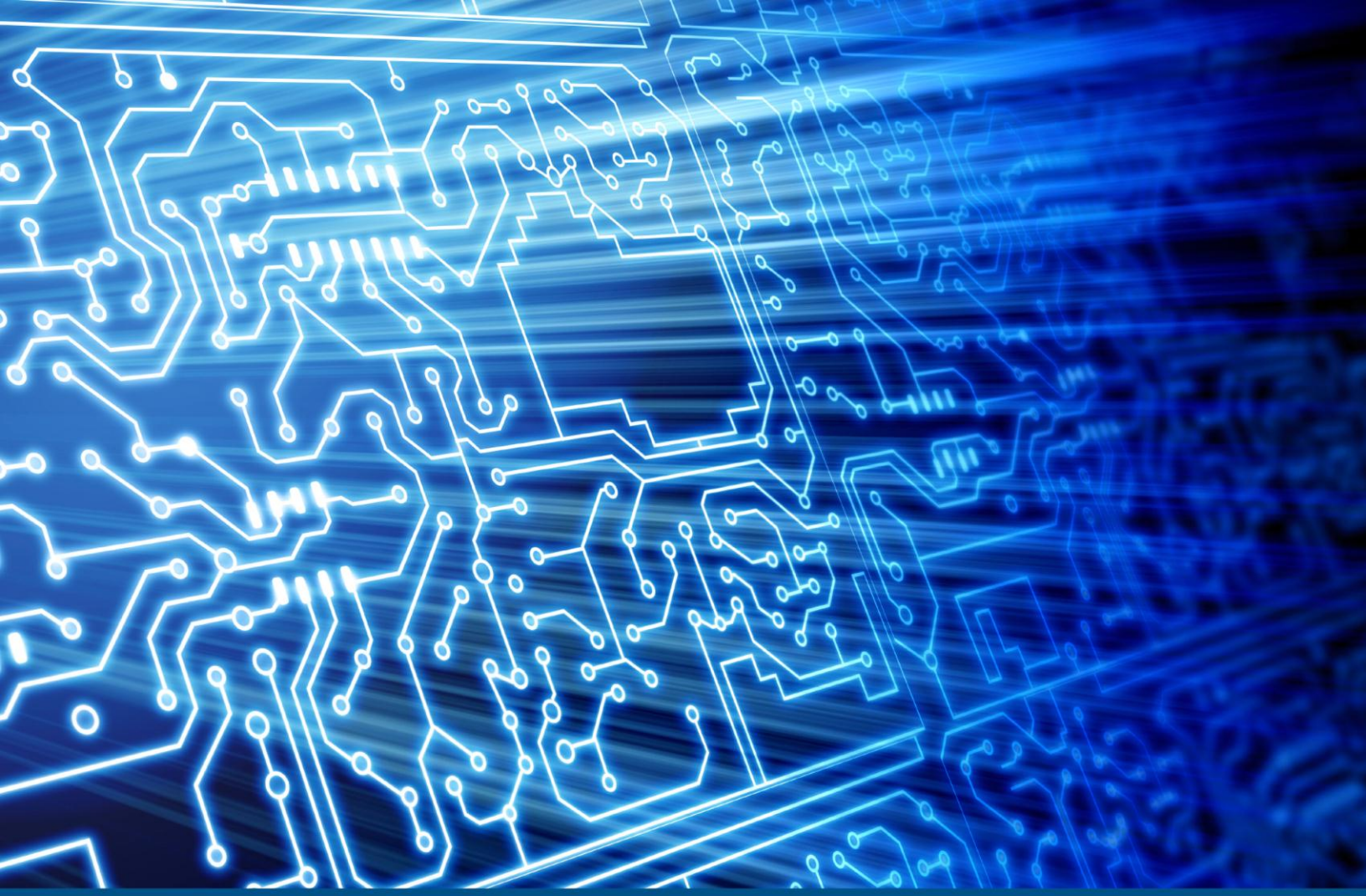

# Paladin 2.06

## 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 2.06

## Contents


Introduction ..... 1
How to Read This Report ..... 1
1 Results Summary ..... 2
2 Test Case Selection ..... 2
3 Results by Test Assertion ..... 3
3.1 Acquisition of Faulty Sectors ..... 6
4 Testing Environment ..... 6
4.1 Execution Environment ..... 6
4.2 Test Computers ..... 6
4.3 Support Software ..... 8
4.4 Test Drive Creation ..... 8
4.4.1 Source Drive ..... 8
4.4.2 Media Drive ..... 8
4.4.3 Destination Drive ..... 8
4.5 Test Drive Analysis ..... 8
4.6 Note on Test Drives ..... 9
5 Test Results ..... 9
5.1 Test Results Report Key ..... 9
5.2 Test Details ..... 10
5.2.1 DA-01-ATA28 ..... 10
5.2.2 DA-01-ATA48 ..... 12
5.2.3 DA-01-FW ..... 14
5.2.4 DA-01-SATA28 ..... 16
5.2.5 DA-01-SATA48 ..... 18
5.2.6 DA-01-SCSI ..... 20
5.2.7 DA-01-USB ..... 22
5.2.8 DA-02-CF ..... 24
5.2.9 DA-02-THUMB ..... 26
5.2.10 DA-04 ..... 28
5.2.11 DA-06-ATA28 ..... 30
5.2.12 DA-06-ATA48 ..... 32
5.2.13 DA-06-FW ..... 34
5.2.14 DA-06-SATA28 ..... 36
5.2.15 DA-06-SATA48 ..... 38
5.2.16 DA-06-SCSI ..... 40
5.2.17 DA-06-USB ..... 42
5.2.18 DA-07-CF ..... 44
5.2.19 DA-07-EXFAT ..... 46
5.2.20 DA-07-EXT2 ..... 48
5.2.21 DA-07-EXT3 ..... 50
5.2.22 DA-07-EXT4 ..... 52
5.2.23 DA-07-F12 ..... 54
5.2.24 DA-07-F16 ..... 56

5.2.25 DA-07-F32 ..... 58
5.2.26 DA-07-F32X ..... 60
5.2.27 DA-07-NTFS ..... 62
5.2.28 DA-07-SWAP ..... 64
5.2.29 DA-07-THUMB ..... 66
5.2.30 DA-09 ..... 68
5.2.31 DA-12 ..... 71
5.2.32 DA-14-ATA28 ..... 73
5.2.33 DA-14-ATA48 ..... 75
5.2.34 DA-14-CF ..... 77
5.2.35 DA-14-FW ..... 79
5.2.36 DA-14-SATA28 ..... 81
5.2.37 DA-14-SATA48 ..... 82
5.2.38 DA-14-SCSI ..... 83
5.2.39 DA-14-THUMB ..... 84
5.2.40 DA-14-USB ..... 85
5.2.41 DA-17 ..... 87
5.2.42 DA-24 ..... 88
5.2.43 DA-25 ..... 90

## 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 2.06 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: | 2.06 |
| Runtime Environment | Paladin 2.06 CD |
| | |
| Supplier: | Sumuri LLC |
| | |
| Address: | P.O. Box 252<br>Wyoming, Delaware 19934 |
| | |
| Tel: | (302) 570-0015 |
| Email: | sales@sumuri.com |
| WWW: | http://sumuri.com/ |

## 1 Results Summary

Paladin 2.06 is a modified Live Linux distribution designed to simplify the process of creating forensic images in a forensically sound manner. Paladin 2.06 is designed to image, clone and restore data from hard drives and other secondary storage. Except for the following anomaly, 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).

Refer to section 3.1 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 2.06 and the linked test cases selected for execution. Table 2 lists the features not available in Paladin 2.06 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 |
| 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 acquisition of a digital source. | 10 | |
| 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 | 19 | |

| Assertions Tested | Tests | Anomaly |
|---|---|---|
| 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. | 12 | |
| 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 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 |

| Assertions not Tested |
|---|
| 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 section provides 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.

## 4 Testing Environment

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

### 4.1 Execution Environment

Tests were run from the Paladin 2.06 CD.

### 4.2 Test Computers

Seven computers were used to run the tool: **Darthmaul**, **Deathstar**, **Frank**, **McGarrett**, **Samspade**, **Scimitar** and **Wofat**.

**Darthmaul**, **DeathStar** 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

**WoFat** and **McGarrett** have 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

**SamSpade** has the following configuration:

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

## 4.3 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 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-04 If clone creation is specified, the tool creates a clone of the digital source.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>AO-11 If requested, a clone is created during an acquisition of a digital source.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process. |
| Tester Name: | jrl |
| Test Host: | DeathStar |
| Test Date: | Tue Aug 14 10:52:26 2012 |
| Drives: | src(41) dst (24-lap) other (none) |
| Source Setup: | src hash (SHA256): < FBF3AA21489653D880FFAE71449A9F7E8EE4F56A6C3BF58A3A3FFB13203F1B1D ><br>src hash (SHA1): < 15CAA1A307271160D8372668BF8A03FC45A51CC9 ><br>src hash (MD5): < 0A6A8EF78BDC14E2026710D8CCB5607C ><br>78125000 total sectors (40000000000 bytes)<br>65534/015/63 (max cyl/hd values)<br>65535/016/63 (number of cyl/hd)<br>IDE disk: Model (WDC WD400BB-75JHC0) serial # (WD-WMAMC4658355)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type |

**Test Case DA-01-ATA28 Sumuri Paladin 2.0.6**

```
 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 ======
78140160 sectors wiped with 24

====== Comparison of original to clone drive ======
Sectors compared: 78125000
Sectors match:    78125000
Sectors differ:          0
Bytes differ:            0
Diffs range
Source (78125000) has 15160 fewer sectors than destination (78140160)
Zero fill:               0
Src Byte fill (41):      0
Dst Byte fill (24):    15160
Other fill:              0
Other no fill:           0
Zero fill range:
Src fill range:
Dst fill range:  78125000-78140159
Other fill range:
Other not filled range:
0 source read errors, 0 destination read errors

OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC
2011 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 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-04 If clone creation is specified, the tool creates a clone of the digital source.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>AO-11 If requested, a clone is created during an acquisition of a digital source.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process. |
| Tester Name: | jrl |
| Test Host: | WoFat |
| Test Date: | Thu Aug 16 12:31:48 2012 |
| Drives: | src(4c) dst (47-sata) other (none) |
| Source Setup: | src hash (SHA1): < 8FF620D2BEDCCAFE8412EDAAD56C8554F872EFBF ><br>src hash (MD5): < D10F763B56D4CEBA2D1311C61F9FB382 ><br>390721968 total sectors (200049647616 bytes)<br>24320/254/63 (max cyl/hd values)<br>24321/255/63 (number of cyl/hd)<br>IDE disk: Model (WDC WD2000JB-00KFA0) serial # (WD-WMAMR1031111)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 390700737 0000/001/01 1023/254/63 Boot 07 NTFS<br>2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 390700737 sectors 200038777344 bytes |
| Log Highlights: | ====== Destination drive setup ======<br>488397168 sectors wiped with 47<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 390721968<br>Sectors match: 390721968<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (390721968) has 97675200 fewer sectors than destination (488397168)<br>Zero fill: 0<br>Src Byte fill (4C): 0<br>Dst Byte fill (47): 97675200<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: 390721968-488397167<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux |

**Test Case DA-01-ATA48 Sumuri Paladin 2.0.6**

```
======== Excerpt from Tool log ========
Source Drive:
       Model Number:       WDC WD2000JB-00KFA0
       Serial Number:      WD-WMAMR1031111
============== Hashes:
Hash values calculated during initial creation:
Total (md5): d10f763b56d4ceba2d1311c61f9fb382
Total (sha1): 8ff620d2bedccafe8412edaad56c8554f872efbf
Hash values for verification started at 20120816 17:48:09:
Total (md5): d10f763b56d4ceba2d1311c61f9fb382
Total (sha1): 8ff620d2bedccafe8412edaad56c8554f872efbf
======== End of Excerpt from Tool log ========

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

Results:

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

Analysis: Expected results achieved

### 5.2.3 DA-01-FW

| **Test Case DA-01-FW Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-04 If clone creation is specified, the tool creates a clone of the digital source.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>AO-11 If requested, a clone is created during an acquisition of a digital source.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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: | SamSpade |
| Test Date: | Thu Aug 16 09:54:49 2012 |
| Drives: | src(63-FU2) dst (84-FU2) other (none) |
| Source Setup: | src hash (SHA256): <<br>EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D ><br>src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B ><br>src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC ><br>117304992 total sectors (60060155904 bytes)<br>Model (SP0612N ) serial # ()<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 004192902 0000/001/01 0260/254/63 Boot 06 Fat16<br>2 X 004192965 113097600 0261/000/01 1023/254/63 0F extended<br>3 S 000000063 113097537 0261/001/01 1023/254/63 0B Fat32<br>4 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>5 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>6 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 004192902 sectors 2146765824 bytes<br>3 113097537 sectors 57905938944 bytes |
| Log Highlights: | ====== Destination drive setup ======<br>160836480 sectors wiped with 84<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 117304992<br>Sectors match: 117304992<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (117304992) has 43531488 fewer sectors than destination (160836480)<br>Zero fill: 0<br>Src Byte fill (63): 0<br>Dst Byte fill (84): 43531488<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: 117304992-160836479<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors |

**Test Case DA-01-FW Sumuri Paladin 2.0.6**

OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux

```
======== 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 ========

====== 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 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-04 If clone creation is specified, the tool creates a clone of the digital source.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>AO-11 If requested, a clone is created during an acquisition of a digital source.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process. |
| Tester Name: | jrl |
| Test Host: | McGarrett |
| Test Date: | Tue Aug 14 10:29:01 2012 |
| Drives: | src(01-sata) dst (32-sata) other (none) |
| Source Setup: | src hash (SHA256): <<br>1AA01FEAE55F5CD55185D2B1A1359B3F913E7093FEF1D1ADA220CAC456BA40D8 ><br>src hash (SHA1): < 4951236428C36B944E62E8D65862DCBEF05F282C ><br>src hash (MD5): < 0A49B13D91FA9DA87CEEE9D006CB6FD6 ><br>156301488 total sectors (80026361856 bytes)<br>Model (0JD-32HKA0 ) serial # (WD-WMAJ91448529) |
| Log Highlights: | ====== Destination drive setup ======<br>156301488 sectors wiped with 32<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 156301488<br>Sectors match: 156301488<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>Source Drive:<br>Model Number: WDC WD800JD-32HKA0<br>Serial Number: WD-WMAJ91448529<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): 0a49b13d91fa9da87ceee9d006cb6fd6<br>Total (sha1): 4951236428c36b944e62e8d65862dcbef05f282c<br>======== End of Excerpt from Tool log ========<br><br>====== Source drive rehash ======<br>Rehash (SHA1) of source: 4951236428C36B944E62E8D65862DCBEF05F282C |
| Results: | |

| **Assertion & Expected Result** | **Actual Result** |
|---|---|
| AM-01 Source acquired using interface AI. | as expected |

| Test Case DA-01-SATA28 Sumuri Paladin 2.0.6 | | |
|---|---|---|
| | 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 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-04 If clone creation is specified, the tool creates a clone of the digital source.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>AO-11 If requested, a clone is created during an acquisition of a digital source.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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 Aug 14 10:37:39 2012 |
| Drives: | src(0d-sata) dst (47-sata) other (none) |
| Source Setup: | src hash (SHA1): < BAAD80E8781E55F2E3EF528CA73BD41D228C1377 ><br>src hash (MD5): < 1FA7C3CBE60EB9E89863DED2411E40C9 ><br>488397168 total sectors (250059350016 bytes)<br>30400/254/63 (max cyl/hd values)<br>30401/255/63 (number of cyl/hd)<br>Model (WDC WD2500JD-22F) serial # (WD-WMAEH2678216)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 488375937 0000/001/01 1023/254/63 Boot 07 NTFS<br>2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 488375937 sectors 250048479744 bytes |
| Log Highlights: | ====== Destination drive setup ======<br>488397168 sectors wiped with 0d<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 488397168<br>Sectors match: 488397168<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>Source Drive:<br>Model Number: WDC WD2500JD-22FYB0<br>Serial Number: WD-WMAEH2678216<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): 1fa7c3cbe60eb9e89863ded2411e40c9<br>Total (sha1): baad80e8781e55f2e3ef528ca73bd41d228c1377<br>======== End of Excerpt from Tool log ========<br><br>====== Source drive rehash ====== |

| **Test Case DA-01-SATA48 Sumuri Paladin 2.0.6** | |
|---|---|
| | 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 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-04 If clone creation is specified, the tool creates a clone of the digital source.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>AO-11 If requested, a clone is created during an acquisition of a digital source.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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 Aug 16 10:32:46 2012 |
| Drives: | src(E0) dst (05-SATA) other (none) |
| Source Setup: | src hash (SHA1): < 4A6941F1337A8A22B10FC844B4D7FA6158BECB82 ><br>src hash (MD5): < A97C8F36B7AC9D5233B90AC09284F938 ><br>17938985 total sectors (9184760320 bytes)<br>Model (ATLAS10K2-TY092J) serial # (169028142436) |
| Log Highlights: | ====== Destination drive setup ======<br>156301488 sectors wiped with 5<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 17938985<br>Sectors match: 17938985<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (17938985) has 138362503 fewer sectors than destination (156301488)<br>Zero fill: 0<br>Src Byte fill (E0): 0<br>Dst Byte fill (05): 138362503<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: 17938985-156301487<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>Source Drive:<br>/dev/sdg: QUANTUM ATLAS10K2-TY092J DDD6<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): a97c8f36b7ac9d5233b90ac09284f938<br>Total (sha1): 4a6941f1337a8a22b10fc844b4d7fa6158becb82<br>======== End of Excerpt from Tool log ======== |

| **Test Case DA-01-SCSI Sumuri Paladin 2.0.6** | |
|---|---|
| | ====== Source drive rehash ======<br>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 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-04 If clone creation is specified, the tool creates a clone of the digital source.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>AO-11 If requested, a clone is created during an acquisition of a digital source.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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 14 10:26:58 2012 |
| Drives: | src(63-FU2) dst (84-FU2) other (none) |
| Source Setup: | src hash (SHA256): <<br>EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D ><br>src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B ><br>src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC ><br>117304992 total sectors (60060155904 bytes)<br>Model (SP0612N ) serial # ()<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 004192902 0000/001/01 0260/254/63 Boot 06 Fat16<br>2 X 004192965 113097600 0261/000/01 1023/254/63 0F extended<br>3 S 000000063 113097537 0261/001/01 1023/254/63 0B Fat32<br>4 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>5 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>6 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 004192902 sectors 2146765824 bytes<br>3 113097537 sectors 57905938944 bytes |
| Log Highlights: | ====== Destination drive setup ======<br>160836480 sectors wiped with 84<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 117304992<br>Sectors match: 117304992<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (117304992) has 43531488 fewer sectors than destination (160836480)<br>Zero fill: 0<br>Src Byte fill (63): 0<br>Dst Byte fill (84): 43531488<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: 117304992-160836479<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors |

**Test Case DA-01-USB Sumuri Paladin 2.0.6**

```
OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC
2011 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
======== 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

### 5.2.8 DA-02-CF

| **Test Case DA-02-CF Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-04 If clone creation is specified, the tool creates a clone of the digital source.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>AO-11 If requested, a clone is created during an acquisition of a digital source.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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 Aug 23 15:31:04 2012 |
| Drives: | src(C1-CF) dst (C2-CF) other (none) |
| Source Setup: | src hash (SHA256): <<br>C7CF0218222DF80D5316511D6814266C7FA507C13F795AD3D323BB73C1590D80 ><br>src hash (SHA1): < 5B8235178DF99FA307430C088F81746606638A0B ><br>src hash (MD5): < 776DF8B4D2589E21DEBCF589EDC16D78 ><br>503808 total sectors (257949696 bytes)<br>Model ( CF) serial # ()<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 778135908 1141509631 0357/116/40 0357/032/45 Boot 72 other<br>2 P 168689522 1936028240 0288/115/43 0367/114/50 Boot 65 other<br>3 P 1869881465 1936028192 0366/032/33 0357/032/43 Boot 79 other<br>4 P 2885681152 000055499 0372/097/50 0000/010/00 Boot 0D other<br>1 1141509631 sectors 584452931072 bytes<br>2 1936028240 sectors 991246458880 bytes<br>3 1936028192 sectors 991246434304 bytes<br>4 000055499 sectors 28415488 bytes |
| Log Highlights: | ====== Destination drive setup ======<br>503808 sectors wiped with C2<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 503808<br>Sectors match: 503808<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>Source Drive:<br>Source C1-CF on Physical device Generic CF 0000001 257MB (/dev/sda)<br>Source C1-CF on Physical device Generic CF 0000001 257MB (/dev/sda)<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Hash values calculated during initial creation: |

<table>
<tr><td colspan="2">Test Case DA-02-CF Sumuri Paladin 2.0.6</td></tr>
<tr><td></td><td>Total (md5): 776df8b4d2589e21debcf589edc16d78<br>Total (sha1): 5b8235178df99fa307430c088f81746606638a0b<br>======== End of Excerpt from Tool log ========<br><br>====== Source drive rehash ======<br>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 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-04 If clone creation is specified, the tool creates a clone of the digital source.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>AO-11 If requested, a clone is created during an acquisition of a digital source.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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 Aug 23 10:29:57 2012 |
| Drives: | src(D5-THUMB) dst (D6-THUMB) other (none) |
| Source Setup: | src hash (SHA1): < D68520EF74A336E49DCCF83815B7B08FDC53E38A ><br>src hash (MD5): < C843593624B2B3B878596D8760B19954 ><br>505856 total sectors (258998272 bytes)<br>Model (usb2.0Flash Disk) serial # () |
| Log Highlights: | ====== Destination drive setup ======<br>4001760 sectors wiped with D6<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 505856<br>Sectors match: 505856<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (505856) has 3495904 fewer sectors than destination (4001760)<br>Zero fill: 0<br>Src Byte fill (D5): 0<br>Dst Byte fill (D6): 3495904<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: 505856-4001759<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>Source Drive:<br>Source Physical device CRUCIAL usb2.0Flash Disk 1040000000000C0D 258MB (/dev/sdf)<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): c843593624b2b3b878596d8760b19954<br>Total (sha1): d68520ef74a336e49dccf83815b7b08fdc53e38a |

**Test Case DA-02-THUMB Sumuri Paladin 2.0.6**

```
======== 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 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-04 If clone creation is specified, the tool creates a clone of the digital source.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>AO-11 If requested, a clone is created during an acquisition of a digital source.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>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.<br>AO-20 If a truncated clone is created, the tool notifies the user.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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: | Mon Aug 20 21:11:41 2012 |
| Drives: | src(41) dst (31-IDE) other (none) |
| Source Setup: | src hash (SHA256): <<br>FBF3AA21489653D880FFAE71449A9F7E8EE4F56A6C3BF58A3A3FFB13203F1B1D ><br>src hash (SHA1): < 15CAA1A307271160D8372668BF8A03FC45A51CC9 ><br>src hash (MD5): < 0A6A8EF78BDC14E2026710D8CCB5607C ><br>78125000 total sectors (40000000000 bytes)<br>65534/015/63 (max cyl/hd values)<br>65535/016/63 (number of cyl/hd)<br>IDE disk: Model (WDC WD400BB-75JHC0) serial # (WD-WMAMC4658355)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 078107967 0000/001/01 1023/254/63 Boot 07 NTFS<br>2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 078107967 sectors 39991279104 bytes |
| Log Highlights: | ====== Destination drive setup ======<br>35673120 sectors wiped with 31<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 35673120<br>Sectors match: 35673120<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (78125000) has 42451880 more sectors than destination (35673120)<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>============== Message from tool<br>dcfldd:: No space left on device<br><br>======== Excerpt from Tool log ========<br>Source Drive:<br>Model Number: WDC WD400BB-75JHC0 |

**Test Case DA-04 Sumuri Paladin 2.0.6**

```
        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 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process. |
| Tester Name: | jrl |
| Test Host: | DeathStar |
| Test Date: | Mon Aug 20 10:58:27 2012 |
| Drives: | src(01-ide-96) dst (none) other (10-fu) |
| Source Setup: | src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 ><br>src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E ><br>78165360 total sectors (40020664320 bytes)<br>Model (0BB-00JHC0 ) serial # ( WD-WMAMC74171)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X<br>2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended<br>3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12<br>4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended<br>5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16<br>6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended<br>7 S 000000063 004192902 1023/001/01 1023/254/63 16 other<br>8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended<br>9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32<br>10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended<br>11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux<br>12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended<br>13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap<br>14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS<br>16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 020980827 sectors 10742183424 bytes<br>3 000032067 sectors 16418304 bytes<br>5 002104452 sectors 1077479424 bytes<br>7 004192902 sectors 2146765824 bytes<br>9 008401932 sectors 4301789184 bytes<br>11 010490382 sectors 5371075584 bytes<br>13 004208967 sectors 2154991104 bytes<br>15 027744192 sectors 14205026304 bytes |
| Log Highlights: | OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 2097152000 2012-08-20 10:15 da-06-ata28.002.dmgpart<br>2 2097152000 2012-08-20 10:16 da-06-ata28.003.dmgpart<br>3 2097152000 2012-08-20 10:16 da-06-ata28.004.dmgpart<br>. . .<br>18 2097152000 2012-08-20 10:28 da-06-ata28.019.dmgpart<br>19 174776320 2012-08-20 10:29 da-06-ata28.020.dmgpart |

**Test Case DA-06-ATA28 Sumuri Paladin 2.0.6**

```
    20  2097152000 2012-08-20 10:14 da-06-ata28.dmg
======== Excerpt from Tool log ========
Source Drive:
       Model Number:       ST340014A
       Serial Number:      5JXAZT1E
============== Hashes:
Hash values calculated during initial creation:
Total (md5): f458f673894753fa6a0ec8b8ec63848e
Total (sha1): a48bb5665d6dc57c22db68e2f723da9aa8df82b9
Hash values for verification started at 20120820 10:29:07:
Total (md5): f458f673894753fa6a0ec8b8ec63848e
Total (sha1): a48bb5665d6dc57c22db68e2f723da9aa8df82b9
======== End of Excerpt from Tool log ========

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

Results:

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

Analysis: Expected results achieved

## 5.2.12 DA-06-ATA48

| **Test Case DA-06-ATA48 Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process. |
| Tester Name: | jrl |
| Test Host: | DeathStar |
| Test Date: | Mon Aug 20 11:23:24 2012 |
| Drives: | src(4c) dst (none) other (10-FU) |
| Source Setup: | src hash (SHA1): < 8FF620D2BEDCCAFE8412EDAAD56C8554F872EFBF ><br>src hash (MD5): < D10F763B56D4CEBA2D1311C61F9FB382 ><br>390721968 total sectors (200049647616 bytes)<br>24320/254/63 (max cyl/hd values)<br>24321/255/63 (number of cyl/hd)<br>IDE disk: Model (WDC WD2000JB-00KFA0) serial # (WD-WMAMR1031111)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 390700737 0000/001/01 1023/254/63 Boot 07 NTFS<br>2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 390700737 sectors 200038777344 bytes |
| Log Highlights: | OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 2097152000 2012-08-20 11:35 da-06-ata48.002.dmgpart<br>2 2097152000 2012-08-20 11:35 da-06-ata48.003.dmgpart<br>3 2097152000 2012-08-20 11:36 da-06-ata48.004.dmgpart<br>. . .<br>94 2097152000 2012-08-20 12:39 da-06-ata48.095.dmgpart<br>95 820207616 2012-08-20 12:39 da-06-ata48.096.dmgpart<br>96 2097152000 2012-08-20 11:34 da-06-ata48.dmg<br>======== Excerpt from Tool log ========<br>Source Drive:<br>Model Number: WDC WD2000JB-00KFA0<br>Serial Number: WD-WMAMR1031111<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): d10f763b56d4ceba2d1311c61f9fb382<br>Total (sha1): 8ff620d2bedccafe8412edaad56c8554f872efbf<br>======== End of Excerpt from Tool log ========<br><br>====== Source drive rehash ======<br>Rehash (SHA1) of source: 8FF620D2BEDCCAFE8412EDAAD56C8554F872EFBF |
| Results: | |

| **Assertion & Expected Result** | **Actual Result** |
|---|---|
| AM-01 Source acquired using interface AI. | as expected |
| AM-02 Source is type DS. | as expected |
| AM-03 Execution environment is XE. | as expected |

| Test Case DA-06-ATA48 Sumuri Paladin 2.0.6 | | |
|---|---|---|
| | 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 2.0.6**

| | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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: | SamSpade |
| Test Date: | Fri Aug 17 15:17:53 2012 |
| Drives: | src(63-FU2) dst (none) other (OC-FU) |
| Source Setup: | src hash (SHA256): <<br>EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D ><br>src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B ><br>src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC ><br>117304992 total sectors (60060155904 bytes)<br>Model (SP0612N ) serial # ()<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 004192902 0000/001/01 0260/254/63 Boot 06 Fat16<br>2 X 004192965 113097600 0261/000/01 1023/254/63 0F extended<br>3 S 000000063 113097537 0261/001/01 1023/254/63 0B Fat32<br>4 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>5 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>6 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 004192902 sectors 2146765824 bytes<br>3 113097537 sectors 57905938944 bytes |
| Log Highlights: | OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 895155499 2012-08-17 16:10 da-06-fw.E01<br>2 875 2012-08-17 16:10 da-06-fw.log.txt<br>======== Excerpt from Tool log ========<br>Source Drive:<br>Source Physical device DMI SAMSUNG SP0612N 60GB (/dev/sdb)<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec<br>MD5 hash calculated over data: ee217bc4fa4f3d1b4021d29b065aa9ec<br>SHA1 hash calculated over data:<br>f7069edcbeac863c88deced82159f22da96be99b<br>======== End of Excerpt from Tool log ========<br><br>====== Source drive rehash ======<br>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 |

| Test Case DA-06-FW Sumuri Paladin 2.0.6 | | |
|---|---|---|
| | 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

<table>
<tr><th colspan="2">Test Case DA-06-SATA28 Sumuri Paladin 2.0.6</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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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>frank</td></tr>
<tr><td>Test Date:</td><td>Fri Aug 17 09:48:43 2012</td></tr>
<tr><td>Drives:</td><td>src(01-SATA) dst (none) other (OC-FU)</td></tr>
<tr><td>Source Setup:</td><td>src hash (SHA256): <<br>1AA01FEAE55F5CD55185D2B1A1359B3F913E7093FEF1D1ADA220CAC456BA40D8 ><br>src hash (SHA1): < 4951236428C36B944E62E8D65862DCBEF05F282C ><br>src hash (MD5): < 0A49B13D91FA9DA87CEEE9D006CB6FD6 ><br>156301488 total sectors (80026361856 bytes)<br>Model (0JD-32HKA0 ) serial # (WD-WMAJ91448529)</td></tr>
<tr><td>Log Highlights:</td><td>====== Tool Settings: ======<br>size 2000 MB<br>format E01<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 1189795474 2012-08-17 11:02 da-06-sata28.E01<br>2 2645 2012-08-17 11:02 da-06-sata28.log.txt<br>======== Excerpt from Tool log ========<br>Source Drive:<br>Model Number: WDC WD800JD-32HKA0<br>Serial Number: WD-WMAJ91448529<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): 0a49b13d91fa9da87ceee9d006cb6fd6<br>MD5 hash calculated over data: 0a49b13d91fa9da87ceee9d006cb6fd6<br>SHA1 hash calculated over data:<br>4951236428c36b944e62e8d65862dcbef05f282c<br>======== End of Excerpt from Tool log ========<br><br>====== Source drive rehash ======<br>Rehash (SHA1) of source: 4951236428C36B944E62E8D65862DCBEF05F282C</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-01 Source acquired using interface AI.</td><td>as expected</td></tr>
<tr><td>AM-02 Source is type DS.</td><td>as expected</td></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AM-05 An image is created on file system type FS.</td><td>as expected</td></tr>
<tr><td>AM-06 All visible sectors acquired.</td><td>as expected</td></tr>
<tr><td>AM-08 All sectors accurately acquired.</td><td>as expected</td></tr>
</table>
</td></tr>
</table>

| Test Case DA-06-SATA28 Sumuri Paladin 2.0.6 | | |
|---|---|---|
| | 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

| **Test Case DA-06-SATA48 Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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 16 20:49:52 2012 |
| Drives: | src(0d-sata) dst (none) other (0F-FU) |
| Source Setup: | src hash (SHA1): < BAAD80E8781E55F2E3EF528CA73BD41D228C1377 ><br>src hash (MD5): < 1FA7C3CBE60EB9E89863DED2411E40C9 ><br>488397168 total sectors (250059350016 bytes)<br>30400/254/63 (max cyl/hd values)<br>30401/255/63 (number of cyl/hd)<br>Model (WDC WD2500JD-22F) serial # (WD-WMAEH2678216)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 488375937 0000/001/01 1023/254/63 Boot 07 NTFS<br>2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 488375937 sectors 250048479744 bytes |
| Log Highlights: | ====== Tool Settings: ======<br>image size: 2GB<br>image format: dd<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 2097152000 2012-08-16 21:38 da-06-sata48.001<br>2 2097152000 2012-08-16 21:39 da-06-sata48.002<br>3 2097152000 2012-08-16 21:40 da-06-sata48.003<br>. . .<br>118 2097152000 2012-08-16 23:33 da-06-sata48.118<br>119 2097152000 2012-08-16 23:34 da-06-sata48.119<br>120 498262016 2012-08-16 23:34 da-06-sata48.120<br>======== Excerpt from Tool log ========<br>Source Drive:<br>Model Number: WDC WD2500JD-22FYB0<br>Serial Number: WD-WMAEH2678216<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): 1fa7c3cbe60eb9e89863ded2411e40c9<br>Total (sha1): baad80e8781e55f2e3ef528ca73bd41d228c1377<br>======== End of Excerpt from Tool log ========<br><br>====== Source drive rehash ======<br>Rehash (SHA1) of source: BAAD80E8781E55F2E3EF528CA73BD41D228C1377 |

| **Test Case DA-06-SATA48 Sumuri Paladin 2.0.6** | |
|---|---|
| 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 |

## 5.2.16 DA-06-SCSI

<table>
<tr><th colspan="2">Test Case DA-06-SCSI Sumuri Paladin 2.0.6</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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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>frank</td></tr>
<tr><td>Test Date:</td><td>Fri Aug 17 14:28:16 2012</td></tr>
<tr><td>Drives:</td><td>src(E0) dst (none) other (OC-FU)</td></tr>
<tr><td>Source Setup:</td><td>src hash (SHA1): < 4A6941F1337A8A22B10FC844B4D7FA6158BECB82 ><br>src hash (MD5): < A97C8F36B7AC9D5233B90AC09284F938 ><br>17938985 total sectors (9184760320 bytes)<br>Model (ATLAS10K2-TY092J) serial # (169028142436)</td></tr>
<tr><td>Log Highlights:</td><td>
<pre>
====== Tool Settings: ======
format dd
size 2000 MB

OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC
2011 i686 i686 i386 GNU/Linux


====== Image file segments ======
     1  2097152000 2012-08-17 14:44 da-06-scsi.001
     2  2097152000 2012-08-17 14:45 da-06-scsi.002
     3  2097152000 2012-08-17 14:47 da-06-scsi.003
     4  2097152000 2012-08-17 14:48 da-06-scsi.004
     5   796152320 2012-08-17 14:49 da-06-scsi.005
     6        1558 2012-08-17 14:49 da-06-scsi.log.txt
======== Excerpt from Tool log ========
Source Drive:
    /dev/sdf: QUANTUM   ATLAS10K2-TY092J  DDD6
============== Hashes:
Hash values calculated during initial creation:
Total (md5): a97c8f36b7ac9d5233b90ac09284f938
Total (sha1): 4a6941f1337a8a22b10fc844b4d7fa6158becb82
======== End of Excerpt from Tool log ========

====== Source drive rehash ======
Rehash (SHA1) of source: 4A6941F1337A8A22B10FC844B4D7FA6158BECB82
</pre>
</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-01 Source acquired using interface AI.</td><td>as expected</td></tr>
<tr><td>AM-02 Source is type DS.</td><td>as expected</td></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AM-05 An image is created on file system type FS.</td><td>as expected</td></tr>
<tr><td>AM-06 All visible sectors acquired.</td><td>as expected</td></tr>
<tr><td>AM-08 All sectors accurately acquired.</td><td>as expected</td></tr>
<tr><td>AO-01 Image file is complete and accurate.</td><td>as expected</td></tr>
<tr><td>AO-05 Multifile image created.</td><td>as expected</td></tr>
</table>
</td></tr>
</table>

| Test Case DA-06-SCSI Sumuri Paladin 2.0.6 | | |
|---|---|---|
| | 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 | |

### 5.2.17 DA-06-USB

| **Test Case DA-06-USB Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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: | SamSpade |
| Test Date: | Fri Aug 17 13:06:55 2012 |
| Drives: | src(63-FU2) dst (none) other (OC-FU) |
| Source Setup: | src hash (SHA256): <<br>EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D ><br>src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B ><br>src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC ><br>117304992 total sectors (60060155904 bytes)<br>Model (SP0612N ) serial # ()<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 004192902 0000/001/01 0260/254/63 Boot 06 Fat16<br>2 X 004192965 113097600 0261/000/01 1023/254/63 0F extended<br>3 S 000000063 113097537 0261/001/01 1023/254/63 0B Fat32<br>4 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>5 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>6 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 004192902 sectors 2146765824 bytes<br>3 113097537 sectors 57905938944 bytes |
| Log Highlights: | ====== Tool Settings: ======<br>format E01<br>size 2000 MB<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 895155499 2012-08-17 13:50 da-06-usb.E01<br>2 890 2012-08-17 13:50 da-06-usb.log.txt<br>======== Excerpt from Tool log ========<br>Source Drive:<br>Source Physical device SAMSUNG SP0612N 215C1FA1CF 60GB (/dev/sdb)<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec<br>MD5 hash calculated over data: ee217bc4fa4f3d1b4021d29b065aa9ec<br>SHA1 hash calculated over data:<br>f7069edcbeac863c88deced82159f22da96be99b<br>======== End of Excerpt from Tool log ========<br><br>====== Source drive rehash ====== |

| **Test Case DA-06-USB Sumuri Paladin 2.0.6** | |
|---|---|
| | 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 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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 24 10:30:18 2012 |
| Drives: | src(C1-CF) dst (none) other (OC-FU) |
| Source Setup: | src hash (SHA256): <<br>C7CF0218222DF80D5316511D6814266C7FA507C13F795AD3D323BB73C1590D80 ><br>src hash (SHA1): < 5B8235178DF99FA307430C088F81746606638A0B ><br>src hash (MD5): < 776DF8B4D2589E21DEBCF589EDC16D78 ><br>503808 total sectors (257949696 bytes)<br>Model ( CF) serial # ()<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 778135908 1141509631 0357/116/40 0357/032/45 Boot 72 other<br>2 P 168689522 1936028240 0288/115/43 0367/114/50 Boot 65 other<br>3 P 1869881465 1936028192 0366/032/33 0357/032/43 Boot 79 other<br>4 P 2885681152 000055499 0372/097/50 0000/010/00 Boot 0D other<br>1 1141509631 sectors 584452931072 bytes<br>2 1936028240 sectors 991246458880 bytes<br>3 1936028192 sectors 991246434304 bytes<br>4 000055499 sectors 28415488 bytes |
| Log Highlights: | ====== Tool Settings: ======<br>format E01<br>size 2000 MB<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 3836232 2012-08-24 10:45 da-07-cf.E01<br>2 993 2012-08-24 10:45 da-07-cf.log.txt<br>======== Excerpt from Tool log ========<br>Source Drive:<br>/dev/sda: LEXAR AT A FLASH V1.0<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): 776df8b4d2589e21debcf589edc16d78<br>MD5 hash calculated over data: 776df8b4d2589e21debcf589edc16d78<br>SHA1 hash calculated over data:<br>5b8235178df99fa307430c088f81746606638a0b<br>======== End of Excerpt from Tool log ========<br><br>====== Source drive rehash ======<br>Rehash (SHA1) of source: 5B8235178DF99FA307430C088F81746606638A0B |

| **Test Case DA-07-CF Sumuri Paladin 2.0.6** | |
|---|---|
| Results: | |

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

| | |
|---|---|
| Analysis: | Expected results achieved |

## 5.2.19 DA-07-EXFAT

| **Test Case DA-07-EXFAT Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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: | Wed Aug 22 02:59:37 2012 |
| Drives: | src(49-SATA) dst (none) other (0F-FU) |
| Source Setup: | src hash (SHA1): < 6EC98F42EB5914D1F9D1661C0BB0A3660569F95B ><br>src hash (MD5): < 30BAB74F67783C0555BCBD73DD4D0D5E ><br>156301488 total sectors (80026361856 bytes)<br>Model (ST380815AS ) serial # ( 5QZ5TD8Y)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000002048 010485760 0000/032/33 0652/213/09 07 NTFS<br>2 P 010490445 005863725 0653/000/01 1017/254/63 83 Linux<br>3 P 016354170 007807590 1018/000/01 1023/254/63 83 Linux<br>4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 010485760 sectors 5368709120 bytes<br>2 005863725 sectors 3002227200 bytes<br>3 007807590 sectors 3997486080 bytes<br>49-SATAEXFAT-sha256 10485760<br>1309F5D1C2BC16E02F9C87A6AC8D79308F636B34DC002081757C4564A1373497<br>49-SATAEXFAT-sha1sum 10485760 3D44F34844E82F9DEDDD5CDC33E18EC066CF1EAB<br>49-SATAEXFAT-md5sum 10485760 E85782BF9358629D0115B70EEDE2C616 |
| Log Highlights: | ====== Tool Settings: ======<br>image size: 2GB<br>image format: dmg<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 2097152000 2012-08-22 03:10 da-07-exFAT.002.dmgpart<br>2 1174405120 2012-08-22 03:11 da-07-exFAT.003.dmgpart<br>3 2097152000 2012-08-22 03:09 da-07-exFAT.dmg<br>4 3279 2012-08-22 03:14 da-07-exFAT.log.txt<br>======== Excerpt from Tool log ========<br>Source Drive:<br>Model Number: ST380815AS<br>Serial Number: 5QZ5TD8Y<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): e85782bf9358629d0115b70eede2c616<br>Total (sha1): 3d44f34844e82f9deddd5cdc33e18ec066cf1eab<br>Hash values for verification started at 20120822 03:11:29:<br>======== End of Excerpt from Tool log ======== |

| **Test Case DA-07-EXFAT Sumuri Paladin 2.0.6** | |
|---|---|
| | ====== Source drive rehash ======<br>Rehash (SHA1) of source: 6EC98F42EB5914D1F9D1661C0BB0A3660569F95B |
| 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 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process. |
| Tester Name: | jrl |
| Test Host: | DeathStar |
| Test Date: | Fri Aug 24 10:33:13 2012 |
| Drives: | src(01-ide-96) dst (none) other (10fu) |
| Source Setup: | src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 ><br>src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E ><br>78165360 total sectors (40020664320 bytes)<br>Model (0BB-00JHC0 ) serial # ( WD-WMAMC74171)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X<br>2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended<br>3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12<br>4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended<br>5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16<br>6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended<br>7 S 000000063 004192902 1023/001/01 1023/254/63 16 other<br>8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended<br>9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32<br>10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended<br>11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux<br>12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended<br>13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap<br>14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS<br>16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 020980827 sectors 10742183424 bytes<br>3 000032067 sectors 16418304 bytes<br>5 002104452 sectors 1077479424 bytes<br>7 004192902 sectors 2146765824 bytes<br>9 008401932 sectors 4301789184 bytes<br>11 010490382 sectors 5371075584 bytes<br>13 004208967 sectors 2154991104 bytes<br>15 027744192 sectors 14205026304 bytes<br>01EXT2-md5 5371075583 3BE2499E47EE59076A0B11FFC5A6E382<br>01EXT2-sha1 5371075583 4E0A134245803EF9F4669493F1C357D59F4A74FE<br>01ext2-md5 5371075583 3BE2499E47EE59076A0B11FFC5A6E382<br>01ext2-sha1 5371075583 4E0A134245803EF9F4669493F1C357D59F4A74FE |
| Log Highlights: | OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 2097152000 2012-08-24 09:32 da-07-ext2.002.dmgpart<br>2 1176771584 2012-08-24 09:33 da-07-ext2.003.dmgpart |

**Test Case DA-07-EXT2 Sumuri Paladin 2.0.6**

```
     3  2097152000 2012-08-24 09:31 da-07-ext2.dmg
     4        1297 2012-08-24 09:33 da-07-ext2.log.txt
======== Excerpt from Tool log ========
============== Hashes:
Hash values calculated during initial creation:
Total (md5): 3be2499e47ee59076a0b11ffc5a6e382
Total (sha1): 4e0a134245803ef9f4669493f1c357d59f4a74fe
======== 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. | 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. | not checked |

Analysis: Expected results achieved

### 5.2.21 DA-07-EXT3

| **Test Case DA-07-EXT3 Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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 21 21:23:47 2012 |
| Drives: | src(49-sata) dst (none) other (0F-FU) |
| Source Setup: | src hash (SHA1): < 6EC98F42EB5914D1F9D1661C0BB0A3660569F95B ><br>src hash (MD5): < 30BAB74F67783C0555BCBD73DD4D0D5E ><br>156301488 total sectors (80026361856 bytes)<br>Model (ST380815AS ) serial # ( 5QZ5TD8Y)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000002048 010485760 0000/032/33 0652/213/09 07 NTFS<br>2 P 010490445 005863725 0653/000/01 1017/254/63 83 Linux<br>3 P 016354170 007807590 1018/000/01 1023/254/63 83 Linux<br>4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 010485760 sectors 5368709120 bytes<br>2 005863725 sectors 3002227200 bytes<br>3 007807590 sectors 3997486080 bytes<br>49-SATAEXT3-md5sum 5863725 A25176AE775F65181DAC8C8D051DDF5D<br>49-SATAEXT3-sha1sum 5863725 FDF0F2BA2D4CB2D45E45717213AE218880236418 |
| Log Highlights: | ====== Tool Settings: ======<br>imgae size: 3GB<br>image format: E01<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 43689377 2012-08-21 21:42 da-07-ext3.E01<br>2 3260 2012-08-21 21:43 da-07-ext3.log.txt<br>======== Excerpt from Tool log ========<br>Source Drive:<br>Model Number: ST380815AS<br>Serial Number: 5QZ5TD8Y<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): a25176ae775f65181dac8c8d051ddf5d<br>MD5 hash calculated over data: a25176ae775f65181dac8c8d051ddf5d<br>SHA1 hash calculated over data:<br>fdf0f2ba2d4cb2d45e45717213ae218880236418<br>Hash values for verification started at 20120821 21:42:49:<br>MD5 hash stored in file: a25176ae775f65181dac8c8d051ddf5d<br>MD5 hash calculated over data: a25176ae775f65181dac8c8d051ddf5d<br>SHA1 hash stored in file: fdf0f2ba2d4cb2d45e45717213ae218880236418<br>SHA1 hash calculated over data:<br>fdf0f2ba2d4cb2d45e45717213ae218880236418 |

**Test Case DA-07-EXT3 Sumuri Paladin 2.0.6**

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

====== Source drive rehash ======
Rehash (SHA1) of source: 6EC98F42EB5914D1F9D1661C0BB0A3660569F95B
```

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

## 5.2.22 DA-07-EXT4

| **Test Case DA-07-EXT4 Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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: | Wed Aug 22 01:40:04 2012 |
| Drives: | src(49-sata) dst (none) other (0F-FU) |
| Source Setup: | src hash (SHA1): < 6EC98F42EB5914D1F9D1661C0BB0A3660569F95B ><br>src hash (MD5): < 30BAB74F67783C0555BCBD73DD4D0D5E ><br>156301488 total sectors (80026361856 bytes)<br>Model (ST380815AS ) serial # ( 5QZ5TD8Y)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000002048 010485760 0000/032/33 0652/213/09 07 NTFS<br>2 P 010490445 005863725 0653/000/01 1017/254/63 83 Linux<br>3 P 016354170 007807590 1018/000/01 1023/254/63 83 Linux<br>4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 010485760 sectors 5368709120 bytes<br>2 005863725 sectors 3002227200 bytes<br>3 007807590 sectors 3997486080 bytes<br>49-SATAEXT4-md5sum 7807590 567F2826AB468D69F97CB0D1878BE25D<br>49-SATAEXT4-sha1sum 7807590 F28A79F5E5CD28F859A1AC6B18A2CA3682D15A2A |
| Log Highlights: | ====== Tool Settings: ======<br>image size: 2GB<br>image format: dd<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 2097152000 2012-08-22 02:01 da-07-ext4.001<br>2 1900334080 2012-08-22 02:02 da-07-ext4.002<br>3 3149 2012-08-22 02:04 da-07-ext4.log.txt<br>======== Excerpt from Tool log ========<br>Source Drive:<br>Model Number: ST380815AS<br>Serial Number: 5QZ5TD8Y<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): 567f2826ab468d69f97cb0d1878be25d<br>Total (sha1): f28a79f5e5cd28f859a1ac6b18a2ca3682d15a2a<br>Hash values for verification started at 20120822 02:02:04:<br>Total (md5): 567f2826ab468d69f97cb0d1878be25d<br>Total (sha1): f28a79f5e5cd28f859a1ac6b18a2ca3682d15a2a<br>======== End of Excerpt from Tool log ========<br><br>====== Source drive rehash ======<br>Rehash (SHA1) of source: 6EC98F42EB5914D1F9D1661C0BB0A3660569F95B |

| **Test Case DA-07-EXT4 Sumuri Paladin 2.0.6** | |
|---|---|
| | |
| 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 |

### 5.2.23 DA-07-F12

| **Test Case DA-07-F12 Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process. |
| Tester Name: | jrl |
| Test Host: | DeathStar |
| Test Date: | Fri Aug 24 10:33:33 2012 |
| Drives: | src(01-ide-96) dst (none) other (10fu) |
| Source Setup: | src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 ><br>src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E ><br>78165360 total sectors (40020664320 bytes)<br>Model (0BB-00JHC0 ) serial # ( WD-WMAMC74171)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X<br>2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended<br>3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12<br>4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended<br>5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16<br>6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended<br>7 S 000000063 004192902 1023/001/01 1023/254/63 16 other<br>8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended<br>9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32<br>10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended<br>11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux<br>12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended<br>13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap<br>14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS<br>16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 020980827 sectors 10742183424 bytes<br>3 000032067 sectors 16418304 bytes<br>5 002104452 sectors 1077479424 bytes<br>7 004192902 sectors 2146765824 bytes<br>9 008401932 sectors 4301789184 bytes<br>11 010490382 sectors 5371075584 bytes<br>13 004208967 sectors 2154991104 bytes<br>15 027744192 sectors 14205026304 bytes<br>01F12-md5 16418303 E20E3CFEA80BF6F2D2AA75E829CC8CD9<br>01F12-sha1 16418303 F8B72B65436DE3BD394ACFF71D405D0389C0E9B7 |
| Log Highlights: | OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 249377 2012-08-24 08:46 da-07-f12.E01<br>2 1110 2012-08-24 08:46 da-07-f12.log.txt<br>======== Excerpt from Tool log ========<br>============== Hashes: |

**Test Case DA-07-F12 Sumuri Paladin 2.0.6**

```
Hash values calculated during initial creation:
Total (md5): e20e3cfea80bf6f2d2aa75e829cc8cd9
MD5 hash calculated over data:       e20e3cfea80bf6f2d2aa75e829cc8cd9
SHA1 hash calculated over data:
       f8b72b65436de3bd394acff71d405d0389c0e9b7
======== 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. | 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. | not checked |

Analysis: Expected results achieved

### 5.2.24 DA-07-F16

| **Test Case DA-07-F16 Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process. |
| Tester Name: | jrl |
| Test Host: | DeathStar |
| Test Date: | Fri Aug 24 10:33:46 2012 |
| Drives: | src(01-ide-96) dst (none) other (10fu) |
| Source Setup: | src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 ><br>src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E ><br>78165360 total sectors (40020664320 bytes)<br>Model (0BB-00JHC0 ) serial # ( WD-WMAMC74171)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X<br>2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended<br>3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12<br>4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended<br>5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16<br>6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended<br>7 S 000000063 004192902 1023/001/01 1023/254/63 16 other<br>8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended<br>9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32<br>10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended<br>11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux<br>12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended<br>13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap<br>14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS<br>16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 020980827 sectors 10742183424 bytes<br>3 000032067 sectors 16418304 bytes<br>5 002104452 sectors 1077479424 bytes<br>7 004192902 sectors 2146765824 bytes<br>9 008401932 sectors 4301789184 bytes<br>11 010490382 sectors 5371075584 bytes<br>13 004208967 sectors 2154991104 bytes<br>15 027744192 sectors 14205026304 bytes<br>01F16-md5 1077479423 8B24F3D793188AF2473F69B267AFDA42<br>01F16-sha1 1077479423 074BA831B10132F4BF9F86AFAB37CB7FEF482C7D |
| Log Highlights: | OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 1077479424 2012-08-24 09:05 da-07-f16.dmg<br>2 1041 2012-08-24 09:05 da-07-f16.log.txt<br>======== Excerpt from Tool log ========<br>============== Hashes: |

| **Test Case DA-07-F16 Sumuri Paladin 2.0.6** | |
|---|---|
| | Hash values calculated during initial creation:<br>Total (md5): 8b24f3d793188af2473f69b267afda42<br>Total (sha1): 074ba831b10132f4bf9f86afab37cb7fef482c7d<br>======== 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. | 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. | not checked |

| | |
|---|---|
| Analysis: | Expected results achieved |

### 5.2.25 DA-07-F32

| **Test Case DA-07-F32 Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process. |
| Tester Name: | jrl |
| Test Host: | DeathStar |
| Test Date: | Fri Aug 24 10:34:07 2012 |
| Drives: | src(01-ide-96) dst (none) other (10fu) |
| Source Setup: | src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 ><br>src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E ><br>78165360 total sectors (40020664320 bytes)<br>Model (0BB-00JHC0 ) serial # ( WD-WMAMC74171)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X<br>2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended<br>3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12<br>4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended<br>5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16<br>6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended<br>7 S 000000063 004192902 1023/001/01 1023/254/63 16 other<br>8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended<br>9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32<br>10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended<br>11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux<br>12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended<br>13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap<br>14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS<br>16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 020980827 sectors 10742183424 bytes<br>3 000032067 sectors 16418304 bytes<br>5 002104452 sectors 1077479424 bytes<br>7 004192902 sectors 2146765824 bytes<br>9 008401932 sectors 4301789184 bytes<br>11 010490382 sectors 5371075584 bytes<br>13 004208967 sectors 2154991104 bytes<br>15 027744192 sectors 14205026304 bytes<br>01F32-md5 4301789183 BFF7DC64C54339DA2A9D7972C076B514<br>01F32-sha1 4301789183 B861D9E999F39750B484FFB693FF69DEC090C6B8<br>01F32-sha256 4301789183<br>CAE3A4CC33D59548063255D2AA4016940AC712DD96985AD9B94FF271CC3E943E |
| Log Highlights: | OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 2097152000 2012-08-24 09:20 da-07-f32.001 |

**Test Case DA-07-F32 Sumuri Paladin 2.0.6**

```
     2  2097152000 2012-08-24 09:21 da-07-f32.002
     3   107485184 2012-08-24 09:21 da-07-f32.003
     4        1291 2012-08-24 09:21 da-07-f32.log.txt
======== Excerpt from Tool log ========
============== Hashes:
Hash values calculated during initial creation:
Total (md5): bff7dc64c54339da2a9d7972c076b514
Total (sha1): b861d9e999f39750b484ffb693ff69dec090c6b8
======== 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. | 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. | not checked |

Analysis: Expected results achieved

## 5.2.26 DA-07-F32X

| **Test Case DA-07-F32X Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process. |
| Tester Name: | jrl |
| Test Host: | DeathStar |
| Test Date: | Fri Aug 24 10:34:18 2012 |
| Drives: | src(01-ide-96) dst (none) other (10fu) |
| Source Setup: | src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 ><br>src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E ><br>78165360 total sectors (40020664320 bytes)<br>Model (0BB-00JHC0 ) serial # ( WD-WMAMC74171)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X<br>2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended<br>3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12<br>4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended<br>5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16<br>6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended<br>7 S 000000063 004192902 1023/001/01 1023/254/63 16 other<br>8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended<br>9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32<br>10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended<br>11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux<br>12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended<br>13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap<br>14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS<br>16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 020980827 sectors 10742183424 bytes<br>3 000032067 sectors 16418304 bytes<br>5 002104452 sectors 1077479424 bytes<br>7 004192902 sectors 2146765824 bytes<br>9 008401932 sectors 4301789184 bytes<br>11 010490382 sectors 5371075584 bytes<br>13 004208967 sectors 2154991104 bytes<br>15 027744192 sectors 14205026304 bytes<br>01F32X-md5 10742183423 B5BFD9CE3990C577EF89C5AFB925F947<br>01F32X-sha1 10742183423 30BA6CF583A176C5DB533E3A2F57BFD5A4A870C1 |
| Log Highlights: | OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 160169772 2012-08-24 09:28 da-07-f32x.E01<br>2 1125 2012-08-24 09:28 da-07-f32x.log.txt<br>======== Excerpt from Tool log ========<br>============== Hashes: |

**Test Case DA-07-F32X Sumuri Paladin 2.0.6**

```
Hash values calculated during initial creation:
Total (md5): b5bfd9ce3990c577ef89c5afb925f947
MD5 hash calculated over data:       b5bfd9ce3990c577ef89c5afb925f947
SHA1 hash calculated over data:
       30ba6cf583a176c5db533e3a2f57bfd5a4a870c1
======== 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. | 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. | not checked |

Analysis: Expected results achieved

### 5.2.27 DA-07-NTFS

| **Test Case DA-07-NTFS Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process. |
| Tester Name: | jrl |
| Test Host: | DeathStar |
| Test Date: | Fri Aug 24 10:34:39 2012 |
| Drives: | src(01-ide-96) dst (none) other (10fu) |
| Source Setup: | src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 ><br>src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E ><br>78165360 total sectors (40020664320 bytes)<br>Model (0BB-00JHC0 ) serial # ( WD-WMAMC74171)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X<br>2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended<br>3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12<br>4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended<br>5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16<br>6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended<br>7 S 000000063 004192902 1023/001/01 1023/254/63 16 other<br>8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended<br>9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32<br>10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended<br>11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux<br>12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended<br>13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap<br>14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS<br>16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 020980827 sectors 10742183424 bytes<br>3 000032067 sectors 16418304 bytes<br>5 002104452 sectors 1077479424 bytes<br>7 004192902 sectors 2146765824 bytes<br>9 008401932 sectors 4301789184 bytes<br>11 010490382 sectors 5371075584 bytes<br>13 004208967 sectors 2154991104 bytes<br>15 027744192 sectors 14205026304 bytes<br>01NTFS-md5 14205026303 92B27B30BEE8B0FFBA8C660FA1590D49<br>01NTFS-sha1 14205026303 0FBA4C36295CB9622CD815577429C3A588C34D09<br>01NTFS-sha256 14205026303<br>65FCD168163625E5EB74255B2A981B6F1C9D6259AF8A0851369101986A7ABC09 |
| Log Highlights: | OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 2097152000 2012-08-24 09:38 da-07-ntfs.001 |

**Test Case DA-07-NTFS Sumuri Paladin 2.0.6**

```
      2  2097152000 2012-08-24 09:38 da-07-ntfs.002
      3  2097152000 2012-08-24 09:39 da-07-ntfs.003
    . . .
      5  2097152000 2012-08-24 09:41 da-07-ntfs.005
      6  2097152000 2012-08-24 09:42 da-07-ntfs.006
      7  1622114304 2012-08-24 09:43 da-07-ntfs.007
======== Excerpt from Tool log ========
============== Hashes:
Hash values calculated during initial creation:
Total (md5): 92b27b30bee8b0ffba8c660fa1590d49
Total (sha1): 0fba4c36295cb9622cd815577429c3a588c34d09
======== 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. | 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. | not checked |

Analysis: Expected results achieved

## 5.2.28 DA-07-SWAP

| **Test Case DA-07-SWAP Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process. |
| Tester Name: | jrl |
| Test Host: | DeathStar |
| Test Date: | Fri Aug 24 10:34:56 2012 |
| Drives: | src(01-ide-96) dst (none) other (10fu) |
| Source Setup: | src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 ><br>src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E ><br>78165360 total sectors (40020664320 bytes)<br>Model (0BB-00JHC0 ) serial # ( WD-WMAMC74171)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X<br>2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended<br>3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12<br>4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended<br>5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16<br>6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended<br>7 S 000000063 004192902 1023/001/01 1023/254/63 16 other<br>8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended<br>9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32<br>10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended<br>11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux<br>12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended<br>13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap<br>14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS<br>16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 020980827 sectors 10742183424 bytes<br>3 000032067 sectors 16418304 bytes<br>5 002104452 sectors 1077479424 bytes<br>7 004192902 sectors 2146765824 bytes<br>9 008401932 sectors 4301789184 bytes<br>11 010490382 sectors 5371075584 bytes<br>13 004208967 sectors 2154991104 bytes<br>15 027744192 sectors 14205026304 bytes<br>01SWAP-md5 2154991103 275AC7873F9B4A8FBF271FE882BFF378<br>01SWAP-sha1 2154991103 DFC370186AC5762481D5CBC83FA45D638F7DF183 |
| Log Highlights: | OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 32138127 2012-08-24 09:59 da-07-swap.E01<br>2 1125 2012-08-24 09:59 da-07-swap.log.txt<br>======== Excerpt from Tool log ========<br>============== Hashes: |

<table>
<tr><td colspan="2">Test Case DA-07-SWAP Sumuri Paladin 2.0.6</td></tr>
<tr><td></td><td>Hash values calculated during initial creation:<br>Total (md5): 275ac7873f9b4a8fbf271fe882bff378<br>MD5 hash calculated over data: 275ac7873f9b4a8fbf271fe882bff378<br>SHA1 hash calculated over data:<br>dfc370186ac5762481d5cbc83fa45d638f7df183<br>======== 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-01 Source acquired using interface AI.</td><td>as expected</td></tr>
<tr><td>AM-02 Source is type DS.</td><td>as expected</td></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AM-05 An image is created on file system type FS.</td><td>as expected</td></tr>
<tr><td>AM-06 All visible sectors acquired.</td><td>as expected</td></tr>
<tr><td>AM-08 All sectors accurately acquired.</td><td>as expected</td></tr>
<tr><td>AO-01 Image file is complete and accurate.</td><td>as expected</td></tr>
<tr><td>AO-05 Multifile image created.</td><td>as expected</td></tr>
<tr><td>AO-22 Tool calculates hashes by block.</td><td>option not available</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
<tr><td>AO-24 Source is unchanged by acquisition.</td><td>not checked</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

## 5.2.29 DA-07-THUMB

<table>
<tr><th colspan="2">Test Case DA-07-THUMB Sumuri Paladin 2.0.6</th></tr>
<tr><td>Case Summary:</td><td>DA-07 Acquire a digital source of type DS to an image file.</td></tr>
<tr><td>Assertions:</td><td>AM-01 The tool uses access interface SRC-AI to access the digital source.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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>frank</td></tr>
<tr><td>Test Date:</td><td>Wed Aug 22 10:20:36 2012</td></tr>
<tr><td>Drives:</td><td>src(D5-THUMB) dst (none) other (OC-FU)</td></tr>
<tr><td>Source Setup:</td><td>src hash (SHA1): < D68520EF74A336E49DCCF83815B7B08FDC53E38A ><br>src hash (MD5): < C843593624B2B3B878596D8760B19954 ><br>505856 total sectors (258998272 bytes)<br>Model (usb2.0Flash Disk) serial # ()</td></tr>
<tr><td>Log Highlights:</td><td>====== Tool Settings: ======<br>format dd<br>size 2000 MB<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 258998272 2012-08-22 10:33 da-06-thumb.001<br>2 836 2012-08-22 10:33 da-06-thumb.log.txt<br>======== Excerpt from Tool log ========<br>Source Drive:<br>Source Physical device CRUCIAL usb2.0Flash Disk 1040000000000C0D 258MB (/dev/sdi)<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): c843593624b2b3b878596d8760b19954<br>Total (sha1): d68520ef74a336e49dccf83815b7b08fdc53e38a<br>======== End of Excerpt from Tool log ========<br><br>====== Source drive rehash ======<br>Rehash (SHA1) of source: D68520EF74A336E49DCCF83815B7B08FDC53E38A</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-01 Source acquired using interface AI.</td><td>as expected</td></tr>
<tr><td>AM-02 Source is type DS.</td><td>as expected</td></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AM-05 An image is created on file system type FS.</td><td>as expected</td></tr>
<tr><td>AM-06 All visible sectors acquired.</td><td>as expected</td></tr>
<tr><td>AM-08 All sectors accurately acquired.</td><td>as expected</td></tr>
<tr><td>AO-01 Image file is complete and accurate.</td><td>as expected</td></tr>
<tr><td>AO-05 Multifile image created.</td><td>as expected</td></tr>
<tr><td>AO-22 Tool calculates hashes by block.</td><td>option not available</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
<tr><td>AO-24 Source is unchanged by acquisition.</td><td>as expected</td></tr>
</table>
</td></tr>
</table>

| Test Case DA-07-THUMB Sumuri Paladin 2.0.6 | |
|---|---|
| | |
| Analysis: | Expected results achieved |

### 5.2.30 DA-09

| **Test Case DA-09 Sumuri Paladin 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>AM-06 All visible sectors are acquired from the digital source.<br>AM-08 All sectors acquired from the digital source are acquired accurately.<br>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.<br>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.<br>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.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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: | Thu Aug 23 13:17:56 2012 |
| Drives: | src(ed-bad-cpr4) dst (7c-sata) other (none) |
| Source Setup: | No before hash for ED-BAD-CPR4<br><br>Known Bad Sector List for ED-BAD-CPR4<br><br>Manufacturer: Maxtor<br>Model: DiamondMax Plus 9<br>Serial Number: Y23EGSJE<br>Capacity: 60GB<br>Interface: SATA<br><br>35 faulty sectors<br><br>6160328, 6160362, 10041157, 10041995, 10118634, 10209448, 11256569,<br>14115689, 14778391, 14778392, 14778449, 14778479, 14778517, 14778518,<br>14778519, 14778520, 14778521, 14778551, 14778607, 14778626, 14778627,<br>14778650, 14778668, 14778669, 14778709, 14778727, 14778747, 14778772,<br>14778781, 14778870, 14778949, 14778953, 14779038, 14779113, 14779321 |
| Log Highlights: | ====== Destination drive setup ======<br>156250000 sectors wiped with 7C<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 120103200<br>Sectors match: 6160328<br>Sectors differ: 113942872<br>Bytes differ: 735660040<br>Diffs range 6160328-120103199<br>Source (120103200) has 36146800 fewer sectors than destination (156250000)<br>Zero fill: 24<br>Src Byte fill (ED): 520<br>Dst Byte fill (7C): 36146256<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range: 120103720-120103743<br>Src fill range: 120103200-120103719<br>Dst fill range: 120103744-156249999 |

| Test Case DA-09 Sumuri Paladin 2.0.6 | |
|---|---|
| | Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>dcfldd:/dev/sda: Input/output error<br>96255+1 records in<br>96256+0 records out<br>dcfldd:/dev/sda: Input/output error<br>156891+3 records in<br>156894+0 records out<br>dcfldd:/dev/sda: Input/output error<br>156903+5 records in<br>156908+0 records out<br>dcfldd:/dev/sda: Input/output error<br>158099+7 records in<br>158106+0 records out<br>dcfldd:/dev/sda: Input/output error<br>159517+8 records in<br>159525+0 records out<br>dcfldd:/dev/sda: Input/output error<br>175877+10 records in<br>175887+0 records out<br>dcfldd:/dev/sda: Input/output error<br>220549+12 records in<br>220561+0 records out<br>dcfldd:/dev/sda: Input/output error<br>230902+14 records in<br>230916+0 records out<br>dcfldd:/dev/sda: Input/output error<br>230902+15 records in<br>230917+0 records out<br>dcfldd:/dev/sda: Input/output error<br>230902+16 records in<br>230918+0 records out<br>dcfldd:/dev/sda: Input/output error<br>230902+18 records in<br>230920+0 records out<br>dcfldd:/dev/sda: Input/output error<br>230902+19 records in<br>230921+0 records out<br>dcfldd:/dev/sda: Input/output error<br>230902+21 records in<br>230923+0 records out<br>dcfldd:/dev/sda: Input/output error<br>230902+23 records in<br>230925+0 records out<br>dcfldd:/dev/sda: Input/output error<br>230902+25 records in<br>230927+0 records out<br>dcfldd:/dev/sda: Input/output error<br>230902+27 records in<br>230929+0 records out<br>dcfldd:/dev/sda: Input/output error<br>230902+29 records in<br>230931+0 records out<br>dcfldd:/dev/sda: Input/output error<br>230904+31 records in<br>230935+0 records out<br>1876588+33 records in<br>1876621+0 records out<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): 578d7769b79d58968435b062cfd79d3a<br>Total (sha1): 613d86cf602ad592d4e839e174e2dcef83fa6ba4<br>======== End of Excerpt from Tool log ======== |

**Test Case DA-09 Sumuri Paladin 2.0.6**

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 2.0.6** | |
|---|---|
| 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.<br>AM-02 The tool acquires digital source DS.<br>AM-03 The tool executes in execution environment XE.<br>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.<br>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: | Thu Aug 23 02:53:19 2012 |
| Drives: | src(41) dst (66) other (none) |
| Source Setup: | src hash (SHA256): <<br>FBF3AA21489653D880FFAE71449A9F7E8EE4F56A6C3BF58A3A3FFB13203F1B1D ><br>src hash (SHA1): < 15CAA1A307271160D8372668BF8A03FC45A51CC9 ><br>src hash (MD5): < 0A6A8EF78BDC14E2026710D8CCB5607C ><br>78125000 total sectors (40000000000 bytes)<br>65534/015/63 (max cyl/hd values)<br>65535/016/63 (number of cyl/hd)<br>IDE disk: Model (WDC WD400BB-75JHC0) serial # (WD-WMAMC4658355)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 078107967 0000/001/01 1023/254/63 Boot 07 NTFS<br>2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 078107967 sectors 39991279104 bytes |
| Log Highlights: | ====== Tool Settings: ======<br>image size: 2GB<br>image format: dd<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>====== Image file segments ======<br>1 2097152000 2012-08-23 03:07 da-12.001<br>2 2097152000 2012-08-23 03:09 da-12.002<br>3 2097152000 2012-08-23 03:10 da-12.003<br>4 2097152000 2012-08-23 03:11 da-12.004<br>5 1800699904 2012-08-23 03:13 da-12.005<br>6 2986 2012-08-23 03:13 da-12.log.txt<br><br>============== Message from tool<br>dcfldd:: No space left on device<br><br>======== Excerpt from Tool log ========<br>Source Drive:<br>Model Number: WDC WD400BB-75JHC0<br>Serial Number: WD-WMAMC4658355<br>============== Hashes:<br>Hash values calculated during initial creation:<br>======== 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 |

| **Test Case DA-12 Sumuri Paladin 2.0.6** | | |
|---|---|---|
| | 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. | not checked |
| Analysis: | Expected results achieved | |

## 5.2.32 DA-14-ATA28

| **Test Case DA-14-ATA28 Sumuri Paladin 2.0.6** | |
|---|---|
| Case Summary: | DA-14 Create an unaligned clone from an image file. |
| Assertions: | AM-03 The tool executes in execution environment XE.<br>AO-12 If requested, a clone is created from an image file.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. |
| Tester Name: | jrl |
| Test Host: | DarthMaul |
| Test Date: | Tue Aug 28 14:02:48 2012 |
| Drives: | src(01-ide-96) dst (50-sata) other (0E-FU) |
| Source Setup: | src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 ><br>src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E ><br>78165360 total sectors (40020664320 bytes)<br>Model (0BB-00JHC0 ) serial # ( WD-WMAMC74171)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X<br>2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended<br>3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12<br>4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended<br>5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16<br>6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended<br>7 S 000000063 004192902 1023/001/01 1023/254/63 16 other<br>8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended<br>9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32<br>10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended<br>11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux<br>12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended<br>13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap<br>14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS<br>16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 020980827 sectors 10742183424 bytes<br>3 000032067 sectors 16418304 bytes<br>5 002104452 sectors 1077479424 bytes<br>7 004192902 sectors 2146765824 bytes<br>9 008401932 sectors 4301789184 bytes<br>11 010490382 sectors 5371075584 bytes<br>13 004208967 sectors 2154991104 bytes<br>15 027744192 sectors 14205026304 bytes |
| Log Highlights: | ====== Destination drive setup ======<br>156301488 sectors wiped with 50<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 78165360<br>Sectors match: 78165360<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (78165360) has 78136128 fewer sectors than destination (156301488)<br>Zero fill: 0<br>Src Byte fill (01): 0<br>Dst Byte fill (50): 78136128<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range: |

<table>
<tr><th colspan="2">Test Case DA-14-ATA28 Sumuri Paladin 2.0.6</th></tr>
<tr><td></td><td>Dst fill range:  78165360-156301487<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): f458f673894753fa6a0ec8b8ec63848e<br>Total (sha1): a48bb5665d6dc57c22db68e2f723da9aa8df82b9<br>======== 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

| **Test Case DA-14-ATA48 Sumuri Paladin 2.0.6** | |
|---|---|
| Case Summary: | DA-14 Create an unaligned clone from an image file. |
| Assertions: | AM-03 The tool executes in execution environment XE.<br>AO-12 If requested, a clone is created from an image file.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. |
| Tester Name: | jrl |
| Test Host: | DeathStar |
| Test Date: | Tue Aug 28 15:29:10 2012 |
| Drives: | src(4c) dst (47-sata) other (10-fu) |
| Source Setup: | src hash (SHA1): < 8FF620D2BEDCCAFE8412EDAAD56C8554F872EFBF ><br>src hash (MD5): < D10F763B56D4CEBA2D1311C61F9FB382 ><br>390721968 total sectors (200049647616 bytes)<br>24320/254/63 (max cyl/hd values)<br>24321/255/63 (number of cyl/hd)<br>IDE disk: Model (WDC WD2000JB-00KFA0) serial # (WD-WMAMR1031111)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 390700737 0000/001/01 1023/254/63 Boot 07 NTFS<br>2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 390700737 sectors 200038777344 bytes |
| Log Highlights: | ====== Destination drive setup ======<br>488397168 sectors wiped with 47<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 390721968<br>Sectors match: 390721968<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (390721968) has 97675200 fewer sectors than destination (488397168)<br>Zero fill: 0<br>Src Byte fill (4C): 0<br>Dst Byte fill (47): 97675200<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: 390721968-488397167<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): d10f763b56d4ceba2d1311c61f9fb382<br>Total (sha1): 8ff620d2bedccafe8412edaad56c8554f872efbf<br>======== 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 |

| Test Case DA-14-ATA48 Sumuri Paladin 2.0.6 | | |
|---|---|---|
| | AO-13 Clone created using interface AI. | as expected |
| | AO-14 An unaligned clone is created. | as expected |
| | AO-17 Excess sectors are unchanged. | as expected |
| | AO-23 Logged information is correct. | as expected |
| Analysis: | Expected results achieved | |

### 5.2.34 DA-14-CF

| **Test Case DA-14-CF Sumuri Paladin 2.0.6** | |
|---|---|
| Case Summary: | DA-14 Create an unaligned clone from an image file. |
| Assertions: | AM-03 The tool executes in execution environment XE.<br>AO-12 If requested, a clone is created from an image file.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. |
| Tester Name: | jrr |
| Test Host: | frank |
| Test Date: | Fri Aug 24 11:28:23 2012 |
| Drives: | src(C1-CF) dst (C2-CF) other (OC-FU) |
| Source Setup: | src hash (SHA256): <<br>C7CF0218222DF80D5316511D6814266C7FA507C13F795AD3D323BB73C1590D80 ><br>src hash (SHA1): < 5B8235178DF99FA307430C088F81746606638A0B ><br>src hash (MD5): < 776DF8B4D2589E21DEBCF589EDC16D78 ><br>503808 total sectors (257949696 bytes)<br>Model ( CF) serial # ()<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 778135908 1141509631 0357/116/40 0357/032/45 Boot 72 other<br>2 P 168689522 1936028240 0288/115/43 0367/114/50 Boot 65 other<br>3 P 1869881465 1936028192 0366/032/33 0357/032/43 Boot 79 other<br>4 P 2885681152 000055499 0372/097/50 0000/010/00 Boot 0D other<br>1 1141509631 sectors 584452931072 bytes<br>2 1936028240 sectors 991246458880 bytes<br>3 1936028192 sectors 991246434304 bytes<br>4 000055499 sectors 28415488 bytes |
| Log Highlights: | ====== Destination drive setup ======<br>503808 sectors wiped with C2<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 503808<br>Sectors match: 503808<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>============== Hashes:<br>Digest hash information<br>MD5: 776df8b4d2589e21debcf589edc16d78<br>SHA1: 5b8235178df99fa307430c088f81746606638a0b<br>Hash values calculated during initial creation:<br>Total (md5): 776df8b4d2589e21debcf589edc16d78<br>Total (sha1): 5b8235178df99fa307430c088f81746606638a0b<br>======== 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 |

| Test Case DA-14-CF Sumuri Paladin 2.0.6 | |
|---|---|
| | |
| Analysis: | Expected results achieved |

### 5.2.35 DA-14-FW

| **Test Case DA-14-FW Sumuri Paladin 2.0.6** | |
|---|---|
| Case Summary: | DA-14 Create an unaligned clone from an image file. |
| Assertions: | AM-03 The tool executes in execution environment XE.<br>AO-12 If requested, a clone is created from an image file.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>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: | Tue Sep 18 14:57:12 2012 |
| Drives: | src(63-FU2) dst (50-IDE) other (OC-FU) |
| Source Setup: | src hash (SHA256): <<br>EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D ><br>src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B ><br>src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC ><br>117304992 total sectors (60060155904 bytes)<br>Model (SP0612N ) serial # ()<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 004192902 0000/001/01 0260/254/63 Boot 06 Fat16<br>2 X 004192965 113097600 0261/000/01 1023/254/63 0F extended<br>3 S 000000063 113097537 0261/001/01 1023/254/63 0B Fat32<br>4 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>5 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>6 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 004192902 sectors 2146765824 bytes<br>3 113097537 sectors 57905938944 bytes |
| Log Highlights: | ====== Destination drive setup ======<br>156301488 sectors wiped with 50<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 117304992<br>Sectors match: 117304992<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (117304992) has 38996496 fewer sectors than destination (156301488)<br>Zero fill: 0<br>Src Byte fill (63): 0<br>Dst Byte fill (50): 38996496<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: 117304992-156301487<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>============== Hashes:<br>Digest hash information<br>MD5: ee217bc4fa4f3d1b4021d29b065aa9ec<br>SHA1: f7069edcbeac863c88deced82159f22da96be99b<br>Hash values calculated during initial creation:<br>Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec |

<table>
<tr><td colspan="2">Test Case DA-14-FW Sumuri Paladin 2.0.6</td></tr>
<tr><td></td><td>Total (sha1): f7069edcbeac863c88deced82159f22da96be99b<br>======== 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>

## 5.2.36 DA-14-SATA28

<table>
<tr><th colspan="2">Test Case DA-14-SATA28 Sumuri Paladin 2.0.6</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.<br>AO-12 If requested, a clone is created from an image file.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>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>Mon Aug 20 10:06:42 2012</td></tr>
<tr><td>Drives:</td><td>src(01-SATA) dst (05-SATA) other (OC-FU)</td></tr>
<tr><td>Source Setup:</td><td>src hash (SHA256): <<br>1AA01FEAE55F5CD55185D2B1A1359B3F913E7093FEF1D1ADA220CAC456BA40D8 ><br>src hash (SHA1): < 4951236428C36B944E62E8D65862DCBEF05F282C ><br>src hash (MD5): < 0A49B13D91FA9DA87CEEE9D006CB6FD6 ><br>156301488 total sectors (80026361856 bytes)<br>Model (0JD-32HKA0 ) serial # (WD-WMAJ91448529)</td></tr>
<tr><td>Log Highlights:</td><td>====== Destination drive setup ======<br>156301488 sectors wiped with 5<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 156301488<br>Sectors match: 156301488<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>============== Hashes:<br>Digest hash information<br>MD5: 0a49b13d91fa9da87ceee9d006cb6fd6<br>SHA1: 4951236428c36b944e62e8d65862dcbef05f282c<br>Hash values calculated during initial creation:<br>Total (md5): 0a49b13d91fa9da87ceee9d006cb6fd6<br>Total (sha1): 4951236428c36b944e62e8d65862dcbef05f282c<br>======== 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>

## 5.2.37 DA-14-SATA48

**Test Case DA-14-SATA48 Sumuri Paladin 2.0.6**

| | |
|---|---|
| Case Summary: | DA-14 Create an unaligned clone from an image file. |
| Assertions: | AM-03 The tool executes in execution environment XE.<br>AO-12 If requested, a clone is created from an image file.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>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: | Sun Aug 19 21:27:42 2012 |
| Drives: | src(0d-sata) dst (2C-sata) other (OF-FU) |
| Source Setup: | src hash (SHA1): < BAAD80E8781E55F2E3EF528CA73BD41D228C1377 ><br>src hash (MD5): < 1FA7C3CBE60EB9E89863DED2411E40C9 ><br>488397168 total sectors (250059350016 bytes)<br>30400/254/63 (max cyl/hd values)<br>30401/255/63 (number of cyl/hd)<br>Model (WDC WD2500JD-22F) serial # (WD-WMAEH2678216)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 488375937 0000/001/01 1023/254/63 Boot 07 NTFS<br>2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 488375937 sectors 250048479744 bytes |
| Log Highlights: | ====== Destination drive setup ======<br>488397168 sectors wiped with 2C<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 488397168<br>Sectors match: 488397168<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>0 source read errors, 0 destination read errors<br><br>======== Excerpt from Tool log ========<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): 1fa7c3cbe60eb9e89863ded2411e40c9<br>Total (sha1): baad80e8781e55f2e3ef528ca73bd41d228c1377<br>======== 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 |

## 5.2.38 DA-14-SCSI

| **Test Case DA-14-SCSI Sumuri Paladin 2.0.6** | |
|---|---|
| Case Summary: | DA-14 Create an unaligned clone from an image file. |
| Assertions: | AM-03 The tool executes in execution environment XE.<br>AO-12 If requested, a clone is created from an image file.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. |
| Tester Name: | jrr |
| Test Host: | frank |
| Test Date: | Tue Aug 21 10:18:45 2012 |
| Drives: | src(E0) dst (08-IDE) other (OF-FU) |
| Source Setup: | src hash (SHA1): < 4A6941F1337A8A22B10FC844B4D7FA6158BECB82 ><br>src hash (MD5): < A97C8F36B7AC9D5233B90AC09284F938 ><br>17938985 total sectors (9184760320 bytes)<br>Model (ATLAS10K2-TY092J) serial # (169028142436) |
| Log Highlights: | ====== Destination drive setup ======<br>78165360 sectors wiped with 8<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 17938985<br>Sectors match: 17938985<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (17938985) has 60226375 fewer sectors than destination (78165360)<br>Zero fill: 0<br>Src Byte fill (E0): 0<br>Dst Byte fill (08): 60226375<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: 17938985-78165359<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): a97c8f36b7ac9d5233b90ac09284f938<br>Total (sha1): 4a6941f1337a8a22b10fc844b4d7fa6158becb82<br>======== End of Excerpt from Tool log ======== |
| Results: | **Assertion & Expected Result** / **Actual Result**<br>AM-03 Execution environment is XE. — as expected<br>AO-12 A clone is created from an image file. — as expected<br>AO-13 Clone created using interface AI. — as expected<br>AO-14 An unaligned clone is created. — as expected<br>AO-17 Excess sectors are unchanged. — as expected<br>AO-23 Logged information is correct. — as expected |
| Analysis: | Expected results achieved |

### 5.2.39 DA-14-THUMB

| **Test Case DA-14-THUMB Sumuri Paladin 2.0.6** | |
|---|---|
| Case Summary: | DA-14 Create an unaligned clone from an image file. |
| Assertions: | AM-03 The tool executes in execution environment XE.<br>AO-12 If requested, a clone is created from an image file.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. |
| Tester Name: | jrr |
| Test Host: | frank |
| Test Date: | Wed Aug 22 13:48:58 2012 |
| Drives: | src(D5-THUMB) dst (D6-THUMB) other (OC-FU) |
| Source Setup: | src hash (SHA1): < D68520EF74A336E49DCCF83815B7B08FDC53E38A ><br>src hash (MD5): < C843593624B2B3B878596D8760B19954 ><br>505856 total sectors (258998272 bytes)<br>Model (usb2.0Flash Disk) serial # () |
| Log Highlights: | ====== Destination drive setup ======<br>4001760 sectors wiped with D6<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 505856<br>Sectors match: 505856<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (505856) has 3495904 fewer sectors than destination (4001760)<br>Zero fill: 0<br>Src Byte fill (D5): 0<br>Dst Byte fill (D6): 3495904<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: 505856-4001759<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>============== Hashes:<br>Hash values calculated during initial creation:<br>Total (md5): c843593624b2b3b878596d8760b19954<br>Total (sha1): d68520ef74a336e49dccf83815b7b08fdc53e38a<br>======== 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 |

| Test Case DA-14-THUMB Sumuri Paladin 2.0.6 | |
|---|---|
| | |
| nalysis: | Expected results achieved |

## 5.2.40 DA-14-USB

| Test Case DA-14-USB Sumuri Paladin 2.0.6 | |
|---|---|
| Case Summary: | DA-14 Create an unaligned clone from an image file. |
| Assertions: | AM-03 The tool executes in execution environment XE.<br>AO-12 If requested, a clone is created from an image file.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-17 If requested, any excess sectors on a clone destination device are not modified.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. |
| Tester Name: | jrr |
| Test Host: | frank |
| Test Date: | Mon Aug 20 11:05:47 2012 |
| Drives: | src(63-FU2) dst (7A-SATA) other (OC-FU) |
| Source Setup: | src hash (SHA256): <<br>EC8EF011494BA6DA18F74C47547C3E74E7180585096A830F9247A98EF613BB1D ><br>src hash (SHA1): < F7069EDCBEAC863C88DECED82159F22DA96BE99B ><br>src hash (MD5): < EE217BC4FA4F3D1B4021D29B065AA9EC ><br>117304992 total sectors (60060155904 bytes)<br>Model (SP0612N ) serial # ()<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 004192902 0000/001/01 0260/254/63 Boot 06 Fat16<br>2 X 004192965 113097600 0261/000/01 1023/254/63 0F extended<br>3 S 000000063 113097537 0261/001/01 1023/254/63 0B Fat32<br>4 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>5 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>6 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 004192902 sectors 2146765824 bytes<br>3 113097537 sectors 57905938944 bytes |
| Log Highlights: | ====== Destination drive setup ======<br>156250000 sectors wiped with 7A<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 117304992<br>Sectors match: 117304992<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (117304992) has 38945008 fewer sectors than destination (156250000)<br>Zero fill: 0<br>Src Byte fill (63): 0<br>Dst Byte fill (7A): 38945008<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: 117304992-156249999<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>======== Excerpt from Tool log ========<br>============== Hashes:<br>Digest hash information<br>MD5: ee217bc4fa4f3d1b4021d29b065aa9ec |

<table>
<tr><td colspan="2">Test Case DA-14-USB Sumuri Paladin 2.0.6</td></tr>
<tr><td></td><td>SHA1: f7069edcbeac863c88deced82159f22da96be99b<br>Hash values calculated during initial creation:<br>Total (md5): ee217bc4fa4f3d1b4021d29b065aa9ec<br>Total (sha1): f7069edcbeac863c88deced82159f22da96be99b<br>======== 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>

### 5.2.41 DA-17

<table>
<tr><th colspan="2">Test Case DA-17 Sumuri Paladin 2.0.6</th></tr>
<tr><td>Case Summary:</td><td>DA-17 Create a truncated clone from an image file.</td></tr>
<tr><td>Assertions:</td><td>AM-03 The tool executes in execution environment XE.<br>AO-12 If requested, a clone is created from an image file.<br>AO-13 A clone is created using access interface DST-AI to write to the clone device.<br>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.<br>AO-20 If a truncated clone is created, the tool notifies the user.<br>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>Tue Aug 21 13:47:15 2012</td></tr>
<tr><td>Drives:</td><td>src(01-sata) dst (57-IDE) other (OC-FU)</td></tr>
<tr><td>Source Setup:</td><td>src hash (SHA256): <<br>1AA01FEAE55F5CD55185D2B1A1359B3F913E7093FEF1D1ADA220CAC456BA40D8 ><br>src hash (SHA1): < 4951236428C36B944E62E8D65862DCBEF05F282C ><br>src hash (MD5): < 0A49B13D91FA9DA87CEEE9D006CB6FD6 ><br>156301488 total sectors (80026361856 bytes)<br>Model (0JD-32HKA0 ) serial # (WD-WMAJ91448529)</td></tr>
<tr><td>Log Highlights:</td><td>====== Destination drive setup ======<br>80043264 sectors wiped with 57<br><br>====== Comparison of original to clone drive ======<br>Sectors compared: 80043264<br>Sectors match: 80043264<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (156301488) has 76258224 more sectors than destination (80043264)<br>0 source read errors, 0 destination read errors<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>============== Message from tool<br>dcfldd:: No space left on device<br><br>======== Excerpt from Tool log ========<br>============== Hashes:<br>Digest hash information<br>MD5: 0a49b13d91fa9da87ceee9d006cb6fd6<br>SHA1: 4951236428c36b944e62e8d65862dcbef05f282c<br>Hash values calculated during initial creation:<br>======== 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-19 Truncated clone is created.</td><td>as expected</td></tr>
<tr><td>AO-20 User notified that clone is truncated.</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>

## 5.2.42 DA-24

| **Test Case DA-24 Sumuri Paladin 2.0.6** | |
|---|---|
| Case Summary: | DA-24 Verify a valid image. |
| Assertions: | AM-03 The tool executes in execution environment XE.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. |
| Tester Name: | jrl |
| Test Host: | WoFat |
| Test Date: | Tue Aug 28 13:57:07 2012 |
| Drives: | src(01-ide-96) dst (none) other (0D-FU) |
| Source Setup: | src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 ><br>src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E ><br>78165360 total sectors (40020664320 bytes)<br>Model (0BB-00JHC0 ) serial # ( WD-WMAMC74171)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X<br>2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended<br>3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12<br>4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended<br>5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16<br>6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended<br>7 S 000000063 004192902 1023/001/01 1023/254/63 16 other<br>8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended<br>9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32<br>10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended<br>11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux<br>12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended<br>13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap<br>14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS<br>16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 020980827 sectors 10742183424 bytes<br>3 000032067 sectors 16418304 bytes<br>5 002104452 sectors 1077479424 bytes<br>7 004192902 sectors 2146765824 bytes<br>9 008401932 sectors 4301789184 bytes<br>11 010490382 sectors 5371075584 bytes<br>13 004208967 sectors 2154991104 bytes<br>15 027744192 sectors 14205026304 bytes<br>01F16-md5 1077479423 8B24F3D793188AF2473F69B267AFDA42<br>01F16-sha1 1077479423 074BA831B10132F4BF9F86AFAB37CB7FEF482C7D |
| Log Highlights: | Verifying image from DA-07-F16<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>============== Hashes:<br>Hash values for verification started at 20120828 14:12:54:<br>Total (md5): 8b24f3d793188af2473f69b267afda42<br>Total (sha1): 074ba831b10132f4bf9f86afab37cb7fef482c7d<br>======== End of Excerpt from Tool log ======== |
| Results: | **Assertion & Expected Result** / **Actual Result**<br>AM-03 Execution environment is XE. / as expected<br>AO-06 Tool verifies image file unchanged. / as expected<br>AO-23 Logged information is correct. / as expected |

| Test Case DA-24 Sumuri Paladin 2.0.6 | |
|---|---|
| Analysis: | Expected results achieved |

### 5.2.43 DA-25

| **Test Case DA-25 Sumuri Paladin 2.0.6** | |
|---|---|
| Case Summary: | DA-25 Detect a corrupted image. |
| Assertions: | AM-03 The tool executes in execution environment XE.<br>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.<br>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.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. |
| Tester Name: | jrl |
| Test Host: | WoFat |
| Test Date: | Tue Aug 28 13:57:38 2012 |
| Drives: | src(01-ide-96) dst (none) other (0D-FU) |
| Source Setup: | src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 ><br>src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E ><br>78165360 total sectors (40020664320 bytes)<br>Model (0BB-00JHC0 ) serial # ( WD-WMAMC74171)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X<br>2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended<br>3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12<br>4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended<br>5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16<br>6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended<br>7 S 000000063 004192902 1023/001/01 1023/254/63 16 other<br>8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended<br>9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32<br>10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended<br>11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux<br>12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended<br>13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap<br>14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS<br>16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry<br>1 020980827 sectors 10742183424 bytes<br>3 000032067 sectors 16418304 bytes<br>5 002104452 sectors 1077479424 bytes<br>7 004192902 sectors 2146765824 bytes<br>9 008401932 sectors 4301789184 bytes<br>11 010490382 sectors 5371075584 bytes<br>13 004208967 sectors 2154991104 bytes<br>15 027744192 sectors 14205026304 bytes<br>01F32-md5 4301789183 BFF7DC64C54339DA2A9D7972C076B514<br>01F32-sha1 4301789183 B861D9E999F39750B484FFB693FF69DEC090C6B8 |
| Log Highlights: | Verifying image from DA-07-F32<br><br>====== Image file corrupted for test run: ======<br>Change byte 30 of file /media/da-07-f32/da-07-f32.002 from 0x01 to 0xB9<br><br>OS: Linux sumuri 2.6.38-8-generic #42-Ubuntu SMP Mon Apr 11 03:31:50 UTC 2011 i686 i686 i386 GNU/Linux<br><br>======== Excerpt from Tool log ========<br>============== Hashes:<br>Hash values for verification started at 20120828 14:28:27:<br>Total (md5): b40525ee3e6c160b9cc0e994ce4b21c6<br>Total (sha1): d9e16dfdeb2f6560c90edd70f679f957df0fb718<br>======== End of Excerpt from Tool log ======== |
| Results: | |

| Test Case DA-25 Sumuri Paladin 2.0.6 | | |
|---|---|---|
| | **Assertion & Expected Result** | **Actual Result** |
| | AM-03 Execution environment is XE. | as expected |
| | AO-07 User notified if image file has changed. | as expected |
| | AO-08 User notified of changed locations. | as expected |
| | AO-23 Logged information is correct. | as expected |
| Analysis: | Expected results achieved | |