnt1/DA_08_SATA48/Admin/hashlog.txt" |

Test Case DA-08-SATA48 MacQuisition Version 2.2

```
        /Applications/MacQuisition_2.2UB.app/Contents/MacOS/ddsplit - -m -b
        1000m /tmp/mnt1/DA_08_SATA48/Images/IMAGE_0001
        2>/tmp/mnt1/DA_08_SATA48/Admin/errorlog.txt
Source Device: /dev/rdisk0 ATA ST3320620AS - 267.03 GB
Source Device Size: 286720000512 Bytes 560000001 Sectors
Destination Device: /dev/disk1 SATA ST3320620AS - 298.09 GB
Hash Options: MD5
Segmentation: 1000m
Block Size: 4096 Bytes
Imaging Method: Tpipe DCFLDD 1.0

Source SHA1 rehash: EB1045B57DE7CDA28FE9504E3FA238D0B5DBC587
Settings: acquisition_procedure A
bootMedia CF
masterImage 2

Image file segments
     1   1048576000 Feb  4 18:05 IMAGE_0001.002.dmgpart
     2   1048576000 Feb  4 18:06 IMAGE_0001.003.dmgpart
     3   1048576000 Feb  4 18:08 IMAGE_0001.004.dmgpart
   . . .
   272   1048576000 Feb  5 01:17 IMAGE_0001.273.dmgpart
   273    458756096 Feb  5 01:17 IMAGE_0001.274.dmgpart
   274   1048576000 Feb  4 18:03 IMAGE_0001.dmg
```

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.	HPA not acquired
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 tested
AO-23 Logged information is correct.	hash incorrect
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results not achieved

6.2.15 DA-09

Test Case DA-09 MacQuisition Version 2.2	
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:	Richelieu
Test Date:	Tue Feb 12 15:07:19 2008
Drives:	src(ED-BAD-CPR4) dst (none) other (1D-SATA)
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 setup 156301488 sectors wiped with 30 Comparision of original to clone Sectors compared: 120103200 Sectors match: 6160328 Sectors differ: 113942872 Bytes differ: 718653317 Diffs range 6160328-120103199 Source (120103200) has 36198288 fewer sectors than destination (156301488) Zero fill: 0 Src Byte fill (ED): 0 Dst Byte fill (30): 36198288 Other fill: 0 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: 120103200-156301487 Other fill range:

Test Case DA-09 MacQuisition Version 2.2

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


Tool hashes, Win size: 629145600 bytes (1228800 sectors), 97 hash blocks
1 0 - 629145600: f532efb98efcb2a027e00ebac1673449
2 629145600 - 1258291200: 24126e88aa022b767ca7a3699bbed814
3 1258291200 - 1887436800: 8be417c6588f770de56c9f45ca00de8d
          . . .
95 59139686400 - 59768832000: 7f70ef531b91da7fae4a934de5a1febb
96 59768832000 - 60397977600: ef05113858861296c32d6344c5fe5265
97 60397977600 - 61027123200: e5bf0407c6b06cdd24b3ddd4614b30ac

Entire Drive hashes
Total: 20c4b19c54f679a0e851d958192c28b1
Command Line:
/Applications/MacQuisition_2.2UB.app/Contents/MacOS/dcfldd
        if=/dev/rdisk1 status=off 2>/tmp/mnt1/DA-09/Admin/errorlog.txt
        bs=4096 hashwindow=600M hashlog=/tmp/mnt1/DA-09/Admin/hashlog.txt
        conv=noerror,sync |
        /Applications/MacQuisition_2.2UB.app/Contents/MacOS/ddsplit - -m -b
        1000m /tmp/mnt1/DA-09/Images/IMAGE_0001
Source Device: /dev/rdisk1 ATA Maxtor 6Y060M0 - 57.27 GB
Source Device Size: 61492838400 Bytes 120103200 Sectors
Destination Device: /dev/disk0 SATA ST3320620AS - 298.09 GB
Hash Options: MD5
Segmentation: 1000m
Block Size: 4096 Bytes
Hash Block Size: 600M
Imaging Method: Hashwindow DCFLDD 1.0
Read error summary
26 I/O errors logged
1 different run lengths observed in 1 runs
1 runs of length 113942872
113942872 sectors differ
    0 zero filled and 0 varying non-zero filled
120102992 sectors (61492731904 bytes) imaged
Settings: acquisition_procedure A
bootMedia CF
masterImage 2
hashwindow 600MB

Image file segments
     1   1048576000 Feb 12 10:26 IMAGE_0001.002.dmgpart
     2   1048576000 Feb 12 10:27 IMAGE_0001.003.dmgpart
     3   1048576000 Feb 12 10:29 IMAGE_0001.004.dmgpart
   . . .
    57   1048576000 Feb 12 11:35 IMAGE_0001.058.dmgpart
    58    675323904 Feb 12 11:36 IMAGE_0001.059.dmgpart
    59   1048576000 Feb 12 10:25 IMAGE_0001.dmg
```

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.	some sectors differ
AM-09 Error logged.	as expected
AM-10 Benign fill replaces inaccessible sectors.	undetermined fill source
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 tested
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	not checked

Test Case DA-09 MacQuisition Version 2.2	
Analysis:	Expected results not achieved

6.2.16 DA-09-134

Test Case DA-09-134 MacQuisition Version 2.2	
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:	Richelieu
Test Date:	Thu Feb 21 13:15:22 2008
Drives:	src(ED-BAD-CPR4) dst (33-SATA) other (36-SATA)
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 setup 390721968 sectors wiped with 33 Comparision of original to clone Sectors compared: 120103200 Sectors match: 6160320 Sectors differ: 113942880 Bytes differ: 852583117 Diffs range 6160320-120103199 Source (120103200) has 270618768 fewer sectors than destination (390721968) Zero fill: 0 Src Byte fill (ED): 0 Dst Byte fill (33): 270618768 Other fill: 0 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: 120103200-390721967 Other fill range:

Test Case DA-09-134 MacQuisition Version 2.2

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


Tool hashes, Win size: 2147483648 bytes (4194304 sectors), 29 hash blocks
1 0 - 2147483648: fc8361568e79a544767aec3513744788
1 0 - 2147483648: 31df0d87d382e6345420cbff28a0f4be3c9543d7
2 2147483648 - 4294967296: c6fd63e66836121d320bd7cebff22e8a
2 2147483648 - 4294967296: 74a63e0da43717f01fe18f05815d62a95059fb7a
3 4294967296 - 6442450944: ae837a5c3bb2243677f37a842d915828
3 4294967296 - 6442450944: 80114c917fe1a139070bc405082d82d7393e5053
        . . .
27 55834574848 - 57982058496: 602c6afb8a11aff1990cbaef89e6bbb1
27 55834574848 - 57982058496: d1be0e9d2ceccae2000d8a03c30f724a9c95eaed
28 57982058496 - 60129542144: 72221a45f3056514612c983e79dc8d0f
28 57982058496 - 60129542144: f0760d07e8a63c29d3699dd1bf5175a4ff978c49
29 60129542144 - 61491920896: c033afbaeeceb59deaa438f04ccb34b1
29 60129542144 - 61491920896: 1149a4179f66365e33c83477cd07ab2aafa623bc

Entire Drive hashes
Total (md5): cb637598f944ec665bf44d9c4299fab3
Total (sha1): 82454abf742ebfc04d15860df530aa2c57b6d912
Command Line:
/Applications/MacQuisition_2.2UB.app/Contents/MacOS/newdcfldd/dcfldd
       if=/dev/rdisk0 status=off bs=32768
       errlog=/tmp/mnt1/DA-09-134 /Admin/errorlog.txt hashwindow=2G
       hash=md5,sha1 hashlog=/tmp/mnt1/DA-09-134 /Admin/hashlog.txt
       conv=noerror,sync split=2G splitformat=nnn
       of=/tmp/mnt1/DA-09-134 /Images/IMAGE_0001
Source Device: /dev/rdisk0 ATA Maxtor 6Y060M0 - 57.27 GB
Source Device Size: 61492838400 Bytes 120103200 Sectors
Destination Device: /dev/disk1 SATA SAMSUNG SP2004C - 186.31 GB
Hash Options: MD5,SHA1
Segmentation: 2G
Block Size: 32768 Bytes
Imaging Method: New DCFLDD 1.3.4
Hash Values:
TOTAL (MD5): CB637598F944EC665BF44D9C4299FAB3
TOTAL (SHA1): 82454ABF742EBFC04D15860DF530AA2C57B6D912
Read error summary
14 I/O errors logged
1 different run lengths observed in 1 runs
1 runs of length 113942880
113942880 sectors differ
    0 zero filled and 0 varying non-zero filled
120102336 sectors (61492396032 bytes) imaged
Settings: macquisition_procedure A
bootMedia CF
masterImage 2
hashwindow 2GB

Image file segments
     1   2147483648 Feb 21 18:27 IMAGE_0001.002.dmgpart
     2   2147483648 Feb 21 18:31 IMAGE_0001.003.dmgpart
     3   2147483648 Feb 21 18:35 IMAGE_0001.004.dmgpart
   . . .
    27   2147483648 Feb 21 19:37 IMAGE_0001.028.dmgpart
    28   1362853888 Feb 21 19:38 IMAGE_0001.029.dmgpart
    29   2147483648 Feb 21 18:25 IMAGE_0001.dmg
```

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.	some sectors differ

Test Case DA-09-134 MacQuisition Version 2.2		
	AM-09 Error logged.	as expected
	AM-10 Benign fill replaces inaccessible sectors.	undetermined fill source
	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 tested
	AO-23 Logged information is correct.	as expected
	AO-24 Source is unchanged by acquisition.	not checked
Analysis:	Expected results not achieved	

6.2.17 DA-09-134-INTEL

Test Case DA-09-134-INTEL MacQuisition Version 2.2	
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:	D'Artagnan
Test Date:	Mon Dec 22 10:30:10 2008
Drives:	src(ED-BAD-CPR4) dst (4E-SATA) other (3D-SATA)
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 setup 156301488 sectors wiped with 4E Comparision of original to clone Sectors compared: 120103200 Sectors match: 120101984 Sectors differ: 1216 Bytes differ: 621376 Diffs range 6160320-6160383, 10041152-10041215, 10041984-10042047, 10118592-10118655, 10209408-10209471, 11256512-11256575, 14115648-14115711, 14778368-14778879, 14778944-14779135, 14779264-14779327 Source (120103200) has 36198288 fewer sectors than destination (156301488) Zero fill: 32 Src Byte fill (ED): 0 Dst Byte fill (4E): 36198256 Other fill: 0 Other no fill: 0 Zero fill range: 120103200-120103231

Test Case DA-09-134-INTEL MacQuisition Version 2.2

```
Src fill range:
Dst fill range:  120103232-156301487
Other fill range:
Other not filled range:
0 source read errors, 0 destination read errors


Tool hashes, Win size: 2147483648 bytes (4194304 sectors), 29 hash blocks
1 0 - 2147483648: fc8361568e79a544767aec3513744788
1 0 - 2147483648: 31df0d87d382e6345420cbff28a0f4be3c9543d7
2 2147483648 - 4294967296: 1e4296c039cc172ce6f6aa47ef42fb2e
2 2147483648 - 4294967296: 093b90499abac238dea6b9062ff6fc6cc790c1e8
3 4294967296 - 6442450944: 227bc70a12b79931ebb46c1d0869457a
3 4294967296 - 6442450944: ac6def47a9f8a2d00a43432783bad28b76233f7a
         . . .
27 55834574848 - 57982058496: 3529f7e3392c0df83488a9c51a8a5717
27 55834574848 - 57982058496: 72d8aa81a83b3c4162968e47bb4b88828948dbf8
28 57982058496 - 60129542144: e5114dd22f0f992c3930a1d58cbaa48d
28 57982058496 - 60129542144: 5dbcedfe2c0d7740734be98e13a759178c2c4c7b
29 60129542144 - 61492215808: 773ca98e338428aa5da157100e066268
29 60129542144 - 61492215808: 6e43fc55cd8fd6d96b5161b73fd7a38183f7f45b

Entire Drive hashes
Total (md5): 9ab6cdac9403d37945816ddfe8d461f4
Total (sha1): 3f5f1d8bdb63a84a41d3e2ae84d05147676b2449
Command Line:
/Applications/MacQuisition_2.2UB.app/Contents/MacOS/newdcfldd/dcfldd
       if=/dev/rdisk0 status=off bs=32768
       errlog=/tmp/mnt1/DA_09_134_INTEL/Admin/errorlog.txt hashwindow=2G
       hash=md5,sha1 hashlog=/tmp/mnt1/DA_09_134_INTEL/Admin/hashlog.txt
       conv=noerror,sync split=2G splitformat=nnn
       of=/tmp/mnt1/DA_09_134_INTEL/Images/IMAGE_0001
Source Device: /dev/rdisk0 OTHER Maxtor 6Y060M0 - 57.27 GB
Source Device Size: 61492838400 Bytes 120103200 Sectors
Destination Device: /dev/disk2 OTHER ST3750330AS - 698.64 GB
Hash Options: MD5,SHA1
Segmentation: 2G
Block Size: 32768 Bytes
Imaging Method: New DCFLDD 1.3.4
Hash Values:
TOTAL (MD5): 9AB6CDAC9403D37945816DDFE8D461F4
TOTAL (SHA1): 3F5F1D8BDB63A84A41D3E2AE84D05147676B2449
Read error summary
19 I/O errors logged
3 different run lengths observed in 10 runs
8 runs of length 64
1 runs of length 192
1 runs of length 512
1216 sectors differ
    1216 zero filled and 0 varying non-zero filled
120103232 sectors (61492854784 bytes) imaged
Settings: acquisition_procedure A
bootMedia CF
masterImage 2
hashwindow 2G

Image file segments
     1   501  2147483648 Dec 22 15:53 ../Images/IMAGE_0001.002.dmgpart
     2   501  2147483648 Dec 22 15:56 ../Images/IMAGE_0001.003.dmgpart
     3   501  2147483648 Dec 22 16:00 ../Images/IMAGE_0001.004.dmgpart
   . . .
    27   501  2147483648 Dec 22 16:35 ../Images/IMAGE_0001.028.dmgpart
    28   501  1363312640 Dec 22 16:36 ../Images/IMAGE_0001.029.dmgpart
    29   501  2147483648 Dec 22 15:52 ../Images/IMAGE_0001.dmg
```

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

Test Case DA-09-134-INTEL MacQuisition Version 2.2		
	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.	some sectors differ
	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 tested
	AO-23 Logged information is correct.	as expected
	AO-24 Source is unchanged by acquisition.	not checked
Analysis:	Expected results not achieved	

6.2.18 DA-09-INTEL

Test Case DA-09-INTEL MacQuisition Version 2.2	
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:	D'Artagnan
Test Date:	Wed Jan 7 12:21:22 2009
Drives:	src(ED-BAD-CPR4) dst (04-SATA) other (3D-SATA)
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 setup 156301488 sectors wiped with 4 Comparision of original to clone Sectors compared: 120103200 Sectors match: 120103060 Sectors differ: 140 Bytes differ: 34354 Diffs range 6160328-6160335, 6160362-6160367, 10041157-10041159, 10041995-10041999, 10118634-10118639, 10209448-10209455, 11256569-11256575, 14115689-14115695, 14778391-14778399, 14778449-14778455, 14778479, 14778517-14778527, 14778551, 14778607, 14778626-14778631, 14778650-14778655, 14778668-14778671, 14778709-14778711, 14778727, 14778747-14778751, 14778772-14778775, 14778781-14778783, 14778870-14778871, 14778949-14778951, 14778953-14778959, 14779038-14779039, 14779113-14779119, 14779321-14779327 Source (120103200) has 36198288 fewer sectors than destination (156301488) Zero fill: 0

Test Case DA-09-INTEL MacQuisition Version 2.2	
	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 hashes, Win size: 629145600 bytes (1228800 sectors), 97 hash blocks 1 0 - 629145600: f532efb98efcb2a027e00ebac1673449 2 629145600 - 1258291200: 24126e88aa022b767ca7a3699bbed814 3 1258291200 - 1887436800: 8be417c6588f770de56c9f45ca00de8d . . . 95 59139686400 - 59768832000: e23bd7ae37cd3a8a02b34e72d00198da 96 59768832000 - 60397977600: 57e201895e780bf4404771d43966c906 97 60397977600 - 61027123200: fdde316378c03a86241cda89212404b6 Entire Drive hashes Total: 1c5de13b2d97b56877047bac5d15f6ca Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/dcfldd if=/dev/rdisk0 status=off 2>/tmp/mnt1/DA09INTEL/Admin/errorlog.txt bs=4096 hashwindow=600M hashlog=/tmp/mnt1/DA09INTEL/Admin/hashlog.txt conv=noerror,sync | /Applications/MacQuisition_2.2UB.app/Contents/MacOS/ddsplit - -m -b 1000m /tmp/mnt1/DA09INTEL/Images/IMAGE_0001 Source Device: /dev/rdisk0 OTHER Maxtor 6Y060M0 - 57.27 GB Source Device Size: 61492838400 Bytes 120103200 Sectors Destination Device: /dev/disk1 OTHER ST3750330AS - 698.64 GB Hash Options: MD5 Segmentation: 1000m Block Size: 4096 Bytes Hash Block Size: 600M Imaging Method: Hashwindow DCFLDD 1.0 Read error summary 30 I/O errors logged 10 different run lengths observed in 28 runs 4 runs of length 1 2 runs of length 2 4 runs of length 3 2 runs of length 4 2 runs of length 5 4 runs of length 6 6 runs of length 7 2 runs of length 8 1 runs of length 9 1 runs of length 11 140 sectors differ 38 zero filled and 102 varying non-zero filled 120103200 sectors (61492838400 bytes) imaged Settings: acquisition_procedure A bootMedia CF masterImage 2 hashwindow 600M Image file segments 1 501 1048576000 Jan 7 19:03 IMAGE_0001.002.dmgpart 2 501 1048576000 Jan 7 19:04 IMAGE_0001.003.dmgpart 3 501 1048576000 Jan 7 19:05 IMAGE_0001.004.dmgpart . . . 57 501 1048576000 Jan 7 20:01 IMAGE_0001.058.dmgpart 58 501 675430400 Jan 7 20:02 IMAGE_0001.059.dmgpart 59 501 1048576000 Jan 7 19:02 IMAGE_0001.dmg
Results:	

Test Case DA-09-INTEL MacQuisition Version 2.2		
	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.	some sectors differ
	AM-09 Error logged.	as expected
	AM-10 Benign fill replaces inaccessible sectors.	undetermined fill source
	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 tested
	AO-23 Logged information is correct.	as expected
	AO-24 Source is unchanged by acquisition.	not checked
Analysis:	Expected results not achieved	

6.2.19 DA-09-TPIPE

Test Case DA-09-TPIPE MacQuisition Version 2.2	
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:	Richelieu
Test Date:	Wed Feb 20 12:11:45 2008
Drives:	src(ED-BAD-CPR4) dst (37-SATA) other (1D-SATA)
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 setup 390721968 sectors wiped with 37 Comparision of original to clone Sectors compared: 120103200 Sectors match: 6160328 Sectors differ: 113942872 Bytes differ: 378672582 Diffs range 6160328-120103199 Source (120103200) has 270618768 fewer sectors than destination (390721968) Zero fill: 0 Src Byte fill (ED): 0 Dst Byte fill (37): 270618768 Other fill: 0 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: 120103200-390721967 Other fill range:

Test Case DA-09-TPIPE MacQuisition Version 2.2

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

     1  65018f7a77028fa15c756f63d8548824  -
Command Line:
/Applications/MacQuisition_2.2UB.app/Contents/MacOS/dcfldd
       if=/dev/rdisk0 bs=512 conv=noerror,sync |
       /Applications/MacQuisition_2.2UB.app/Contents/MacOS/tpipe
       "/Applications/MacQuisition_2.2UB.app/Contents/MacOS/md5sum >
       /tmp/mnt1/DA-09-TPIPE/Admin/hashlog.txt" |
       /Applications/MacQuisition_2.2UB.app/Contents/MacOS/ddsplit - -m -b
       1000m /tmp/mnt1/DA-09-TPIPE/Images/IMAGE_0001
       2>/tmp/mnt1/DA-09-TPIPE/Admin/errorlog.txt
Source Device: /dev/rdisk0 ATA Maxtor 6Y060M0 - 57.27 GB
Source Device Size: 61492838400 Bytes 120103200 Sectors
Destination Device: /dev/disk1 SATA ST3320620AS - 298.09 GB
Hash Options: MD5,SHA1
Segmentation: 1000m
Block Size: 512 Bytes
Imaging Method: Tpipe DCFLDD 1.0
Read error summary
0 I/O errors logged
1 different run lengths observed in 1 runs
1 runs of length 113942872
113942872 sectors differ
    0 zero filled and 0 varying non-zero filled
120103170 sectors (61492823040 bytes) imaged
Settings: acquisition_procedure A
bootMedia CF
masterImage 2

Image file segments
     1  1048576000 Feb 20 20:13 IMAGE_0001.002.dmgpart
     2  1048576000 Feb 20 20:17 IMAGE_0001.003.dmgpart
     3  1048576000 Feb 20 20:22 IMAGE_0001.004.dmgpart
   . . .
    57  1048576000 Feb 21 00:34 IMAGE_0001.058.dmgpart
    58   675415040 Feb 21 00:37 IMAGE_0001.059.dmgpart
    59  1048576000 Feb 20 20:08 IMAGE_0001.dmg
```

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.	some sectors differ
AM-09 Error logged.	error sectors not logged
AM-10 Benign fill replaces inaccessible sectors.	undetermined fill source
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 tested
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	not checked

Analysis: Expected results not achieved

6.2.20 DA-09-TPIPE-INTEL

Test Case DA-09-TPIPE-INTEL MacQuisition Version 2.2	
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:	D'Artagnan
Test Date:	Thu Jan 8 10:18:16 2009
Drives:	src(ED-BAD-CPR4) dst (4A-SATA) other (3D-SATA)
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 setup 156301488 sectors wiped with 4A Comparision of original to clone Sectors compared: 120103200 Sectors match: 120103165 Sectors differ: 35 Bytes differ: 17863 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 Dst Byte fill (4D): 0 Other fill (4A): 36198288

Test Case DA-09-TPIPE-INTEL MacQuisition Version 2.2

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

     1  fd55eecb670db9a226ba3ff8c12a3b10  -
Command Line:
/Applications/MacQuisition_2.2UB.app/Contents/MacOS/dcfldd
       if=/dev/rdisk0 bs=512 conv=noerror,sync |
       /Applications/MacQuisition_2.2UB.app/Contents/MacOS/tpipe
       "/Applications/MacQuisition_2.2UB.app/Contents/MacOS/md5sum >
       /tmp/mnt1/DA_09_TPIPE_INTEL/Admin/hashlog.txt" |
       /Applications/MacQuisition_2.2UB.app/Contents/MacOS/ddsplit - -m -b
       1000m /tmp/mnt1/DA_09_TPIPE_INTEL/Images/IMAGE_0001
       2>/tmp/mnt1/DA_09_TPIPE_INTEL/Admin/errorlog.txt
Source Device: /dev/rdisk0 OTHER Maxtor 6Y060M0 - 57.27 GB
Source Device Size: 61492838400 Bytes 120103200 Sectors
Destination Device: /dev/disk1 OTHER ST3750330AS - 698.64 GB
Hash Options: MD5
Segmentation: 1000m
Block Size: 512 Bytes
Imaging Method: Tpipe DCFLDD 1.0
Read error summary
0 I/O errors logged
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
    0 zero filled and 35 varying non-zero filled
120103200 sectors (61492838400 bytes) imaged
Settings: acquisition_procedure A
bootMedia CF
masterImage 2

Image file segments
     1   501  1048576000 Jan  8 10:30 IMAGE_0001.002.dmgpart
     2   501  1048576000 Jan  8 10:33 IMAGE_0001.003.dmgpart
     3   501  1048576000 Jan  8 10:37 IMAGE_0001.004.dmgpart
   . . .
    57   501  1048576000 Jan  8 13:43 IMAGE_0001.058.dmgpart
    58   501   675430400 Jan  8 13:46 IMAGE_0001.059.dmgpart
    59   501  1048576000 Jan  8 10:26 IMAGE_0001.dmg
```

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.	some sectors differ
AM-09 Error logged.	error sectors not logged
AM-10 Benign fill replaces inaccessible sectors.	undetermined fill source
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 tested
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	not checked

Analysis: Expected results not achieved

6.2.21 DA-10

Test Case DA-10 MacQuisition Version 2.2	
Case Summary:	DA-10 Acquire a digital source to an image file in an alternate format.
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-02 If an image file format is specified, the tool creates an image file in the specified format. 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:	Richelieu
Test Date:	Tue Feb 12 09:05:51 2008
Drives:	src(07-SATA) dst (none) other (1D-SATA)
Source Setup:	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:	1 2eaf712dad80f66e30dea00365b4579b - Command Line: /Applications/MacQuisition_2.2UB.app/Contents/MacOS/dcfldd if=/dev/rdisk0 bs=4096 conv=noerror,sync | /Applications/MacQuisition_2.2UB.app/Contents/MacOS/tpipe "/Applications/MacQuisition_2.2UB.app/Contents/MacOS/md5sum > /tmp/mnt1/DA-10-001/Admin/hashlog.txt" | /Applications/MacQuisition_2.2UB.app/Contents/MacOS/ddsplit - -b 1000m -n 001 /tmp/mnt1/DA-10-001/Images/IMAGE_0001. 2>/tmp/mnt1/DA-10-001/Admin/errorlog.txt Source Device: /dev/rdisk0 ATA WDC WD800JD-32HKA0 - 74.53 GB Source Device Size: 80026361856 Bytes 156301488 Sectors Destination Device: /dev/disk1 SATA ST3320620AS - 298.09 GB Hash Options: MD5 Segmentation: 1000m Block Size: 4096 Bytes Imaging Method: Tpipe DCFLDD 1.0 Source SHA1 rehash: 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E Settings: acquisition_procedure A bootMedia CF masterImage 2 Image file segments 1 1048576000 Feb 12 09:25 IMAGE_0001.001 2 1048576000 Feb 12 09:26 IMAGE_0001.002 3 1048576000 Feb 12 09:28 IMAGE_0001.003 . . . 75 1048576000 Feb 12 11:01 IMAGE_0001.075

Test Case DA-10 MacQuisition Version 2.2

```
    76   1048576000 Feb 12 11:02 IMAGE_0001.076
    77    334585856 Feb 12 11:02 IMAGE_0001.077
```

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-02 Image file in specified format.	as expected
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	option not tested
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results achieved

6.2.22 DA-12

Test Case DA-12 MacQuisition Version 2.2

Case Summary:	DA-12 Attempt to create an image file where there is insufficient space.
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. 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-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:	Richelieu
Test Date:	Mon Feb 11 14:54:38 2008
Drives:	src(07-SATA) dst (none) other (30-SATA)
Source Setup:	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:	No acquisition log file Source SHA1 rehash: 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E Settings: acquisition_procedure A bootMedia CF masterImage 2 hashwindow 4GB Image file segments 1 1073741824 Feb 11 15:04 IMAGE_0001.002.dmgpart 2 1073741824 Feb 11 15:05 IMAGE_0001.003.dmgpart 3 1073741824 Feb 11 15:06 IMAGE_0001.004.dmgpart . . . 65 1073741824 Feb 11 16:32 IMAGE_0001.066.dmgpart 66 1037078528 Feb 11 16:33 IMAGE_0001.067.dmgpart 67 1073741824 Feb 11 15:02 IMAGE_0001.dmg
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
AO-04 User notified if space exhausted.	no meaningful message
AO-23 Logged information is correct.	incomplete log files
AO-24 Source is unchanged by acquisition.	as expected

Analysis:	Expected results not achieved

About the National Institute of Justice

NIJ is the research, development, and evaluation agency of the U.S. Department of Justice. NIJ's mission is to advance scientific research, development, and evaluation to enhance the administration of justice and public safety. NIJ's principal authorities are derived from the Omnibus Crime Control and Safe Streets Act of 1968, as amended (see 42 U.S.C. §§ 3721–3723).

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

Strategic Goals

NIJ has seven strategic goals grouped into three categories:

Creating relevant knowledge and tools

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

Dissemination

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

Agency management

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

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

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