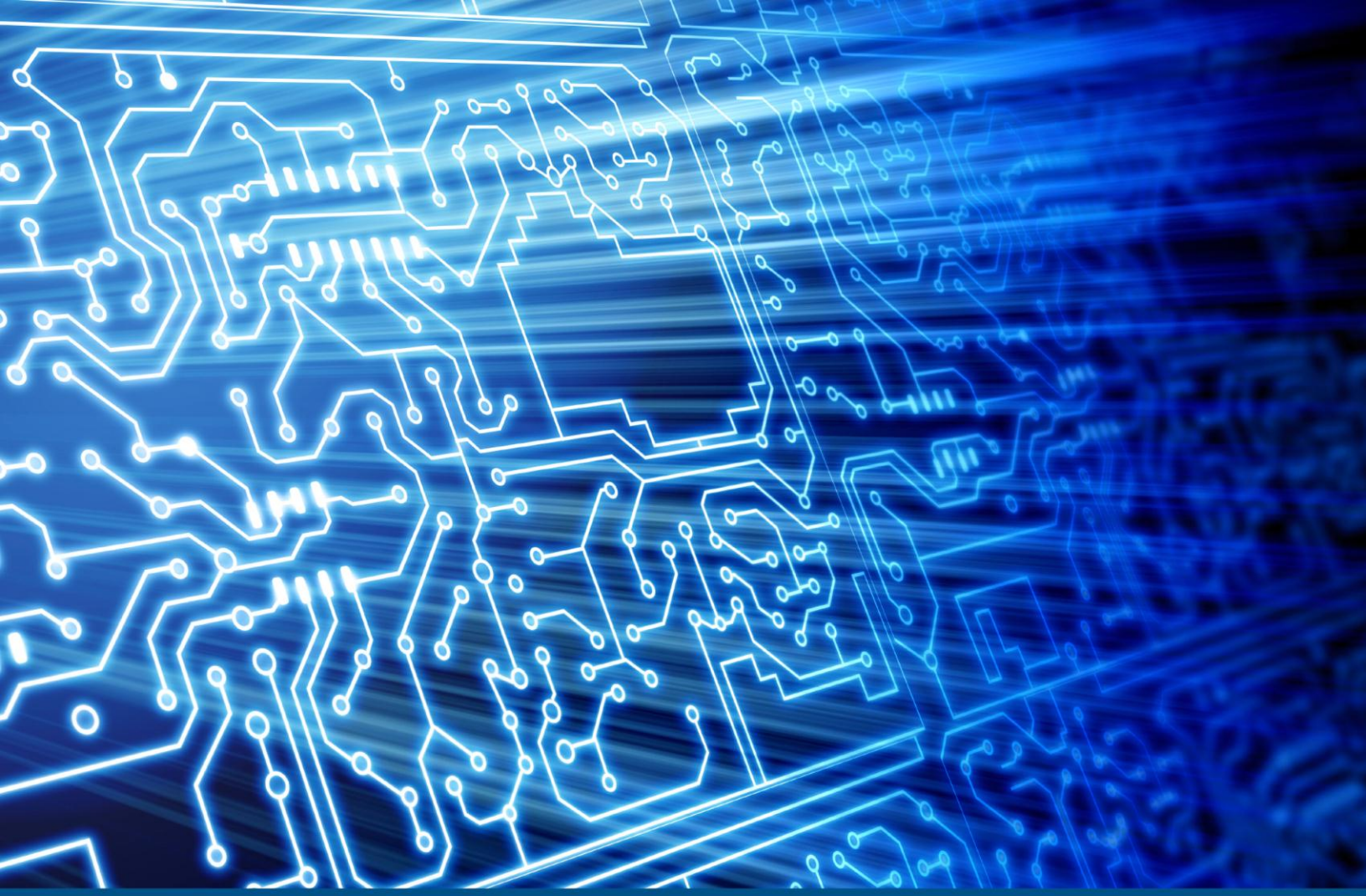

Paladin 3.0

Test Results for Digital Acquisition Tool

March 18, 2013

Homeland Security

Science and Technology

This report was prepared for the Department of Homeland Security Science and Technology Directorate Cyber Security Division by the Office of Law Enforcement Standards of the National Institute of Standards and Technology.

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March 2013

Test Results for Digital Data Acquisition Tool:
Paladin 3.0

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Introduction

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

Test results provide the information necessary for developers to improve tools, users to make informed choices, and the legal community and others to understand the tools' capabilities. The CFTT approach to testing computer forensics 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 Paladin 3.0 against the *Digital Data Acquisition Tool Assertions and Test Plan Version 1.0*, available at the CFTT Web site (http://www.cftt.nist.gov/DA-ATP-pc-01.pdf).

Test results from other tools can be found on NIJ's computer forensics tool testing Web page, http://www.ojp.usdoj.gov/nij/topics/technology/electronic-crime/cftt.htm.

How to Read This Report

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

Test Results for Digital Data Acquisition Tool

Tool Tested:	Paladin
Software Version:	3.0
Runtime Environment	Paladin 3.0 CD
Supplier:	Sumuri LLC
Address:	P.O. Box 252 Wyoming, Delaware 19934
Tel:	(302) 570-0015
Email:	sales@sumuri.com
WWW:	http://sumuri.com/

1 Results Summary

Paladin 3.0 is a modified Live Linux distribution designed to simplify the process of creating forensic images in a forensically sound manner. Paladin 3.0 is designed to image, clone and restore data from hard drives and other secondary storage. Except for the following anomalies, the tool acquired the test media completely and accurately.

- Readable sectors that were near faulty sectors on a source drive were not acquired. The tool wrote zeros to the target drive in place of these sectors (DA-09).
- The data written to a target drive became misaligned with the data on the source after faulty sectors were encountered on the source drive (DA-09).
- When a swap partition was acquired to an image file (DA-07-SWAP), seven sectors of the image file differed from the source. The tool wrote zeros for these last seven sectors in place of the appropriate source drive content. This behavior is caused by the Paladin 3.0 execution environment and CFTT has verified that the vendor has fixed this issue in Paladin version 3.0.3.

Refer to sections 3.1 and 3.2 for more details.

2 Test Case Selection

Test cases used to test disk imaging tools are defined in *Digital Data Acquisition Tool Assertions and Test Plan Version 1.0*. To test a tool, test cases are selected from the *Test Plan* document based on the features offered by the tool. Not all test cases or test assertions are appropriate for all tools. There is a core set of base cases (e.g., DA-06 and DA-07) that are executed for every tool tested. Tool features guide the selection of additional test cases. If a given tool implements a feature then the test cases linked to that feature are run. Table 1 lists the testable features of Paladin 3.0 and the linked test cases selected for execution. Table 2 lists the features not available in Paladin 3.0 and the test cases not executed.

Table 1. Selected Test Cases

Supported Optional Feature	Cases selected for execution
Create a clone during acquisition	01
Create an unaligned clone from a digital source	02
Create a truncated clone from a physical device	04
Base Cases	06 & 07
Read error during acquisition	09
Insufficient space for image file	12
Create a clone from an image file	14 & 17
Detect a corrupted (or changed) image file	24 & 25

Table 2. Omitted Test Cases

Unsupported Optional Feature	Cases omitted (not executed)
Create cylinder aligned clones	03, 15, 21 & 23
Device I/O error generator available	05, 11 & 18
Create an image of a drive with hidden sectors	08
Create an image file in more than one format	10
Destination Device Switching	13
Create a clone from a subset of an image file	16
Fill excess sectors on a clone acquisition	19
Fill excess sectors on a clone device	20, 21, 22 & 23
Convert an image file from one format to another	26

Some test cases have different forms to accommodate parameters within test assertions. These variations cover the acquisition interface to the source media and the type of digital object acquired. In addition, image file format and image file segment size were varied between test cases.

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

The following digital source types were tested: partitions (FAT12, FAT16, FAT32, FAT32X, EXFAT, NTFS, EXT2, EXT3, EXT4, SWAP), compact flash (CF) and thumb drive (Thumb). There are two FAT 32 variations testing acquisition of both FAT 32 partition codes 0x0B (FAT32) and 0x0C (FAT32X). These digital source types are noted as variations on test case DA–07.

The following image file types are supported by the tool and were varied in testing: Expert Witness (.E01), raw (.dd) and Apple Disk Image (.dmg).

3 Results by Test Assertion

A test assertion is a verifiable statement about a single condition after an action is performed by the tool under test. A test case usually checks a group of assertions after the

action of a single execution of the tool under test. Test assertions are defined and linked to test cases in *Digital Data Acquisition Tool Assertions and Test Plan Version 1.0*.

Table 3 summarizes the test results for all the test cases by assertion. The column labeled **Assertions Tested** gives the text of each assertion. The column labeled **Tests** gives the number of test cases that use the given assertion. The column labeled **Anomaly** gives the section number in this report where any observed anomalies are discussed.

Table 3. Assertions Tested

Assertions Tested	Tests	Anomaly
AM-01 The tool uses access interface SRC-AI to access the digital source.	31	
AM-02 The tool acquires digital source DS.	31	
AM-03 The tool executes in execution environment XE.	43	
AM-04 If clone creation is specified, the tool creates a clone of the digital source.	10	
AM-05 If image file creation is specified, the tool creates an image file on file system type FS.	21	
AM-06 All visible sectors are acquired from the digital source.	30	3.1
AM-08 All sectors acquired from the digital source are acquired accurately.	30	3.1 & 3.2
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.	1	
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.	1	
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.	20	
AO-04 If the tool is creating an image file and there is insufficient space on the image destination device to contain the image file, the tool shall notify the user.	1	
AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.	20	
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.	1	
AO-07 If the tool performs an image file integrity check on an image file that has been changed since the file was created, the tool shall notify the user that the image file has been changed.	1	
AO-08 If the tool performs an image file integrity check on an image file that has been changed since the file was created, the tool shall notify the user of the affected locations.	1	
AO-11 If requested, a clone is created during an	10	

Assertions Tested	Tests	Anomaly
acquisition of a digital source.		
AO-12 If requested, a clone is created from an image file.	10	
AO-13 A clone is created using access interface DST-AI to write to the clone device.	20	
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.	19	
AO-17 If requested, any excess sectors on a clone destination device are not modified.	7	
AO-19 If there is insufficient space to create a complete clone, a truncated clone is created using all available sectors of the clone device.	2	
AO-20 If a truncated clone is created, the tool notifies the user.	2	
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.	43	
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.	31	

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

Table 4. Assertions not Tested

Assertions not Tested
AM-07 All hidden sectors are acquired from the digital source.
AO-02 If an image file format is specified, the tool creates an image file in the specified format.
AO-03 If there is an error while writing the image file, the tool notifies the user.
AO-09 If the tool converts a source image file from one format to a target image file in another format, the acquired data represented in the target image file is the same as the acquired data in the source image file.
AO-10 If there is insufficient space to contain all files of a multi-file image and if destination device switching is supported, the image is continued on another device.
AO-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

Assertions not Tested
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-18 If requested, a benign fill is written to excess sectors of a clone.
AO-21 If there is a write error during clone creation, the tool notifies the user.
AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.

The following sections provide detailed information for the anomalies from Table 3.

3.1 Acquisition of Faulty Sectors

In test case DA-09, a source drive with faulty sectors was cloned to a target drive. Readable sectors that were near faulty sectors on the source drive were not acquired. The tool wrote zeros to the target drive in place of these sectors.

The data cloned to the target drive became misaligned after faulty sectors were encountered on the source drive. For example, sector 6,160,448 on the target drive contained the contents of sector 6,160,392 from the source, sector 6,160,449 on the target contained the contents of source sector 6,160,393, and so on. The size of the offset or misalignment between the data on the source and target drives grew as more faulty sectors were encountered on the source.

3.2 Swap Partitions

For test case DA-07-SWAP, where a swap partition was acquired to an image file, the imaging operation completed without an error message. However, the last seven sectors of the image file differed from the source. The tool wrote zeros for these last seven sectors in place of the appropriate source drive content. This behavior is from the Paladin 3.0 execution environment. If a drive is connected at boot time and contains a swap partition, the swap partition is activated and may not be imaged correctly. Active swap partitions can be listed by the command: swapon –s. Any active swap partitions can be deactivated by the command swapoff –a and then imaged correctly. CFTT has verified that the vendor has fixed this issue in version 3.0.3.

4 Testing Environment

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

4.1 Execution Environment

Tests were run from the Paladin 3.0 CD.

4.2 Test Computers

Five computers were used to run the tool: **Deathstar**, **Frank**, **McGarrett**, **Palpatine** and **Scimitar**.

DeathStar, Palpatine and **Scimitar** have the following configuration:

TCP Custom built
ULT U12-40670 ULTRA PRODUCTS FULL TOWER ATX 2
ASU P8Z68VPRO/G ASUS P8Z68-V PRO/GEN3 SOCKET 1155 MB
INT CORE i5 2500 INTEL CORE I5 2500 3.3GHZ CPU
CRU 4GBD3-1333 CRUCIAL 4GB DDR3-1333 8 GIG RAM
EVGA 01GP31526K EVGA GT520 1GB PCI-E
Dual DVI display card
CRU 8400-5000-0 CRU DATAPORT V FRAME SATA
TCP SO CRU DATAPORT V IDE,
SAM SH-S222AB SAMSUNG 22X SATA DVD RW
SII NN830112 SIIG 3 PORT FIREWIRE 800 PCI
STA PCIIDE2 STARTECH 2 CHANNEL IDE CONTROLLER PCI
IOC SY-PEX40040 I/O CREST 1 + 1 PORT SATA/ESATA III CARD
CM EXTREME600W COOLERMASTER EXTREME 600W PS

Frank has the following configuration:

Intel Desktop Motherboard D865GB/D865PERC (with ATA-6 IDE on board controller)
BIOS Version BF86510A.86A.0053.P13
Adaptec SCSI BIOS V3.10.0
Intel® Pentium™ 4 CPU 3.4Ghz
2577972KB RAM
SONY DVD RW DRU-530A, ATAPI CD/DVD-ROM drive
1.44 MB floppy drive
Two slots for removable IDE hard disk drives
Two slots for removable SATA hard disk drives
Two slots for removable SCSI hard disk drives

McGarrett has the following configuration:

Intel® Desktop Motherboard DX48BT2
BIOS Version BTX3810J.86A.1554.2008.0501.1628
Intel® Core™ 2 Extreme QX9770 CPU 3.20Ghz
4GB DDR3 RAM
Diamond Radeon™ HD3450 PCI-E graphics card
SIIG® 3-Port IEEE1395 PCI-E card
LG Blu-Ray Super multi drive BD/HD-DVD/DVD/CD
Three slots for removable SATA hard disk drives
Two slots for removable IDE hard disk drives

4.3 Support Software

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

4.4 Test Drive Creation

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

4.4.1 Source Drive

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

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

The source drives for DA-09 are created such that there is a consistent set of faulty sectors on the drive. Each of these source drives is initialized with **diskwipe** and then their faulty sectors are activated. For each of these source drives, a duplicate drive, with no faulty sectors, serves as a reference drive for comparison.

4.4.2 Media Drive

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

4.4.3 Destination Drive

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

4.5 Test Drive Analysis

For test cases that create a clone of a physical device, e.g., DA-01, DA-04, etc., the destination drive is compared to the source drive with the **diskcmp** program from the FS-TST package; for test cases that create a clone of a logical device, i.e., a partition, e.g.,

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

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

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

4.6 Note on Test Drives

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

5 Test Results

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

5.1 Test Results Report Key

The following table presents an explanation of each section of the test details in section 5.2. The Tester Name, Test Host, Test Date, Drives, Source Setup and Log Highlights sections for each test case are populated by excerpts taken from the log files produced by the tool under test and the FS-TST tools that were executed in support of test case setup and analysis.

Heading	Description
First Line:	Test case ID, name, and version of tool tested.
Case Summary:	Test case summary from *Digital Data Acquisition Tool Assertions and Test Plan Version 1.0.*
Assertions:	The test assertions applicable to the test case, selected from *Digital Data Acquisition Tool Assertions and Test Plan Version 1.0.*

Heading	Description
Tester Name:	Name or initials of person executing test procedure.
Test Host:	Host computer executing the test.
Test Date:	Time and date that test was started.
Drives:	Source drive (the drive acquired), destination drive (if a clone is created) and media drive (to contain a created image).
Source Setup:	Layout of partitions on the source drive and the expected hash of the drive.
Log Highlights:	Information extracted from various log files to illustrate conformance or non-conformance to the test assertions.
Results:	Expected and actual results for each assertion tested.
Analysis:	Whether or not the expected results were achieved.

5.2 Test Details

The test results are presented in this section.

5.2.1 DA-01-ATA28

Test Case DA-01-ATA28 Sumuri Paladin 3.0.0	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	Csr
Test Host:	Palpatine
Test Date:	Sat Sep 1 13:30:47 2012
Drives:	src(41) dst (02-IDE) other (none)
Source Setup:	src hash (SHA256): < FBF3AA21489653D880FFAE71449A9F7E8EE4F56A6C3BF58A3A3FFB13203F1B1D > src hash (SHA1): < 15CAA1A307271160D8372668BF8A03FC45A51CC9 > src hash (MD5): < 0A6A8EF78BDC14E2026710D8CCB5607C > 78125000 total sectors (40000000000 bytes) 65534/015/63 (max cyl/hd values) 65535/016/63 (number of cyl/hd) IDE disk: Model (WDC WD400BB-75JHC0) serial # (WD-WMAMC4658355) N Start LBA Length Start C/H/S End C/H/S boot Partition type

Test Case DA-01-ATA28 Sumuri Paladin 3.0.0

```
 1 P 000000063 078107967 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 078107967 sectors 39991279104 bytes
```

Log Highlights:

```
====== Destination drive setup ======
78165360 sectors wiped with  2

====== Comparison of original to clone drive ======
Sectors compared: 78125000
Sectors match:    78125000
Sectors differ:          0
Bytes differ:            0
Diffs range
Source (78125000) has 40360 fewer sectors than destination (78165360)
Zero fill:               0
Src Byte fill (41):      0
Dst Byte fill (02):    40360
Other fill:              0
Other no fill:           0
Zero fill range:
Src fill range:
Dst fill range:  78125000-78165359
Other fill range:
Other not filled range:
0 source read errors, 0 destination read errors

OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09
UTC 2012 i686 i686 i386 GNU/Linux

======== Excerpt from Tool log ========
Source Drive:
       Model Number:       WDC WD400BB-75JHC0
       Serial Number:      WD-WMAMC4658355
============== Hashes:
Hash values calculated during initial creation:
Total (md5): 0a6a8ef78bdc14e2026710d8ccb5607c
Total (sha1): 15caa1a307271160d8372668bf8a03fc45a51cc9
======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: 15CAA1A307271160D8372668BF8A03FC45A51CC9
```

Results:

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

Analysis: Expected results achieved

5.2.2 DA-01-ATA48

Test Case DA-01-ATA48 Sumuri Paladin 3.0.0	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	Csr
Test Host:	McGarrett
Test Date:	Sat Sep 1 23:11:52 2012
Drives:	src(4E) dst (33-IDE) other (none)
Source Setup:	src hash (SHA1): < 7DDFF1A74B2E2B7E7EE43C41CD9066E27986644D > src hash (MD5): < 62C9436930204E0F38921771ACA1BB88 > 488397168 total sectors (250059350016 bytes) 30400/254/63 (max cyl/hd values) 30401/255/63 (number of cyl/hd) IDE disk: Model (WDC WD2500JB-22FUA0) serial # (WD-WMAEP1925256) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 488375937 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 488375937 sectors 250048479744 bytes
Log Highlights:	====== Destination drive setup ====== 488397168 sectors wiped with 33 ====== Comparison of original to clone drive ====== Sectors compared: 488397168 Sectors match: 488397168 Sectors differ: 0 Bytes differ: 0 Diffs range 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ======== Excerpt from Tool log ======== Source Drive: Model Number: WDC WD2500JB-22FUA0 Serial Number: WD-WMAEP1925256 ============== Hashes: Hash values calculated during initial creation: Total (md5): 62c9436930204e0f38921771aca1bb88 Total (sha1): 7ddff1a74b2e2b7e7ee43c41cd9066e27986644d ======== End of Excerpt from Tool log ======== ====== Source drive rehash ======

Test Case DA-01-ATA48 Sumuri Paladin 3.0.0	
	Rehash (SHA1) of source: 7DDFF1A74B2E2B7E7EE43C41CD9066E27986644D
Results:	

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

Analysis:	Expected results achieved

5.2.3 DA-01-FW

Test Case DA-01-FW Sumuri Paladin 3.0.0	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	Csr
Test Host:	Palpatine
Test Date:	Tue Aug 28 07:07:06 2012
Drives:	src(63-FU2) dst (61-FU2) other (none)
Source Setup:	src hash (SHA256): < EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D > src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B > src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC > 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:	====== Destination drive setup ====== 117304992 sectors wiped with 61 ====== Comparison of original to clone drive ====== Sectors compared: 117304992 Sectors match: 117304992 Sectors differ: 0 Bytes differ: 0 Diffs range 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ======== Excerpt from Tool log ======== Source Drive: Source Physical device DMI SAMSUNG SP0612N 60GB (/dev/sda) ============== Hashes: Hash values calculated during initial creation: Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec Total (sha1): f7069edcbeac863c88deced82159f22da96be99b

Test Case DA-01-FW Sumuri Paladin 3.0.0

```
======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: F7069EDCBEAC863C88DECED82159F22DA96BE99B
```

Results:

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

Analysis: Expected results achieved

5.2.4 DA-01-SATA28

Test Case DA-01-SATA28 Sumuri Paladin 3.0.0	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	jrr
Test Host:	Scimitar
Test Date:	Mon Aug 27 15:22:17 2012
Drives:	src(07-SATA) dst (04-SATA) other (none)
Source Setup:	src hash (SHA256): < CE65C4A3C3164D3EBAD58D33BB2415D29E260E1F88DC5A131B1C4C9C2945B8A9 > src hash (SHA1): < 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E > src hash (MD5): < 2EAF712DAD80F66E30DEA00365B4579B > 156301488 total sectors (80026361856 bytes) Model (WDC WD800JD-32HK) serial # (WD-WMAJ91510044) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 156280257 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 156280257 sectors 80015491584 bytes
Log Highlights:	====== Destination drive setup ====== 156301488 sectors wiped with 4 ====== Comparison of original to clone drive ====== Sectors compared: 156301488 Sectors match: 156301488 Sectors differ: 0 Bytes differ: 0 Diffs range 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ======== Excerpt from Tool log ======== Source Drive: Model Number: WDC WD800JD-32HKA0 Serial Number: WD-WMAJ91510044 ============== Hashes: Hash values calculated during initial creation: Total (md5): 2eaf712dad80f66e30dea00365b4579b Total (sha1): 655e9bddb36a3f9c5c4cc8bf32b8c5b41af9f52e ======== End of Excerpt from Tool log ========

Test Case DA-01-SATA28 Sumuri Paladin 3.0.0	
	====== Source drive rehash ====== Rehash (SHA1) of source: 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E
Results:	

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

Analysis:	Expected results achieved

5.2.5 DA-01-SATA48

Test Case DA-01-SATA48 Sumuri Paladin 3.0.0	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	jrr
Test Host:	frank
Test Date:	Tue Aug 28 13:40:02 2012
Drives:	src(0D-SATA) dst (2C-SATA) other (none)
Source Setup:	src hash (SHA1): < BAAD80E8781E55F2E3EF528CA73BD41D228C1377 > src hash (MD5): < 1FA7C3CBE60EB9E89863DED2411E40C9 > 488397168 total sectors (250059350016 bytes) 30400/254/63 (max cyl/hd values) 30401/255/63 (number of cyl/hd) Model (WDC WD2500JD-22F) serial # (WD-WMAEH2678216) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 488375937 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 488375937 sectors 250048479744 bytes
Log Highlights:	====== Destination drive setup ====== 488397168 sectors wiped with 2C ====== Comparison of original to clone drive ====== Sectors compared: 488397168 Sectors match: 488397168 Sectors differ: 0 Bytes differ: 0 Diffs range 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ======== Excerpt from Tool log ======== Source Drive: Model Number: WDC WD2500JD-22FYB0 Serial Number: WD-WMAEH2678216 ============== Hashes: Hash values calculated during initial creation: Total (md5): 1fa7c3cbe60eb9e89863ded2411e40c9 Total (sha1): baad80e8781e55f2e3ef528ca73bd41d228c1377 ======== End of Excerpt from Tool log ======== ====== Source drive rehash ======

Test Case DA-01-SATA48 Sumuri Paladin 3.0.0	
	Rehash (SHA1) of source: BAAD80E8781E55F2E3EF528CA73BD41D228C1377
Results:	

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

Analysis:	Expected results achieved

5.2.6 DA-01-SCSI

Test Case DA-01-SCSI Sumuri Paladin 3.0.0	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	jrr
Test Host:	frank
Test Date:	Mon Aug 27 14:45:37 2012
Drives:	src(E0) dst (05-SATA) other (none)
Source Setup:	src hash (SHA1): < 4A6941F1337A8A22B10FC844B4D7FA6158BECB82 > src hash (MD5): < A97C8F36B7AC9D5233B90AC09284F938 > 17938985 total sectors (9184760320 bytes) Model (ATLAS10K2-TY092J) serial # (169028142436)
Log Highlights:	====== Destination drive setup ====== 156301488 sectors wiped with 5 ====== Comparison of original to clone drive ====== Sectors compared: 17938985 Sectors match: 17938985 Sectors differ: 0 Bytes differ: 0 Diffs range Source (17938985) has 138362503 fewer sectors than destination (156301488) Zero fill: 0 Src Byte fill (E0): 0 Dst Byte fill (05): 138362503 Other fill: 0 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: 17938985-156301487 Other fill range: Other not filled range: 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ======== Excerpt from Tool log ======== Source Drive: /dev/sdg: QUANTUM ATLAS10K2-TY092J DDD6 ============== Hashes: Hash values calculated during initial creation: Total (md5): a97c8f36b7ac9d5233b90ac09284f938 Total (sha1): 4a6941f1337a8a22b10fc844b4d7fa6158becb82 ======== End of Excerpt from Tool log ========

Test Case DA-01-SCSI Sumuri Paladin 3.0.0	
	====== Source drive rehash ====== Rehash (SHA1) of source: 4A6941F1337A8A22B10FC844B4D7FA6158BECB82
Results:	

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

Analysis:	Expected results achieved

5.2.7 DA-01-USB

Test Case DA-01-USB Sumuri Paladin 3.0.0	
Case Summary:	DA-01 Acquire a physical device using access interface AI to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	Csr
Test Host:	Palpatine
Test Date:	Mon Aug 27 15:23:15 2012
Drives:	src(63-FU2) dst (61-FU2) other (none)
Source Setup:	src hash (SHA256): < EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D > src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B > src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC > 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:	====== Destination drive setup ====== 117304992 sectors wiped with 61 ====== Comparison of original to clone drive ====== Sectors compared: 117304992 Sectors match: 117304992 Sectors differ: 0 Bytes differ: 0 Diffs range 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ======== Excerpt from Tool log ======== Source Drive: Source Physical device SAMSUNG SP0612N 215C1FA1CF 60GB (/dev/sda) ============== Hashes: Hash values calculated during initial creation: Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec Total (sha1): f7069edcbeac863c88deced82159f22da96be99b

<table>
<tr><td colspan="2">Test Case DA-01-USB Sumuri Paladin 3.0.0</td></tr>
<tr><td></td><td>======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: F7069EDCBEAC863C88DECED82159F22DA96BE99B</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-04 A clone is created.</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-11 A clone is created during acquisition.</td><td>as expected</td></tr>
<tr><td>AO-13 Clone created using interface AI.</td><td>as expected</td></tr>
<tr><td>AO-14 An unaligned clone is created.</td><td>as expected</td></tr>
<tr><td>AO-17 Excess sectors are unchanged.</td><td>as expected</td></tr>
<tr><td>AO-22 Tool calculates hashes by block.</td><td>option not available</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
<tr><td>AO-24 Source is unchanged by acquisition.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

5.2.8 DA-02-CF

Test Case DA-02-CF Sumuri Paladin 3.0.0	
Case Summary:	DA-02 Acquire a digital source of type DS to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	Csr
Test Host:	Palpatine
Test Date:	Tue Aug 28 13:49:05 2012
Drives:	src(c1-cf) dst (c2-cf) other (none)
Source Setup:	src hash (SHA256): < C7CF0218222DF80D5316511D6814266C7FA507C13F795AD3D323BB73C1590D80 > src hash (SHA1): < 5B8235178DF99FA307430C088F81746606638A0B > src hash (MD5): < 776DF8B4D2589E21DEBCF589EDC16D78 > 503808 total sectors (257949696 bytes) Model (CF) serial # () N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 778135908 1141509631 0357/116/40 0357/032/45 Boot 72 other 2 P 168689522 1936028240 0288/115/43 0367/114/50 Boot 65 other 3 P 1869881465 1936028192 0366/032/33 0357/032/43 Boot 79 other 4 P 2885681152 000055499 0372/097/50 0000/010/00 Boot 0D other 1 1141509631 sectors 584452931072 bytes 2 1936028240 sectors 991246458880 bytes 3 1936028192 sectors 991246434304 bytes 4 000055499 sectors 28415488 bytes
Log Highlights:	====== Destination drive setup ====== 503808 sectors wiped with C2 ====== Comparison of original to clone drive ====== Sectors compared: 503808 Sectors match: 503808 Sectors differ: 0 Bytes differ: 0 Diffs range 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ======== Excerpt from Tool log ======== Source Drive: Source C1-CF on Physical device Generic CF 0000001 257MB (/dev/sda) ============== Hashes: Hash values calculated during initial creation: Total (md5): 776df8b4d2589e21debcf589edc16d78 Total (sha1): 5b8235178df99fa307430c088f81746606638a0b

<table>
<tr><td colspan="2">Test Case DA-02-CF Sumuri Paladin 3.0.0</td></tr>
<tr><td></td><td>Hash values for verification started at 20120828 14:04:04:
Total (md5): 776df8b4d2589e21debcf589edc16d78
Total (sha1): 5b8235178df99fa307430c088f81746606638a0b
======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: 5B8235178DF99FA307430C088F81746606638A0B</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-04 A clone is created.</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-11 A clone is created during acquisition.</td><td>as expected</td></tr>
<tr><td>AO-13 Clone created using interface AI.</td><td>as expected</td></tr>
<tr><td>AO-14 An unaligned clone is created.</td><td>as expected</td></tr>
<tr><td>AO-17 Excess sectors are unchanged.</td><td>as expected</td></tr>
<tr><td>AO-22 Tool calculates hashes by block.</td><td>option not available</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
<tr><td>AO-24 Source is unchanged by acquisition.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

5.2.9 DA-02-THUMB

Test Case DA-02-THUMB Sumuri Paladin 3.0.0	
Case Summary:	DA-02 Acquire a digital source of type DS to an unaligned clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	Csr
Test Host:	Palpatine
Test Date:	Tue Aug 28 14:21:03 2012
Drives:	src(d5-thumb) dst (d6-thumb) other (none)
Source Setup:	src hash (SHA1): < D68520EF74A336E49DCCF83815B7B08FDC53E38A > src hash (MD5): < C843593624B2B3B878596D8760B19954 > 505856 total sectors (258998272 bytes) Model (usb2.0Flash Disk) serial # ()
Log Highlights:	====== Destination drive setup ====== 4001760 sectors wiped with D6 ====== Comparison of original to clone drive ====== Sectors compared: 505856 Sectors match: 505856 Sectors differ: 0 Bytes differ: 0 Diffs range Source (505856) has 3495904 fewer sectors than destination (4001760) Zero fill: 0 Src Byte fill (D5): 0 Dst Byte fill (D6): 3495904 Other fill: 0 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: 505856-4001759 Other fill range: Other not filled range: 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ======== Excerpt from Tool log ======== Source Drive: Source Physical device CRUCIAL usb2.0Flash Disk 1040000000000C0D 258MB (/dev/sda) ============== Hashes: Hash values calculated during initial creation: Total (md5): c843593624b2b3b878596d8760b19954 Total (sha1): d68520ef74a336e49dccf83815b7b08fdc53e38a

Test Case DA-02-THUMB Sumuri Paladin 3.0.0

```
======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: D68520EF74A336E49DCCF83815B7B08FDC53E38A
```

Results:

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

Analysis: Expected results achieved

5.2.10 DA-04

Test Case DA-04 Sumuri Paladin 3.0.0	
Case Summary:	DA-04 Acquire a physical device to a truncated clone.
Assertions:	AM-01 The tool uses access interface SRC-AI to access the digital source. AM-02 The tool acquires digital source DS. AM-03 The tool executes in execution environment XE. AM-04 If clone creation is specified, the tool creates a clone of the digital source. AM-06 All visible sectors are acquired from the digital source. AM-08 All sectors acquired from the digital source are acquired accurately. AO-11 If requested, a clone is created during an acquisition of a digital source. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-19 If there is insufficient space to create a complete clone, a truncated clone is created using all available sectors of the clone device. AO-20 If a truncated clone is created, the tool notifies the user. AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.
Tester Name:	Jrr
Test Host:	Scimitar
Test Date:	Tue Aug 28 13:32:14 2012
Drives:	src(41) dst (31-IDE) other (none)
Source Setup:	src hash (SHA256): < FBF3AA21489653D880FFAE71449A9F7E8EE4F56A6C3BF58A3A3FFB13203F1B1D > src hash (SHA1): < 15CAA1A307271160D8372668BF8A03FC45A51CC9 > src hash (MD5): < 0A6A8EF78BDC14E2026710D8CCB5607C > 78125000 total sectors (40000000000 bytes) 65534/015/63 (max cyl/hd values) 65535/016/63 (number of cyl/hd) IDE disk: Model (WDC WD400BB-75JHC0) serial # (WD-WMAMC4658355) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 078107967 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 078107967 sectors 39991279104 bytes
Log Highlights:	====== Destination drive setup ====== 35673120 sectors wiped with 31 ====== Comparison of original to clone drive ====== Sectors compared: 35673120 Sectors match: 35673120 Sectors differ: 0 Bytes differ: 0 Diffs range Source (78125000) has 42451880 more sectors than destination (35673120) 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ============== Message from tool dcfldd:: No space left on device ======== Excerpt from Tool log ======== Source Drive: Model Number: WDC WD400BB-75JHC0

Test Case DA-04 Sumuri Paladin 3.0.0

```
        Serial Number:      WD-WMAMC4658355
============== Hashes:
Hash values calculated during initial creation:
======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: 15CAA1A307271160D8372668BF8A03FC45A51CC9
```

Results:

Assertion & Expected Result	**Actual Result**
AM-01 Source acquired using interface AI.	as expected
AM-02 Source is type DS.	as expected
AM-03 Execution environment is XE.	as expected
AM-04 A clone is created.	as expected
AM-06 All visible sectors acquired.	as expected
AM-08 All sectors accurately acquired.	as expected
AO-11 A clone is created during acquisition.	as expected
AO-13 Clone created using interface AI.	as expected
AO-14 An unaligned clone is created.	as expected
AO-19 Truncated clone is created.	as expected
AO-20 User notified that clone is truncated.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results achieved

5.2.11 DA-06-ATA28

Test Case DA-06-ATA28 Sumuri Paladin 3.0.0	
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:	csr
Test Host:	Palpatine
Test Date:	Wed Sep 5 12:40:01 2012
Drives:	src(12-IDE) dst (none) other (38-SATA)
Source Setup:	src hash (SHA1): < 10DC1439E56093FFA6F11E10442106F27D899F67 > src hash (MD5): < ACAFB6838330FD24221199512A61D565 > 234441648 total sectors (120034123776 bytes) 14592/254/63 (max cyl/hd values) 14593/255/63 (number of cyl/hd) Model (00JB-00REA0) serial # (WD-WCANMD0605)
Log Highlights:	====== Tool Settings: ====== image format: E01 image size: 2GB OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ====== Image file segments ====== 1 1789118590 Sep 5 13:27 da-06-ata28.E01 2 3081 Sep 5 13:27 da-06-ata28.log.txt ======== Excerpt from Tool log ======== Source Drive: Model Number: WDC WD1200JB-00REA0 Serial Number: WD-WCANMD060578 ============== Hashes: Hash values calculated during initial creation: Total (md5): acafb6838330fd24221199512a61d565 MD5 hash calculated over data: acafb6838330fd24221199512a61d565 SHA1 hash calculated over data: 10dc1439e56093ffa6f11e10442106f27d899f67 ======== End of Excerpt from Tool log ======== ====== Source drive rehash ====== Rehash (SHA1) of source: 10DC1439E56093FFA6F11E10442106F27D899F67
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

Test Case DA-06-ATA28 Sumuri Paladin 3.0.0		
	AO-05 Multifile image created.	as expected
	AO-22 Tool calculates hashes by block.	option not available
	AO-23 Logged information is correct.	as expected
	AO-24 Source is unchanged by acquisition.	as expected
Analysis:	Expected results achieved	

5.2.12 DA-06-ATA48

Test Case DA-06-ATA48 Sumuri Paladin 3.0.0	
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:	csr
Test Host:	Palpatine
Test Date:	Wed Sep 5 08:34:01 2012
Drives:	src(4E) dst (none) other (38-SATA)
Source Setup:	src hash (SHA1): < 7DDFF1A74B2E2B7E7EE43C41CD9066E27986644D > src hash (MD5): < 62C9436930204E0F38921771ACA1BB88 > 488397168 total sectors (250059350016 bytes) 30400/254/63 (max cyl/hd values) 30401/255/63 (number of cyl/hd) IDE disk: Model (WDC WD2500JB-22FUA0) serial # (WD-WMAEP1925256) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 488375937 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 488375937 sectors 250048479744 bytes
Log Highlights:	====== Tool Settings: ====== image size: 2GB image format: dd OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ====== Image file segments ====== 1 2097152000 da-06-ata48.001 2 2097152000 da-06-ata48.002 3 2097152000 da-06-ata48.003 . . . 118 2097152000 da-06-ata48.118 119 2097152000 da-06-ata48.119 120 498262016 da-06-ata48.120 ======== Excerpt from Tool log ======== Source Drive: Model Number: WDC WD2500JB-22FUA0 Serial Number: WD-WMAEP1925256 ============== Hashes: Hash values calculated during initial creation: Total (md5): 62c9436930204e0f38921771aca1bb88 Total (sha1): 7ddff1a74b2e2b7e7ee43c41cd9066e27986644d ======== End of Excerpt from Tool log ======== ====== Source drive rehash ====== Rehash (SHA1) of source: 7DDFF1A74B2E2B7E7EE43C41CD9066E27986644D

Test Case DA-06-ATA48 Sumuri Paladin 3.0.0

Results:

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

Analysis: Expected results achieved

5.2.13 DA-06-FW

Test Case DA-06-FW Sumuri Paladin 3.0.0	
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:	jrr
Test Host:	Scimitar
Test Date:	Fri Oct 5 10:23:33 2012
Drives:	src(63-FU2) dst (none) other (0C-FU)
Source Setup:	src hash (SHA256): < EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D > src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B > src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC > 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 Settings: ====== format dd size 2000 MB OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ====== Image file segments ====== 1 2097152000 2012-10-04 16:30 da-06-fw.001 2 2097152000 2012-10-04 16:31 da-06-fw.002 3 2097152000 2012-10-04 16:32 da-06-fw.003 . . . 27 2097152000 2012-10-04 16:55 da-06-fw.027 28 2097152000 2012-10-04 16:56 da-06-fw.028 29 1339899904 2012-10-04 16:57 da-06-fw.029 ======== Excerpt from Tool log ======== Source Drive: Source Physical device DMI SAMSUNG SP0612N 60GB (/dev/sdc) ============== Hashes: Hash values calculated during initial creation: Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec Total (sha1): f7069edcbeac863c88deced82159f22da96be99b ======== End of Excerpt from Tool log ========

Test Case DA-06-FW Sumuri Paladin 3.0.0	
	====== Source drive rehash ====== Rehash (SHA1) of source: F7069EDCBEAC863C88DECED82159F22DA96BE99B
Results:	

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

Analysis:	Expected results achieved

5.2.14 DA-06-SATA28

Test Case DA-06-SATA28 Sumuri Paladin 3.0.0	
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:	jrr
Test Host:	Scimitar
Test Date:	Wed Aug 29 09:13:05 2012
Drives:	src(07-SATA) dst (none) other (OC-FU)
Source Setup:	src hash (SHA256): < CE65C4A3C3164D3EBAD58D33BB2415D29E260E1F88DC5A131B1C4C9C2945B8A9 > src hash (SHA1): < 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E > src hash (MD5): < 2EAF712DAD80F66E30DEA00365B4579B > 156301488 total sectors (80026361856 bytes) Model (WDC WD800JD-32HK) serial # (WD-WMAJ91510044) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 156280257 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 156280257 sectors 80015491584 bytes
Log Highlights:	====== Tool Settings: ====== format E01 size 2000 MB OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ====== Image file segments ====== 1 1897532780 2012-08-29 09:54 da-06-sata28.E01 2 2647 2012-08-29 09:54 da-06-sata28.log.txt ======== Excerpt from Tool log ======== Source Drive: Model Number: WDC WD800JD-32HKA0 Serial Number: WD-WMAJ91510044 ============== Hashes: Hash values calculated during initial creation: Total (md5): 2eaf712dad80f66e30dea00365b4579b MD5 hash calculated over data: 2eaf712dad80f66e30dea00365b4579b SHA1 hash calculated over data: 655e9bddb36a3f9c5c4cc8bf32b8c5b41af9f52e ======== End of Excerpt from Tool log ======== ====== Source drive rehash ====== Rehash (SHA1) of source: 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E
Results:	**Assertion & Expected Result** | **Actual Result**

Test Case DA-06-SATA28 Sumuri Paladin 3.0.0		
	AM-01 Source acquired using interface AI.	as expected
	AM-02 Source is type DS.	as expected
	AM-03 Execution environment is XE.	as expected
	AM-05 An image is created on file system type FS.	as expected
	AM-06 All visible sectors acquired.	as expected
	AM-08 All sectors accurately acquired.	as expected
	AO-01 Image file is complete and accurate.	as expected
	AO-05 Multifile image created.	as expected
	AO-22 Tool calculates hashes by block.	option not available
	AO-23 Logged information is correct.	as expected
	AO-24 Source is unchanged by acquisition.	as expected
Analysis:	Expected results achieved	

5.2.15 DA-06-SATA48

<table>
<tr><th colspan="2">Test Case DA-06-SATA48 Sumuri Paladin 3.0.0</th></tr>
<tr><td>Case Summary:</td><td>DA-06 Acquire a physical device using access interface AI 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>jrr</td></tr>
<tr><td>Test Host:</td><td>Scimitar</td></tr>
<tr><td>Test Date:</td><td>Wed Sep 5 11:17:35 2012</td></tr>
<tr><td>Drives:</td><td>src(0D-SATA) dst (none) other (OC-FU)</td></tr>
<tr><td>Source Setup:</td><td>src hash (SHA1): < BAAD80E8781E55F2E3EF528CA73BD41D228C1377 >
src hash (MD5): < 1FA7C3CBE60EB9E89863DED2411E40C9 >
488397168 total sectors (250059350016 bytes)
30400/254/63 (max cyl/hd values)
30401/255/63 (number of cyl/hd)
Model (WDC WD2500JD-22F) serial # (WD-WMAEH2678216)
N Start LBA Length Start C/H/S End C/H/S boot Partition type
1 P 000000063 488375937 0000/001/01 1023/254/63 Boot 07 NTFS
2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
1 488375937 sectors 250048479744 bytes</td></tr>
<tr><td>Log Highlights:</td><td>====== Tool Settings: ======
format dd
size 2000 MB

OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux

====== Image file segments ======
1 1897532780 2012-08-29 09:54 da-06-sata28.E01
2 2647 2012-08-29 09:54 da-06-sata28.log.txt
======== Excerpt from Tool log ========
Source Drive:
Model Number: WDC WD800JD-32HKA0
Serial Number: WD-WMAJ91510044
============== Hashes:
Hash values calculated during initial creation:
Total (md5): 2eaf712dad80f66e30dea00365b4579b
MD5 hash calculated over data: 2eaf712dad80f66e30dea00365b4579b
SHA1 hash calculated over data:
655e9bddb36a3f9c5c4cc8bf32b8c5b41af9f52e
======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: BAAD80E8781E55F2E3EF528CA73BD41D228C1377</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>
</table>
</td></tr>
</table>

Test Case DA-06-SATA48 Sumuri Paladin 3.0.0		
	AM-02 Source is type DS.	as expected
	AM-03 Execution environment is XE.	as expected
	AM-05 An image is created on file system type FS.	as expected
	AM-06 All visible sectors acquired.	as expected
	AM-08 All sectors accurately acquired.	as expected
	AO-01 Image file is complete and accurate.	as expected
	AO-05 Multifile image created.	as expected
	AO-22 Tool calculates hashes by block.	option not available
	AO-23 Logged information is correct.	as expected
	AO-24 Source is unchanged by acquisition.	as expected
Analysis:	Expected results achieved	

5.2.16 DA-06-SCSI

Test Case DA-06-SCSI Sumuri Paladin 3.0.0	
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:	jrr
Test Host:	frank
Test Date:	Fri Aug 31 13:47:44 2012
Drives:	src(E0) dst (none) other (OF-FU)
Source Setup:	src hash (SHA1): < 4A6941F1337A8A22B10FC844B4D7FA6158BECB82 > src hash (MD5): < A97C8F36B7AC9D5233B90AC09284F938 > 17938985 total sectors (9184760320 bytes) Model (ATLAS10K2-TY092J) serial # (169028142436)
Log Highlights:	====== Tool Settings: ====== format E01 size 2000 MB OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ====== Image file segments ====== 1 137220479 2012-08-31 02:50 da-06-scsi.E01 2 1138 2012-08-31 02:50 da-06-scsi.log.txt ======== Excerpt from Tool log ======== Source Drive: /dev/sde: QUANTUM ATLAS10K2-TY092J DDD6 ============== Hashes: Hash values calculated during initial creation: Total (md5): a97c8f36b7ac9d5233b90ac09284f938 MD5 hash calculated over data: a97c8f36b7ac9d5233b90ac09284f938 SHA1 hash calculated over data: 4a6941f1337a8a22b10fc844b4d7fa6158becb82 ======== End of Excerpt from Tool log ======== ====== Source drive rehash ====== Rehash (SHA1) of source: 4A6941F1337A8A22B10FC844B4D7FA6158BECB82
Results:	

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

Test Case DA-06-SCSI Sumuri Paladin 3.0.0		
	AO-24 Source is unchanged by acquisition.	as expected
Analysis:	Expected results achieved	

5.2.17 DA-06-USB

Test Case DA-06-USB Sumuri Paladin 3.0.0	
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:	jrr
Test Host:	Scimitar
Test Date:	Wed Aug 29 14:57:35 2012
Drives:	src(63-FU2) dst (none) other (OC-FU)
Source Setup:	src hash (SHA256): < EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D > src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B > src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC > 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 Settings: ====== format dd size 2000 MB OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ====== Image file segments ====== 1 2097152000 2012-08-29 15:23 da-06-usb.001 2 2097152000 2012-08-29 15:25 da-06-usb.002 3 2097152000 2012-08-29 15:26 da-06-usb.003 . . . 27 2097152000 2012-08-29 15:56 da-06-usb.027 28 2097152000 2012-08-29 15:57 da-06-usb.028 29 1339899904 2012-08-29 15:58 da-06-usb.029 ======== Excerpt from Tool log ======== Source Drive: Source Physical device SAMSUNG SP0612N 215C1FA1CF 60GB (/dev/sdb) ============== Hashes: Hash values calculated during initial creation: Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec Total (sha1): f7069edcbeac863c88deced82159f22da96be99b ======== End of Excerpt from Tool log ========

Test Case DA-06-USB Sumuri Paladin 3.0.0	
	====== Source drive rehash ====== Rehash (SHA1) of source: F7069EDCBEAC863C88DECED82159F22DA96BE99B
Results:	

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

Analysis:	Expected results achieved

5.2.18 DA-07-CF

Test Case DA-07-CF Sumuri Paladin 3.0.0	
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:	csr
Test Host:	MaGarrett
Test Date:	Tue Aug 28 20:22:57 2012
Drives:	src(C1-CF) dst (49-sata) other (none)
Source Setup:	src hash (SHA256): < C7CF0218222DF80D5316511D6814266C7FA507C13F795AD3D323BB73C1590D80 > src hash (SHA1): < 5B8235178DF99FA307430C088F81746606638A0B > src hash (MD5): < 776DF8B4D2589E21DEBCF589EDC16D78 > 503808 total sectors (257949696 bytes) Model (CF) serial # () N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 778135908 1141509631 0357/116/40 0357/032/45 Boot 72 other 2 P 168689522 1936028240 0288/115/43 0367/114/50 Boot 65 other 3 P 1869881465 1936028192 0366/032/33 0357/032/43 Boot 79 other 4 P 2885681152 000055499 0372/097/50 0000/010/00 Boot 0D other 1 1141509631 sectors 584452931072 bytes 2 1936028240 sectors 991246458880 bytes 3 1936028192 sectors 991246434304 bytes 4 000055499 sectors 28415488 bytes
Log Highlights:	====== Tool Settings: ====== image size: 2GB image format: dmg OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ====== Image file segments ====== 1 257949696 Aug 28 19:57 da-07-cf.dmg 2 801 Aug 28 19:57 da-07-cf.log.txt ======== Excerpt from Tool log ======== Source Drive: Source C1-CF on Physical device Generic CF 0000001 257MB (/dev/sdb) ============== Hashes: Hash values calculated during initial creation: Total (md5): 776df8b4d2589e21debcf589edc16d78 Total (sha1): 5b8235178df99fa307430c088f81746606638a0b ======== End of Excerpt from Tool log ======== ====== Source drive rehash ====== Rehash (SHA1) of source: 5B8235178DF99FA307430C088F81746606638A0B
Results:	**Assertion & Expected Result** | **Actual Result**

Test Case DA-07-CF Sumuri Paladin 3.0.0		
	AM-01 Source acquired using interface AI.	as expected
	AM-02 Source is type DS.	as expected
	AM-03 Execution environment is XE.	as expected
	AM-05 An image is created on file system type FS.	as expected
	AM-06 All visible sectors acquired.	as expected
	AM-08 All sectors accurately acquired.	as expected
	AO-01 Image file is complete and accurate.	as expected
	AO-05 Multifile image created.	as expected
	AO-22 Tool calculates hashes by block.	option not available
	AO-23 Logged information is correct.	as expected
	AO-24 Source is unchanged by acquisition.	as expected
Analysis:	Expected results achieved	

5.2.19 DA-07-EXFAT

Test Case DA-07-EXFAT Sumuri Paladin 3.0.0	
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:	csr
Test Host:	McGarrett
Test Date:	Tue Aug 28 03:43:54 2012
Drives:	src(49-sata) dst (none) other (0F-FU)
Source Setup:	src hash (SHA1): < 6EC98F42EB5914D1F9D1661C0BB0A3660569F95B > src hash (MD5): < 30BAB74F67783C0555BCBD73DD4D0D5E > 156301488 total sectors (80026361856 bytes) Model (ST380815AS) serial # (5QZ5TD8Y) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000002048 010485760 0000/032/33 0652/213/09 07 NTFS 2 P 010490445 005863725 0653/000/01 1017/254/63 83 Linux 3 P 016354170 007807590 1018/000/01 1023/254/63 83 Linux 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 010485760 sectors 5368709120 bytes 2 005863725 sectors 3002227200 bytes 3 007807590 sectors 3997486080 bytes 49-SATAEXFAT-sha256 10485760 1309F5D1C2BC16E02F9C87A6AC8D79308F636B34DC002081757C4564A1373497 49-SATAEXFAT-sha1sum 10485760 3D44F34844E82F9DEDDD5CDC33E18EC066CF1EAB 49-SATAEXFAT-md5sum 10485760 E85782BF9358629D0115B70EEDE2C616
Log Highlights:	====== Tool Settings: ====== image size: 2GB image format: dmg OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ====== Image file segments ====== 1 2097152000 Aug 28 03:59 da-07-exFAT.002.dmgpart 2 1174405120 Aug 28 04:00 da-07-exFAT.003.dmgpart 3 2097152000 Aug 28 03:58 da-07-exFAT.dmg 4 3062 Aug 28 04:00 da-07-exFAT.log.txt ======== Excerpt from Tool log ======== Source Drive: Model Number: ST380815AS Serial Number: 5QZ5TD8Y ============== Hashes: Hash values calculated during initial creation: Total (md5): e85782bf9358629d0115b70eede2c616 Total (sha1): 3d44f34844e82f9deddd5cdc33e18ec066cf1eab ======== End of Excerpt from Tool log ======== ====== Source drive rehash ======

Test Case DA-07-EXFAT Sumuri Paladin 3.0.0	
	Rehash (MD5) of source: 80026361856 bytes (80 GB) copied6EC98F42EB5914D1F9D1661C0BB0A3660569F95B
Results:	

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

Analysis:	Expected results achieved

5.2.20 DA-07-EXT2

Test Case DA-07-EXT2 Sumuri Paladin 3.0.0	
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:	csr
Test Host:	DeathStar
Test Date:	Tue Sep 11 07:34:19 2012
Drives:	src(43) dst (none) other (OC-FU)
Source Setup:	src hash (SHA256): < 2658F47603DE6B1D883B64823E9733F578658D08D06A4BB8C053C4F57BDC615E > src hash (SHA1): < 888E2E7F7AD237DC7A732281DD93F325065E5871 > src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 > 78125000 total sectors (40000000000 bytes) Model (0BB-75JHC0) serial # (WD-WMAMC46588) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057143205 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027712125 1023/000/01 1023/254/63 05 extended 15 S 000000063 027712062 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027712062 sectors 14188575744 bytes 43ext2-md5sum 5371075583 C7A84DE9ACBCB05463604CE8823D0874 43ext2-sha1sum 5371075583 283BCC32DE892C12C37698AF7E38703619E57F57
Log Highlights:	====== Tool Settings: ====== image size: 2GB image format: dd OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09

Test Case DA-07-EXT2 Sumuri Paladin 3.0.0

```
UTC 2012 i686 i686 i386 GNU/Linux


====== Image file segments ======
     1  2097152000 Sep 11 07:54 da-07-ext2.001
     2  2097152000 Sep 11 07:55 da-07-ext2.002
     3  1176771584 Sep 11 07:56 da-07-ext2.003
     4        3003 Sep 11 07:56 da-07-ext2.log.txt
======== Excerpt from Tool log ========
Source Drive:
       Model Number:       WDC WD400BB-75JHC0
       Serial Number:      WD-WMAMC4658888
============== Hashes:
Hash values calculated during initial creation:
Total (md5): c7a84de9acbcb05463604ce8823d0874
Total (sha1): 283bcc32de892c12c37698af7e38703619e57f57
======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: 888E2E7F7AD237DC7A732281DD93F325065E5871
```

Results:

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

Analysis: Expected results achieved

5.2.21 DA-07-EXT3

Test Case DA-07-EXT3 Sumuri Paladin 3.0.0	
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:	csr
Test Host:	McGarrett
Test Date:	Tue Aug 28 04:43:25 2012
Drives:	src(49-sata) dst (none) other (0F-FU)
Source Setup:	src hash (SHA1): < 6EC98F42EB5914D1F9D1661C0BB0A3660569F95B > src hash (MD5): < 30BAB74F67783C0555BCBD73DD4D0D5E > 156301488 total sectors (80026361856 bytes) Model (ST380815AS) serial # (5QZ5TD8Y) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000002048 010485760 0000/032/33 0652/213/09 07 NTFS 2 P 010490445 005863725 0653/000/01 1017/254/63 83 Linux 3 P 016354170 007807590 1018/000/01 1023/254/63 83 Linux 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 010485760 sectors 5368709120 bytes 2 005863725 sectors 3002227200 bytes 3 007807590 sectors 3997486080 bytes 49-SATAEXT3-md5sum 5863725 A25176AE775F65181DAC8C8D051DDF5D 49-SATAEXT3-sha1sum 5863725 FDF0F2BA2D4CB2D45E45717213AE218880236418
Log Highlights:	====== Tool Settings: ====== image size: 2GB image format: dd OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ====== Image file segments ====== 1 2097152000 Aug 28 04:52 da-07-ext3.001 2 905075200 Aug 28 04:52 da-07-ext3.002 3 2930 Aug 28 04:52 da-07-ext3.log.txt ======== Excerpt from Tool log ======== Source Drive: Model Number: ST380815AS Serial Number: 5QZ5TD8Y ============== Hashes: Hash values calculated during initial creation: Total (md5): a25176ae775f65181dac8c8d051ddf5d Total (sha1): fdf0f2ba2d4cb2d45e45717213ae218880236418 ======== End of Excerpt from Tool log ======== ====== Source drive rehash ====== Rehash (SHA1) of source: 6EC98F42EB5914D1F9D1661C0BB0A3660569F95B
Results:	**Assertion & Expected Result** | **Actual Result**

Test Case DA-07-EXT3 Sumuri Paladin 3.0.0		
	AM-01 Source acquired using interface AI.	as expected
	AM-02 Source is type DS.	as expected
	AM-03 Execution environment is XE.	as expected
	AM-05 An image is created on file system type FS.	as expected
	AM-06 All visible sectors acquired.	as expected
	AM-08 All sectors accurately acquired.	as expected
	AO-01 Image file is complete and accurate.	as expected
	AO-05 Multifile image created.	as expected
	AO-22 Tool calculates hashes by block.	option not available
	AO-23 Logged information is correct.	as expected
	AO-24 Source is unchanged by acquisition.	as expected
Analysis:	Expected results achieved	

5.2.22 DA-07-EXT4

Test Case DA-07-EXT4 Sumuri Paladin 3.0.0	
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:	csr
Test Host:	McGarrett
Test Date:	Tue Aug 28 18:08:42 2012
Drives:	src(49-sata) dst (none) other (0F-FU)
Source Setup:	src hash (SHA1): < 6EC98F42EB5914D1F9D1661C0BB0A3660569F95B > src hash (MD5): < 30BAB74F67783C0555BCBD73DD4D0D5E > 156301488 total sectors (80026361856 bytes) Model (ST380815AS) serial # (5QZ5TD8Y) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000002048 010485760 0000/032/33 0652/213/09 07 NTFS 2 P 010490445 005863725 0653/000/01 1017/254/63 83 Linux 3 P 016354170 007807590 1018/000/01 1023/254/63 83 Linux 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 010485760 sectors 5368709120 bytes 2 005863725 sectors 3002227200 bytes 3 007807590 sectors 3997486080 bytes 49-SATAEXT4-md5sum 7807590 567F2826AB468D69F97CB0D1878BE25D 49-SATAEXT4-sha1sum 7807590 F28A79F5E5CD28F859A1AC6B18A2CA3682D15A2A
Log Highlights:	====== Tool Settings: ====== image size: 2GB image format: E01 OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ====== Image file segments ====== 1 58366574 Aug 28 18:24 da-07-ext4.E01 2 2884 Aug 28 18:24 da-07-ext4.log.txt ======== Excerpt from Tool log ======== Source Drive: Model Number: ST380815AS Serial Number: 5QZ5TD8Y ============== Hashes: Hash values calculated during initial creation: Total (md5): 567f2826ab468d69f97cb0d1878be25d MD5 hash calculated over data: 567f2826ab468d69f97cb0d1878be25d SHA1 hash calculated over data: f28a79f5e5cd28f859a1ac6b18a2ca3682d15a2a ======== End of Excerpt from Tool log ======== ====== Source drive rehash ====== Rehash (SHA1) of source: 6EC98F42EB5914D1F9D1661C0BB0A3660569F95B
Results:	

Test Case DA-07-EXT4 Sumuri Paladin 3.0.0		
	Assertion & Expected Result	**Actual Result**
	AM-01 Source acquired using interface AI.	as expected
	AM-02 Source is type DS.	as expected
	AM-03 Execution environment is XE.	as expected
	AM-05 An image is created on file system type FS.	as expected
	AM-06 All visible sectors acquired.	as expected
	AM-08 All sectors accurately acquired.	as expected
	AO-01 Image file is complete and accurate.	as expected
	AO-05 Multifile image created.	as expected
	AO-22 Tool calculates hashes by block.	option not available
	AO-23 Logged information is correct.	as expected
	AO-24 Source is unchanged by acquisition.	as expected
Analysis:	Expected results achieved	

5.2.23 DA-07-F12

Test Case DA-07-F12 Sumuri Paladin 3.0.0	
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:	csr
Test Host:	McGarrett
Test Date:	Thu Aug 30 03:12:25 2012
Drives:	src(43) dst (none) other (0F-FU)
Source Setup:	src hash (SHA256): < 2658F47603DE6B1D883B64823E9733F578658D08D06A4BB8C053C4F57BDC615E > src hash (SHA1): < 888E2E7F7AD237DC7A732281DD93F325065E5871 > src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 > 78125000 total sectors (40000000000 bytes) Model (0BB-75JHC0) serial # (WD-WMAMC46588) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057143205 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027712125 1023/000/01 1023/254/63 05 extended 15 S 000000063 027712062 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027712062 sectors 14188575744 bytes 43F12-md5sum 16418303 CBA0C9984F51778E89DEF0C6BED06864 43F12-sha1sum 16418303 6853B517F50BF3CCADED3DB5FEAE08C18C62FCA0
Log Highlights:	====== Tool Settings: ====== image size: 2GB image format: E01

Test Case DA-07-F12 Sumuri Paladin 3.0.0

```
OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09
UTC 2012 i686 i686 i386 GNU/Linux


====== Image file segments ======
     1  349969 Aug 30 03:58 da-07-FAT12.E01
     2    3209 Aug 30 03:58 da-07-FAT12.log.txt
======== Excerpt from Tool log ========
Source Drive:
       Model Number:       WDC WD400BB-75JHC0
       Serial Number:      WD-WMAMC4658888
============== Hashes:
Hash values calculated during initial creation:
Total (md5): cba0c9984f51778e89def0c6bed06864
MD5 hash calculated over data:       cba0c9984f51778e89def0c6bed06864
SHA1 hash calculated over data:
       6853b517f50bf3ccaded3db5feae08c18c62fca0
Hash values for verification started at 20120830 03:58:22:
MD5 hash stored in file:      cba0c9984f51778e89def0c6bed06864
MD5 hash calculated over data:       cba0c9984f51778e89def0c6bed06864
SHA1 hash stored in file:     6853b517f50bf3ccaded3db5feae08c18c62fca0
SHA1 hash calculated over data:
       6853b517f50bf3ccaded3db5feae08c18c62fca0
======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: 888E2E7F7AD237DC7A732281DD93F325065E5871
```

Results:

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

Analysis: Expected results achieved

5.2.24 DA-07-F16

Test Case DA-07-F16 Sumuri Paladin 3.0.0	
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:	csr
Test Host:	McGarrett
Test Date:	Thu Aug 30 03:12:25 2012
Drives:	src(43) dst (none) other (0F-FU)
Source Setup:	src hash (SHA256): < 2658F47603DE6B1D883B64823E9733F578658D08D06A4BB8C053C4F57BDC615E > src hash (SHA1): < 888E2E7F7AD237DC7A732281DD93F325065E5871 > src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 > 78125000 total sectors (40000000000 bytes) Model (0BB-75JHC0) serial # (WD-WMAMC46588) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057143205 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027712125 1023/000/01 1023/254/63 05 extended 15 S 000000063 027712062 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027712062 sectors 14188575744 bytes 43F16-md5sum 1077479423 37E81FFB31C3CB38AA48B2237500908E 43F16-sha1sum 1077479423 443CCEC9A22F726DAF6CE384817151C83B3EBC8B 43F16-sha1sum 1077479423 443CCEC9A22F726DAF6CE384817151C83B3EBC8B
Log Highlights:	====== Tool Settings: ====== image size: 2GB image format: DMG

Test Case DA-07-F16 Sumuri Paladin 3.0.0

```
OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09
UTC 2012 i686 i686 i386 GNU/Linux


====== Image file segments ======
     1  1077479424 Aug 30 04:12 da-07-FAT16.dmg
     2        2756 Aug 30 04:12 da-07-FAT16.log.txt
======== Excerpt from Tool log ========
Source Drive:
       Model Number:       WDC WD400BB-75JHC0
       Serial Number:      WD-WMAMC4658888
============== Hashes:
Hash values calculated during initial creation:
Total (md5): 37e81ffb31c3cb38aa48b2237500908e
Total (sha1): 443ccec9a22f726daf6ce384817151c83b3ebc8b
======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: 888E2E7F7AD237DC7A732281DD93F325065E5871
```

Results:

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

Analysis: Expected results achieved

5.2.25 DA-07-F32

Test Case DA-07-F32 Sumuri Paladin 3.0.0	
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:	csr
Test Host:	McGarrett
Test Date:	Thu Aug 30 03:12:25 2012
Drives:	src(43) dst (none) other (0F-FU)
Source Setup:	src hash (SHA256): < 2658F47603DE6B1D883B64823E9733F578658D08D06A4BB8C053C4F57BDC615E > src hash (SHA1): < 888E2E7F7AD237DC7A732281DD93F325065E5871 > src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 > 78125000 total sectors (40000000000 bytes) Model (0BB-75JHC0) serial # (WD-WMAMC46588) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057143205 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027712125 1023/000/01 1023/254/63 05 extended 15 S 000000063 027712062 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027712062 sectors 14188575744 bytes 43F32-md5sum 4301789183 2C4D8D450E5AD28329F616D87114CCFE 43F32-sha1sum 4301789183 72462489BCF79A98B59B6A8CD938FEB46FA2A781
Log Highlights:	====== Tool Settings: ====== image size: 2GB image format: dd

Test Case DA-07-F32 Sumuri Paladin 3.0.0

```
OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09
UTC 2012 i686 i686 i386 GNU/Linux


====== Image file segments ======
     1  2097152000 Aug 30 05:40 da-07-f32.001
     2  2097152000 Aug 30 05:41 da-07-f32.002
     3   107485184 Aug 30 05:41 da-07-f32.003
     4        2994 Aug 30 05:41 da-07-f32.log.txt
======== Excerpt from Tool log ========
Source Drive:
       Model Number:       WDC WD400BB-75JHC0
       Serial Number:      WD-WMAMC4658888
============== Hashes:
Hash values calculated during initial creation:
Total (md5): 2c4d8d450e5ad28329f616d87114ccfe
Total (sha1): 72462489bcf79a98b59b6a8cd938feb46fa2a781
======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: 888E2E7F7AD237DC7A732281DD93F325065E5871
```

Results:

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

Analysis: Expected results achieved

5.2.26 DA-07-F32X

Test Case DA-07-F32X Sumuri Paladin 3.0.0	
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:	csr
Test Host:	DeathStar
Test Date:	Tue Sep 11 07:36:48 2012
Drives:	src(43) dst (none) other (OC-FU)
Source Setup:	src hash (SHA256): < 2658F47603DE6B1D883B64823E9733F578658D08D06A4BB8C053C4F57BDC615E > src hash (SHA1): < 888E2E7F7AD237DC7A732281DD93F325065E5871 > src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 > 78125000 total sectors (40000000000 bytes) Model (0BB-75JHC0) serial # (WD-WMAMC46588) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057143205 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027712125 1023/000/01 1023/254/63 05 extended 15 S 000000063 027712062 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027712062 sectors 14188575744 bytes 43F32x-md5sum 10742183424 5980CB0FA68E9862C65765DF50F00906 43F32x-sha1sum 10742183423 379C1AC47AF956FC8C80389C2A7427A7F8FB4E89 43F32x-sha1sum 10742183423 379C1AC47AF956FC8C80389C2A7427A7F8FB4E89
Log Highlights:	====== Tool Settings: ====== image size: 2GB image format:E01

Test Case DA-07-F32X Sumuri Paladin 3.0.0

```
OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09
UTC 2012 i686 i686 i386 GNU/Linux


====== Image file segments ======
     1  .:
     2  119 case.txt
     3    0 ls.txt
   . . .
     2
     3  /media/2TB_LACIE/da-07-F32X/:
     4  160134725 da-07-F32X.E01
======== Excerpt from Tool log ========
Source Drive:
       Model Number:       WDC WD400BB-75JHC0
       Serial Number:      WD-WMAMC4658888
============== Hashes:
Hash values calculated during initial creation:
Total (md5): 5980cb0fa68e9862c65765df50f00906
MD5 hash calculated over data:       5980cb0fa68e9862c65765df50f00906
SHA1 hash calculated over data:
       379c1ac47af956fc8c80389c2a7427a7f8fb4e89
======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: 888E2E7F7AD237DC7A732281DD93F325065E5871
```

Results:

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

Analysis: Expected results achieved

5.2.27 DA-07-NTFS

Test Case DA-07-NTFS Sumuri Paladin 3.0.0	
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:	csr
Test Host:	McGarrett
Test Date:	Thu Aug 30 03:12:25 2012
Drives:	src(43) dst (none) other (0F-FU)
Source Setup:	src hash (SHA256): < 2658F47603DE6B1D883B64823E9733F578658D08D06A4BB8C053C4F57BDC615E > src hash (SHA1): < 888E2E7F7AD237DC7A732281DD93F325065E5871 > src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 > 78125000 total sectors (40000000000 bytes) Model (0BB-75JHC0) serial # (WD-WMAMC46588) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057143205 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027712125 1023/000/01 1023/254/63 05 extended 15 S 000000063 027712062 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027712062 sectors 14188575744 bytes 43ntfs-md5sum 14188575744 5D42FA317C802ACFEF2D313092D7411E 43ntfs-sha1sum 14188575744 73eb2d27564b060db796efb78694a10e6b43d23f
Log Highlights:	====== Tool Settings: ====== image size: 2GB image format: dmg

Test Case DA-07-NTFS Sumuri Paladin 3.0.0

```
OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09
UTC 2012 i686 i686 i386 GNU/Linux


====== Image file segments ======
     1  2097152000 da-07-nfts.002.dmgpart
     2  2097152000 da-07-nfts.003.dmgpart
     3  2097152000 da-07-nfts.004.dmgpart
   . . .
     5  2097152000 da-07-nfts.006.dmgpart
     6  1605663744 da-07-nfts.007.dmgpart
     7  2097152000 da-07-nfts.dmg
======== Excerpt from Tool log ========
Source Drive:
       Model Number:       WDC WD400BB-75JHC0
       Serial Number:      WD-WMAMC4658888
============== Hashes:
Hash values calculated during initial creation:
Total (md5): 5d42fa317c802acfef2d313092d7411e
Total (sha1): 73eb2d27564b060db796efb78694a10e6b43d23f
======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: 888E2E7F7AD237DC7A732281DD93F325065E5871
```

Results:

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

Analysis: Expected results achieved

5.2.28 DA-07-SWAP

Test Case DA-07-SWAP Sumuri Paladin 3.0.0	
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:	csr
Test Host:	McGarrett
Test Date:	Thu Aug 30 03:12:25 2012
Drives:	src(43) dst (none) other (0F-FU)
Source Setup:	src hash (SHA256): < 2658F47603DE6B1D883B64823E9733F578658D08D06A4BB8C053C4F57BDC615E > src hash (SHA1): < 888E2E7F7AD237DC7A732281DD93F325065E5871 > src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 > 78125000 total sectors (40000000000 bytes) Model (0BB-75JHC0) serial # (WD-WMAMC46588) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057143205 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027712125 1023/000/01 1023/254/63 05 extended 15 S 000000063 027712062 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027712062 sectors 14188575744 bytes 43swap-md5sum 2154991103 4B602964A30FE20D1B22B046A7375A7C 43swap-sha1sum 2154991103 F5B062CC31DA088DF7FAF8F7A47E500BF4244BCF
Log Highlights:	====== Tool Settings: ====== image size: 2GB image format: E01

Test Case DA-07-SWAP Sumuri Paladin 3.0.0

```
OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09
UTC 2012 i686 i686 i386 GNU/Linux


====== Image file segments ======
     1  32164591 Aug 30 05:15 da-07-swap.E01
     2      2828 Aug 30 05:15 da-07-swap.log.txt
======== Excerpt from Tool log ========
Source Drive:
       Model Number:       WDC WD400BB-75JHC0
       Serial Number:      WD-WMAMC4658888
============== Hashes:
Hash values calculated during initial creation:
Total (md5): ea8fea1fb95c0e05ed13dd42a57e8932
MD5 hash calculated over data:       ea8fea1fb95c0e05ed13dd42a57e8932
SHA1 hash calculated over data:
       18b73d892d772b88437ce0392e1732ca8fe2a2f4
======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: 888E2E7F7AD237DC7A732281DD93F325065E5871
```

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.	Seven sectors acquired as zeros
AO-01 Image file is complete and accurate.	as expected
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	as expected

Analysis: Expected results not achieved

5.2.29 DA-07-THUMB

Test Case DA-07-THUMB Sumuri Paladin 3.0.0	
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:	csr
Test Host:	McGarrett
Test Date:	Tue Aug 28 20:28:28 2012
Drives:	src(D5-thumb) dst (none) other (0F-FU)
Source Setup:	src hash (SHA1): < D68520EF74A336E49DCCF83815B7B08FDC53E38A > src hash (MD5): < C843593624B2B3B878596D8760B19954 > 505856 total sectors (258998272 bytes) Model (usb2.0Flash Disk) serial # ()
Log Highlights:	====== Tool Settings: ====== image size: 2GB image format: dd OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ====== Image file segments ====== 1 258998272 Aug 28 20:45 da-07-thumb.001 2 833 Aug 28 20:45 da-07-thumb.log.txt ======== Excerpt from Tool log ======== Source Drive: Source Physical device CRUCIAL usb2.0Flash Disk 1040000000000C0D 258MB (/dev/sda) ============== Hashes: Hash values calculated during initial creation: Total (md5): c843593624b2b3b878596d8760b19954 Total (sha1): d68520ef74a336e49dccf83815b7b08fdc53e38a ======== End of Excerpt from Tool log ======== ====== Source drive rehash ====== Rehash (SHA1) of source: D68520EF74A336E49DCCF83815B7B08FDC53E38A
Results:	

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

Test Case DA-07-THUMB Sumuri Paladin 3.0.0	
Analysis:	Expected results achieved

5.2.30 DA-09

Test Case DA-09 Sumuri Paladin 3.0.0	
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:	jrr
Test Host:	frank
Test Date:	Thu Sep 6 09:30:38 2012
Drives:	src(ED-BAD-CPR4) dst (04-SATA) other (none)
Source Setup:	No before hash for ED-BAD-CPR4 Known Bad Sector List for ED-BAD-CPR4 Manufacturer: Maxtor Model: DiamondMax Plus 9 Serial Number: Y23EGSJE Capacity: 60GB Interface: SATA 35 faulty sectors 6160328, 6160362, 10041157, 10041995, 10118634, 10209448, 11256569, 14115689, 14778391, 14778392, 14778449, 14778479, 14778517, 14778518, 14778519, 14778520, 14778521, 14778551, 14778607, 14778626, 14778627, 14778650, 14778668, 14778669, 14778709, 14778727, 14778747, 14778772, 14778781, 14778870, 14778949, 14778953, 14779038, 14779113, 14779321
Log Highlights:	====== Destination drive setup ====== 156301488 sectors wiped with 4 ====== Comparison of original to clone drive ====== Sectors compared: 120103200 Sectors match: 6160328 Sectors differ: 113942872 Bytes differ: 735660040 Diffs range 6160328-120103199 Source (120103200) has 36198288 fewer sectors than destination (156301488) Zero fill: 24 Src Byte fill (ED): 520 Dst Byte fill (04): 36197744 Other fill: 0 Other no fill: 0 Zero fill range: 120103720-120103743 Src fill range: 120103200-120103719 Dst fill range: 120103744-156301487

Test Case DA-09 Sumuri Paladin 3.0.0	
	Other fill range: Other not filled range: 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ======== Excerpt from Tool log ======== Source Drive: Model Number: Maxtor 6Y060M0 Serial Number: Y23EGSJE dcfldd:/dev/sda: Input/output error 96255+1 records in 96256+0 records out dcfldd:/dev/sda: Input/output error 156891+3 records in 156894+0 records out dcfldd:/dev/sda: Input/output error 156903+5 records in 156908+0 records out dcfldd:/dev/sda: Input/output error 158099+7 records in 158106+0 records out dcfldd:/dev/sda: Input/output error 159517+8 records in 159525+0 records out dcfldd:/dev/sda: Input/output error 175877+10 records in 175887+0 records out dcfldd:/dev/sda: Input/output error 220549+12 records in 220561+0 records out dcfldd:/dev/sda: Input/output error 230902+14 records in 230916+0 records out dcfldd:/dev/sda: Input/output error 230902+15 records in 230917+0 records out dcfldd:/dev/sda: Input/output error 230902+16 records in 230918+0 records out dcfldd:/dev/sda: Input/output error 230902+18 records in 230920+0 records out dcfldd:/dev/sda: Input/output error 230902+19 records in 230921+0 records out dcfldd:/dev/sda: Input/output error 230902+21 records in 230923+0 records out dcfldd:/dev/sda: Input/output error 230902+23 records in 230925+0 records out dcfldd:/dev/sda: Input/output error 230902+25 records in 230927+0 records out dcfldd:/dev/sda: Input/output error 230902+27 records in 230929+0 records out dcfldd:/dev/sda: Input/output error 230902+29 records in 230931+0 records out dcfldd:/dev/sda: Input/output error 230904+31 records in 230935+0 records out 1876588+33 records in 1876621+0 records out ============== Hashes: Hash values calculated during initial creation: Total (md5): 578d7769b79d58968435b062cfd79d3a

Test Case DA-09 Sumuri Paladin 3.0.0	
	Total (sha1): 613d86cf602ad592d4e839e174e2dcef83fa6ba4 ======== End of Excerpt from Tool log ========
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.	as expected
AO-01 Image file is complete and accurate.	as expected
AO-05 Multifile image created.	as expected
AO-22 Tool calculates hashes by block.	option not available
AO-23 Logged information is correct.	as expected
AO-24 Source is unchanged by acquisition.	not checked

Analysis:	Expected results not achieved

5.2.31 DA-12

Test Case DA-12 Sumuri Paladin 3.0.0	
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:	csr
Test Host:	McGarrett
Test Date:	Tue Aug 28 21:27:39 2012
Drives:	src(07-sata) dst (none) other (6f)
Source Setup:	src hash (SHA256): < CE65C4A3C3164D3EBAD58D33BB2415D29E260E1F88DC5A131B1C4C9C2945B8A9 > src hash (SHA1): < 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E > src hash (MD5): < 2EAF712DAD80F66E30DEA00365B4579B > 156301488 total sectors (80026361856 bytes) Model (WDC WD800JD-32HK) serial # (WD-WMAJ91510044) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 156280257 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 156280257 sectors 80015491584 bytes
Log Highlights:	====== Tool Settings: ====== image size: 2GB image format: dd OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ====== Image file segments ====== 1 2097152000 da-12.001 2 2097152000 da-12.002 3 2097152000 da-12.003 . . . 27 2097152000 da-12.027 28 2097152000 da-12.028 29 1611894784 da-12.029 ============== Message from tool dcfldd:: No space left on device ======== Excerpt from Tool log ======== Source Drive: Model Number: WDC WD800JD-32HKA0 Serial Number: WD-WMAJ91510044 ============== Hashes: Hash values calculated during initial creation: ======== End of Excerpt from Tool log ======== ====== Source drive rehash ====== Rehash (SHA1) of source: 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E
Results:	**Assertion & Expected Result** | **Actual Result**

Test Case DA-12 Sumuri Paladin 3.0.0		
	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.	as expected
	AO-23 Logged information is correct.	as expected
	AO-24 Source is unchanged by acquisition.	as expected
Analysis:	Expected results achieved	

5.2.32 DA-14-ATA28

<table>
<tr><th colspan="2">Test Case DA-14-ATA28 Sumuri Paladin 3.0.0</th></tr>
<tr><td>Case Summary:</td><td>DA-14 Create an unaligned clone from an image file.</td></tr>
<tr><td>Assertions:</td><td>AM-03 The tool executes in execution environment XE.
AO-12 If requested, a clone is created from an image file.
AO-13 A clone is created using access interface DST-AI to write to the clone device.
AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
AO-17 If requested, any excess sectors on a clone destination device are not modified.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.</td></tr>
<tr><td>Tester Name:</td><td>csr</td></tr>
<tr><td>Test Host:</td><td>McGarrett</td></tr>
<tr><td>Test Date:</td><td>Wed Sep 5 01:40:02 2012</td></tr>
<tr><td>Drives:</td><td>src(12-IDE) dst (54-SATA) other (38-SATA)</td></tr>
<tr><td>Source Setup:</td><td>src hash (SHA1): < 10DC1439E56093FFA6F11E10442106F27D899F67 >
src hash (MD5): < ACAFB6838330FD24221199512A61D565 >
234441648 total sectors (120034123776 bytes)
14592/254/63 (max cyl/hd values)
14593/255/63 (number of cyl/hd)
Model (00JB-00REA0) serial # (WD-WCANMD0605)</td></tr>
<tr><td>Log Highlights:</td><td>====== Destination drive setup ======
312581808 sectors wiped with 54

====== Comparison of original to clone drive ======
Sectors compared: 234441648
Sectors match: 234441648
Sectors differ: 0
Bytes differ: 0
Diffs range
Source (312581808) has 78140160 more sectors than destination (234441648)
0 source read errors, 0 destination read errors

OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux

======== Excerpt from Tool log ========
============== Hashes:
Digest hash information
MD5: acafb6838330fd24221199512a61d565
SHA1: 10dc1439e56093ffa6f11e10442106f27d899f67
Hash values calculated during initial creation:
Total (md5): acafb6838330fd24221199512a61d565
Total (sha1): 10dc1439e56093ffa6f11e10442106f27d899f67
======== End of Excerpt from Tool log ========</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AO-12 A clone is created from an image file.</td><td>as expected</td></tr>
<tr><td>AO-13 Clone created using interface AI.</td><td>as expected</td></tr>
<tr><td>AO-14 An unaligned clone is created.</td><td>as expected</td></tr>
<tr><td>AO-17 Excess sectors are unchanged.</td><td>as expected</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

5.2.33 DA-14-ATA48

<table>
<tr><th colspan="2">Test Case DA-14-ATA48 Sumuri Paladin 3.0.0</th></tr>
<tr><td>Case Summary:</td><td>DA-14 Create an unaligned clone from an image file.</td></tr>
<tr><td>Assertions:</td><td>AM-03 The tool executes in execution environment XE.
AO-12 If requested, a clone is created from an image file.
AO-13 A clone is created using access interface DST-AI to write to the clone device.
AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
AO-17 If requested, any excess sectors on a clone destination device are not modified.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.</td></tr>
<tr><td>Tester Name:</td><td>csr</td></tr>
<tr><td>Test Host:</td><td>McGarrett</td></tr>
<tr><td>Test Date:</td><td>Tue Sep 4 23:11:02 2012</td></tr>
<tr><td>Drives:</td><td>src(4E) dst (32-IDE) other (38-SATA)</td></tr>
<tr><td>Source Setup:</td><td>src hash (SHA1): < 7DDFF1A74B2E2B7E7EE43C41CD9066E27986644D >
src hash (MD5): < 62C9436930204E0F38921771ACA1BB88 >
488397168 total sectors (250059350016 bytes)
30400/254/63 (max cyl/hd values)
30401/255/63 (number of cyl/hd)
IDE disk: Model (WDC WD2500JB-22FUA0) serial # (WD-WMAEP1925256)
N Start LBA Length Start C/H/S End C/H/S boot Partition type
1 P 000000063 488375937 0000/001/01 1023/254/63 Boot 07 NTFS
2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
1 488375937 sectors 250048479744 bytes</td></tr>
<tr><td>Log Highlights:</td><td>====== Destination drive setup ======
488397168 sectors wiped with 32

====== Comparison of original to clone drive ======
Sectors compared: 488397168
Sectors match: 488397168
Sectors differ: 0
Bytes differ: 0
Diffs range
0 source read errors, 0 destination read errors

OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux

======== Excerpt from Tool log ========
============== Hashes:
Hash values calculated during initial creation:
Total (md5): 62c9436930204e0f38921771aca1bb88
Total (sha1): 7ddff1a74b2e2b7e7ee43c41cd9066e27986644d
======== End of Excerpt from Tool log ========</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AO-12 A clone is created from an image file.</td><td>as expected</td></tr>
<tr><td>AO-13 Clone created using interface AI.</td><td>as expected</td></tr>
<tr><td>AO-14 An unaligned clone is created.</td><td>as expected</td></tr>
<tr><td>AO-17 Excess sectors are unchanged.</td><td>as expected</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

5.2.34 DA-14-CF

Test Case DA-14-CF Sumuri Paladin 3.0.0	
Case Summary:	DA-14 Create an unaligned clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	csr
Test Host:	McGarrett
Test Date:	Wed Aug 29 22:44:00 2012
Drives:	src(C1-CF) dst (C2-CF) other (0F-FU)
Source Setup:	src hash (SHA256): < C7CF0218222DF80D5316511D6814266C7FA507C13F795AD3D323BB73C1590D80 > src hash (SHA1): < 5B8235178DF99FA307430C088F81746606638A0B > src hash (MD5): < 776DF8B4D2589E21DEBCF589EDC16D78 > 503808 total sectors (257949696 bytes) Model (CF) serial # () N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 778135908 1141509631 0357/116/40 0357/032/45 Boot 72 other 2 P 168689522 1936028240 0288/115/43 0367/114/50 Boot 65 other 3 P 1869881465 1936028192 0366/032/33 0357/032/43 Boot 79 other 4 P 2885681152 000055499 0372/097/50 0000/010/00 Boot 0D other 1 1141509631 sectors 584452931072 bytes 2 1936028240 sectors 991246458880 bytes 3 1936028192 sectors 991246434304 bytes 4 000055499 sectors 28415488 bytes
Log Highlights:	====== Destination drive setup ====== 503808 sectors wiped with C2 ====== Comparison of original to clone drive ====== Sectors compared: 503808 Sectors match: 503808 Sectors differ: 0 Bytes differ: 0 Diffs range 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ======== Excerpt from Tool log ======== ============== Hashes: Hash values calculated during initial creation: Total (md5): 776df8b4d2589e21debcf589edc16d78 Total (sha1): 5b8235178df99fa307430c088f81746606638a0b ======== End of Excerpt from Tool log ========
Results:	**Assertion & Expected Result** / **Actual Result** AM-03 Execution environment is XE. / as expected AO-12 A clone is created from an image file. / as expected AO-13 Clone created using interface AI. / as expected AO-14 An unaligned clone is created. / as expected AO-17 Excess sectors are unchanged. / as expected AO-23 Logged information is correct. / as expected
Analysis:	Expected results achieved

5.2.35 DA-14-FW

Test Case DA-14-FW Sumuri Paladin 3.0.0	
Case Summary:	DA-14 Create an unaligned clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	jrr
Test Host:	Scimitar
Test Date:	Thu Aug 30 10:16:31 2012
Drives:	src(63-FU2) dst (04-SATA) other (OC-FU)
Source Setup:	src hash (SHA256): < EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D > src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B > src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC > 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:	====== Destination drive setup ====== 156301488 sectors wiped with 4 ====== Comparison of original to clone drive ====== Sectors compared: 117304992 Sectors match: 117304992 Sectors differ: 0 Bytes differ: 0 Diffs range Source (117304992) has 38996496 fewer sectors than destination (156301488) Zero fill: 0 Src Byte fill (63): 0 Dst Byte fill (04): 38996496 Other fill: 0 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: 117304992-156301487 Other fill range: Other not filled range: 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ======== Excerpt from Tool log ======== ============== Hashes: Hash values calculated during initial creation: Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec Total (sha1): f7069edcbeac863c88deced82159f22da96be99b

Test Case DA-14-FW Sumuri Paladin 3.0.0	
	======== End of Excerpt from Tool log ========
Results:	

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

Analysis:	Expected results achieved

5.2.36 DA-14-SATA28

Test Case DA-14-SATA28 Sumuri Paladin 3.0.0

Case Summary:	DA-14 Create an unaligned clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	jrr
Test Host:	Scimitar
Test Date:	Fri Aug 31 10:28:26 2012
Drives:	src(07-SATA) dst (05-SATA) other (OC-FU)
Source Setup:	src hash (SHA256): < CE65C4A3C3164D3EBAD58D33BB2415D29E260E1F88DC5A131B1C4C9C2945B8A9 > src hash (SHA1): < 655E9BDDB36A3F9C5C4CC8BF32B8C5B41AF9F52E > src hash (MD5): < 2EAF712DAD80F66E30DEA00365B4579B > 156301488 total sectors (80026361856 bytes) Model (WDC WD800JD-32HK) serial # (WD-WMAJ91510044) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 156280257 0000/001/01 1023/254/63 Boot 07 NTFS 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 156280257 sectors 80015491584 bytes
Log Highlights:	====== Destination drive setup ====== 156301488 sectors wiped with 5 ====== Comparison of original to clone drive ====== Sectors compared: 156301488 Sectors match: 156301488 Sectors differ: 0 Bytes differ: 0 Diffs range 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ======== Excerpt from Tool log ======== ============== Hashes: Digest hash information MD5: 2eaf712dad80f66e30dea00365b4579b SHA1: 655e9bddb36a3f9c5c4cc8bf32b8c5b41af9f52e Hash values calculated during initial creation: Total (md5): 2eaf712dad80f66e30dea00365b4579b Total (sha1): 655e9bddb36a3f9c5c4cc8bf32b8c5b41af9f52e ======== End of Excerpt from Tool log ========
Results:	

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

Analysis:	Expected results achieved

5.2.37 DA-14-SATA48

<table>
<tr><th colspan="2">Test Case DA-14-SATA48 Sumuri Paladin 3.0.0</th></tr>
<tr><td>Case Summary:</td><td>DA-14 Create an unaligned clone from an image file.</td></tr>
<tr><td>Assertions:</td><td>AM-03 The tool executes in execution environment XE.
AO-12 If requested, a clone is created from an image file.
AO-13 A clone is created using access interface DST-AI to write to the clone device.
AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
AO-17 If requested, any excess sectors on a clone destination device are not modified.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.</td></tr>
<tr><td>Tester Name:</td><td>jrr</td></tr>
<tr><td>Test Host:</td><td>Scimitar</td></tr>
<tr><td>Test Date:</td><td>Wed Sep 5 15:04:44 2012</td></tr>
<tr><td>Drives:</td><td>src(0D-SATA) dst (33-IDE) other (OC-FU)</td></tr>
<tr><td>Source Setup:</td><td>src hash (SHA1): < BAAD80E8781E55F2E3EF528CA73BD41D228C1377 >
src hash (MD5): < 1FA7C3CBE60EB9E89863DED2411E40C9 >
488397168 total sectors (250059350016 bytes)
30400/254/63 (max cyl/hd values)
30401/255/63 (number of cyl/hd)
Model (WDC WD2500JD-22F) serial # (WD-WMAEH2678216)
N Start LBA Length Start C/H/S End C/H/S boot Partition type
1 P 000000063 488375937 0000/001/01 1023/254/63 Boot 07 NTFS
2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
1 488375937 sectors 250048479744 bytes</td></tr>
<tr><td>Log Highlights:</td><td>====== Destination drive setup ======
488397168 sectors wiped with 33

====== Comparison of original to clone drive ======
Sectors compared: 488397168
Sectors match: 488397168
Sectors differ: 0
Bytes differ: 0
Diffs range
0 source read errors, 0 destination read errors

OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux

======== Excerpt from Tool log ========
============== Hashes:
Hash values calculated during initial creation:
Total (md5): 1fa7c3cbe60eb9e89863ded2411e40c9
Total (sha1): baad80e8781e55f2e3ef528ca73bd41d228c1377
======== End of Excerpt from Tool log ========</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AO-12 A clone is created from an image file.</td><td>as expected</td></tr>
<tr><td>AO-13 Clone created using interface AI.</td><td>as expected</td></tr>
<tr><td>AO-14 An unaligned clone is created.</td><td>as expected</td></tr>
<tr><td>AO-17 Excess sectors are unchanged.</td><td>as expected</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

5.2.38 DA-14-SCSI

<table>
<tr><th colspan="2">Test Case DA-14-SCSI Sumuri Paladin 3.0.0</th></tr>
<tr><td>Case Summary:</td><td>DA-14 Create an unaligned clone from an image file.</td></tr>
<tr><td>Assertions:</td><td>AM-03 The tool executes in execution environment XE.
AO-12 If requested, a clone is created from an image file.
AO-13 A clone is created using access interface DST-AI to write to the clone device.
AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
AO-17 If requested, any excess sectors on a clone destination device are not modified.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.</td></tr>
<tr><td>Tester Name:</td><td>jrr</td></tr>
<tr><td>Test Host:</td><td>frank</td></tr>
<tr><td>Test Date:</td><td>Fri Aug 31 15:00:31 2012</td></tr>
<tr><td>Drives:</td><td>src(E0) dst (31-IDE) other (OF-FU)</td></tr>
<tr><td>Source Setup:</td><td>src hash (SHA1): < 4A6941F1337A8A22B10FC844B4D7FA6158BECB82 >
src hash (MD5): < A97C8F36B7AC9D5233B90AC09284F938 >
17938985 total sectors (9184760320 bytes)
Model (ATLAS10K2-TY092J) serial # (169028142436)</td></tr>
<tr><td>Log Highlights:</td><td>====== Destination drive setup ======
35673120 sectors wiped with 31

====== Comparison of original to clone drive ======
Sectors compared: 17938985
Sectors match: 17938985
Sectors differ: 0
Bytes differ: 0
Diffs range
Source (17938985) has 17734135 fewer sectors than destination (35673120)
Zero fill: 0
Src Byte fill (E0): 0
Dst Byte fill (31): 17734135
Other fill: 0
Other no fill: 0
Zero fill range:
Src fill range:
Dst fill range: 17938985-35673119
Other fill range:
Other not filled range:
0 source read errors, 0 destination read errors

OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux

======== Excerpt from Tool log ========
============== Hashes:
Digest hash information
MD5: a97c8f36b7ac9d5233b90ac09284f938
SHA1: 4a6941f1337a8a22b10fc844b4d7fa6158becb82
Hash values calculated during initial creation:
Total (md5): a97c8f36b7ac9d5233b90ac09284f938
Total (sha1): 4a6941f1337a8a22b10fc844b4d7fa6158becb82
======== End of Excerpt from Tool log ========</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AO-12 A clone is created from an image file.</td><td>as expected</td></tr>
<tr><td>AO-13 Clone created using interface AI.</td><td>as expected</td></tr>
<tr><td>AO-14 An unaligned clone is created.</td><td>as expected</td></tr>
<tr><td>AO-17 Excess sectors are unchanged.</td><td>as expected</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
</table>
</td></tr>
</table>

Test Case DA-14-SCSI Sumuri Paladin 3.0.0	
Analysis:	Expected results achieved

5.2.39 DA-14-THUMB

<table>
<tr><th colspan="2">Test Case DA-14-THUMB Sumuri Paladin 3.0.0</th></tr>
<tr><td>Case Summary:</td><td>DA-14 Create an unaligned clone from an image file.</td></tr>
<tr><td>Assertions:</td><td>AM-03 The tool executes in execution environment XE.
AO-12 If requested, a clone is created from an image file.
AO-13 A clone is created using access interface DST-AI to write to the clone device.
AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
AO-17 If requested, any excess sectors on a clone destination device are not modified.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.</td></tr>
<tr><td>Tester Name:</td><td>csr</td></tr>
<tr><td>Test Host:</td><td>McGarrett</td></tr>
<tr><td>Test Date:</td><td>Wed Aug 29 23:15:07 2012</td></tr>
<tr><td>Drives:</td><td>src(D5-thumb) dst (D6-thumb) other (0F-FU)</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 # ()</td></tr>
<tr><td>Log Highlights:</td><td>====== Destination drive setup ======
4001760 sectors wiped with D6

====== Comparison of original to clone drive ======
Sectors compared: 505856
Sectors match: 505856
Sectors differ: 0
Bytes differ: 0
Diffs range
Source (505856) has 3495904 fewer sectors than destination (4001760)
Zero fill: 0
Src Byte fill (D5): 0
Dst Byte fill (D6): 3495904
Other fill: 0
Other no fill: 0
Zero fill range:
Src fill range:
Dst fill range: 505856-4001759
Other fill range:
Other not filled range:
0 source read errors, 0 destination read errors

OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux

======== Excerpt from Tool log ========
============== Hashes:
Hash values calculated during initial creation:
Total (md5): c843593624b2b3b878596d8760b19954
Total (sha1): d68520ef74a336e49dccf83815b7b08fdc53e38a
======== End of Excerpt from Tool log ========</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AO-12 A clone is created from an image file.</td><td>as expected</td></tr>
<tr><td>AO-13 Clone created using interface AI.</td><td>as expected</td></tr>
<tr><td>AO-14 An unaligned clone is created.</td><td>as expected</td></tr>
<tr><td>AO-17 Excess sectors are unchanged.</td><td>as expected</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

5.2.40 DA-14-USB

Test Case DA-14-USB Sumuri Paladin 3.0.0	
Case Summary:	DA-14 Create an unaligned clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source. AO-17 If requested, any excess sectors on a clone destination device are not modified. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	jrr
Test Host:	Scimitar
Test Date:	Thu Aug 30 14:25:59 2012
Drives:	src(63-FU2) dst (7A-SATA) other (OC-FU)
Source Setup:	src hash (SHA256): < EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D > src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B > src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC > 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:	====== Destination drive setup ====== 156250000 sectors wiped with 7A ====== Comparison of original to clone drive ====== Sectors compared: 117304992 Sectors match: 117304992 Sectors differ: 0 Bytes differ: 0 Diffs range Source (117304992) has 38945008 fewer sectors than destination (156250000) Zero fill: 0 Src Byte fill (63): 0 Dst Byte fill (7A): 38945008 Other fill: 0 Other no fill: 0 Zero fill range: Src fill range: Dst fill range: 117304992-156249999 Other fill range: Other not filled range: 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ======== Excerpt from Tool log ======== ============== Hashes: Hash values calculated during initial creation: Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec Total (sha1): f7069edcbeac863c88deced82159f22da96be99b

Test Case DA-14-USB Sumuri Paladin 3.0.0	
	======== End of Excerpt from Tool log ========
Results:	

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

Analysis:	Expected results achieved

5.2.41 DA-17

Test Case DA-17 Sumuri Paladin 3.0.0	
Case Summary:	DA-17 Create a truncated clone from an image file.
Assertions:	AM-03 The tool executes in execution environment XE. AO-12 If requested, a clone is created from an image file. AO-13 A clone is created using access interface DST-AI to write to the clone device. AO-19 If there is insufficient space to create a complete clone, a truncated clone is created using all available sectors of the clone device. AO-20 If a truncated clone is created, the tool notifies the user. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	csr
Test Host:	McGarrett
Test Date:	Wed Aug 29 01:20:03 2012
Drives:	src(41) dst (9E) other (0F-FU)
Source Setup:	src hash (SHA256): < FBF3AA21489653D880FFAE71449A9F7E8EE4F56A6C3BF58A3A3FFB13203F1B1D > src hash (SHA1): < 15CAA1A307271160D8372668BF8A03FC45A51CC9 > src hash (MD5): < 0A6A8EF78BDC14E2026710D8CCB5607C > 78125000 total sectors (40000000000 bytes) 65534/015/63 (max cyl/hd values) 65535/016/63 (number of cyl/hd) IDE disk: Model (WDC WD400BB-75JHC0) serial # (WD-WMAMC4658355) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 078107967 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 078107967 sectors 39991279104 bytes
Log Highlights:	====== Destination drive setup ====== 39102336 sectors wiped with 9E ====== Comparison of original to clone drive ====== Sectors compared: 39102336 Sectors match: 39102336 Sectors differ: 0 Bytes differ: 0 Diffs range Source (78125000) has 39022664 more sectors than destination (39102336) 0 source read errors, 0 destination read errors OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ============== Message from tool dcfldd:: No space left on device ======== Excerpt from Tool log ======== ============== Hashes: Digest hash information MD5: 0a6a8ef78bdc14e2026710d8ccb5607c SHA1: 15caa1a307271160d8372668bf8a03fc45a51cc9 Hash values calculated during initial creation: ======== End of Excerpt from Tool log ========
Results:	

Assertion & Expected Result	**Actual Result**
AM-03 Execution environment is XE.	as expected
AO-12 A clone is created from an image file.	as expected
AO-13 Clone created using interface AI.	as expected
AO-19 Truncated clone is created.	as expected
AO-20 User notified that clone is truncated.	as expected
AO-23 Logged information is correct.	as expected

Test Case DA-17 Sumuri Paladin 3.0.0	
Analysis:	Expected results achieved

5.2.42 DA-24

<table>
<tr><th colspan="2">Test Case DA-24 Sumuri Paladin 3.0.0</th></tr>
<tr><td>Case Summary:</td><td>DA-24 Verify a valid image.</td></tr>
<tr><td>Assertions:</td><td>AM-03 The tool executes in execution environment XE.
AO-06 If the tool performs an image file integrity check on an image file that has not been changed since the file was created, the tool shall notify the user that the image file has not been changed.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.</td></tr>
<tr><td>Tester Name:</td><td>jrr</td></tr>
<tr><td>Test Host:</td><td>Scimitar</td></tr>
<tr><td>Test Date:</td><td>Sat Sep 8 12:03:19 2012</td></tr>
<tr><td>Drives:</td><td>src(63-FU2) dst (none) other (OC-FU)</td></tr>
<tr><td>Source Setup:</td><td>src hash (SHA256): <
EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D >
src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B >
src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC >
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</td></tr>
<tr><td>Log Highlights:</td><td>OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux

======== Excerpt from Tool log ========
============== Hashes:
Hash values for verification started at 20120910 08:14:36:
Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec
Total (sha1): f7069edcbeac863c88deced82159f22da96be99b
======== End of Excerpt from Tool log ========</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AO-06 Tool verifies image file unchanged.</td><td>as expected</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

5.2.43 DA-25

Test Case DA-25 Sumuri Paladin 3.0.0	
Case Summary:	DA-25 Detect a corrupted image.
Assertions:	AM-03 The tool executes in execution environment XE. AO-07 If the tool performs an image file integrity check on an image file that has been changed since the file was created, the tool shall notify the user that the image file has been changed. AO-08 If the tool performs an image file integrity check on an image file that has been changed since the file was created, the tool shall notify the user of the affected locations. AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
Tester Name:	jrr
Test Host:	Scimitar
Test Date:	Mon Sep 10 10:14:10 2012
Drives:	src(43) dst (none) other (OF-FU)
Source Setup:	src hash (SHA256): < 2658F47603DE6B1D883B64823E9733F578658D08D06A4BB8C053C4F57BDC615E > src hash (SHA1): < 888E2E7F7AD237DC7A732281DD93F325065E5871 > src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 > 78125000 total sectors (40000000000 bytes) Model (0BB-75JHC0) serial # (WD-WMAMC46588) N Start LBA Length Start C/H/S End C/H/S boot Partition type 1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X 2 X 020980890 057143205 1023/000/01 1023/254/63 0F extended 3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12 4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended 5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16 6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended 7 S 000000063 004192902 1023/001/01 1023/254/63 16 other 8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended 9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32 10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended 11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux 12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap 14 x 029431080 027712125 1023/000/01 1023/254/63 05 extended 15 S 000000063 027712062 1023/001/01 1023/254/63 07 NTFS 16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry 1 020980827 sectors 10742183424 bytes 3 000032067 sectors 16418304 bytes 5 002104452 sectors 1077479424 bytes 7 004192902 sectors 2146765824 bytes 9 008401932 sectors 4301789184 bytes 11 010490382 sectors 5371075584 bytes 13 004208967 sectors 2154991104 bytes 15 027712062 sectors 14188575744 bytes
Log Highlights:	====== Image file corrupted for test run: ====== Change byte 151552 of file da-07-FAT16.dmg from 0x30 to 0x46 OS: Linux Paladin 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686 i686 i386 GNU/Linux ======== Excerpt from Tool log ======== ============== Hashes: Hash values for verification started at 20120910 10:31:58: Total (md5): 84a587911a67ba972d3151f107738dc9 Total (sha1): 676ae47cef13617c5ae31e4c49f58711ef6a39bd ======== End of Excerpt from Tool log ========
Results:	**Assertion & Expected Result** / **Actual Result** AM-03 Execution environment is XE. / as expected

Test Case DA-25 Sumuri Paladin 3.0.0		
	AO-07 User notified if image file has changed.	as expected
	AO-08 User notified of changed locations.	as expected
	AO-23 Logged information is correct.	as expected
Analysis:	Expected results achieved	