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Special **REPORT**

# Test Results for Digital Data Acquisition Tool: EnCase 4.22a

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**U.S. Department of Justice**
**Office of Justice Programs**
810 Seventh Street N.W.
Washington, DC 20531

**Michael B. Mukasey**
*Attorney General*

**Jeffrey L. Sedgwick**
*Acting Assistant Attorney General*

**David W. Hagy**
*Acting Principal Deputy Director, National Institute of Justice*

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# Test Results for Digital Data Acquisition Tool: EnCase 4.22a

NCJ 221168

NIJ

**David W. Hagy**
*Acting Principal Deputy Director, National Institute of Justice*

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**August 20, 2007**

# Test Results for Digital Data Acquisition Tool:
EnCase 4.22a

January 2008

National Institute of Standards and Technology
Technology Administration, U.S. Department of Commerce

## Contents

## Introduction

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

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

This document reports the results from testing EnCase, version 4.22a, against the *Digital Data Acquisition Tool Assertions and Test Plan Version 1.0*, available at the CFTT Web site (http://www.cftt.nist.gov/DA-ATP-pc-01.pdf).

Test results from other software packages and the CFTT tool methodology can be found on NIJ's computer forensics tool testing Web page, http://www.ojp.usdoj.gov/nij/topics/ecrime/cftt.htm.

# Test Results for Digital Data Acquisition Tool

| | |
|---|---|
| Tool Tested: | EnCase |
| Version: | 4.22a |
| Run Environments: | Windows XP, Windows Server 2003 & Windows 2000 |
| Supplier: | Guidance Software, Inc. |
| Address: | 215 North Marengo Ave., Suite 250<br>Pasadena, CA 91101 |
| Tel: | 626–229–9191 |
| Fax: | 626–229–9199 |
| WWW: | http://www.guidancesoftware.com/ |

## 1 Results Summary

Except for three test cases (DA–07, DA–08 and DA–09), the tested tool acquired all visible and hidden sectors completely and accurately from the test media without any anomalies. The following five anomalies were observed:

1. If a logical acquisition is made of an NTFS partition, a small number (seven in the executed test) appear in the image file twice, replacing other sectors (DA–07–NTFS).
2. If a logical acquisition is made of an NTFS partition, the last physical sector of the partition is not acquired (DA–07–NTFS).
3. If the tool attempts to acquire a defective sector, a sixty-four sector block of sectors containing the defective sector is replaced by zeros in the created image file (DA–09).
4. The sectors hidden by a *host protected area* (HPA) are not acquired (DA–08–ATA28 and DA–08–ATA48).
5. The sectors hidden by a *device configuration overlay* (DCO) are not acquired (DA–08–DCO).

For some partition types (FAT32 and NTFS) that have been imaged as a logical (partition) acquisition, if a logical restore is performed there may be a small number of differences in file system metadata between the image file and the restored partition (DA-14–F32, DA–14–F32X and DA–14–NTFS). The differences can be avoided by removing power from the destination drive instead of doing a normal power down sequence (DA-14–F32–ALT, DA–14-F32X–ALT and DA–14–NTFS–ALT).

## 2 Test Case Selection

Not all test cases or test assertions are appropriate for all tools. In addition to the base test cases, each remaining test case is linked to optional tool features needed for the test case. If a given tool implements a given feature then the test cases linked to that feature are run.

Table 1 lists the features available in EnCase and the linked test cases. Table 2 lists the features not available in EnCase and the linked test cases.

**Table 1 Selected Test Cases**

| Supported Optional Feature | Cases selected for execution |
|---|---|
| Base Cases | 06, 07 & 08 |
| Destination Device Switching | 13 |
| Read error during acquisition | 09 |
| Create an image file in more than one format | 10 |
| Create a clone from an image file | 14 & 17 |
| Fill excess sectors on a clone device | 22 |
| Detect a corrupted (or changed) image file | 24 & 25 |

**Table 2 Omitted Test Cases**

| Unsupported Optional Feature | Cases omitted (not executed) |
|---|---|
| Create a clone during acquisition | 01, 02 & 04 |
| Create cylinder aligned clones | 03, 15, 21 & 23 |
| Convert an image file from one format to another | 26 |
| Insufficient space for image file | 12 |
| Device I/O error generator available | 05, 11 & 18 |
| Fill excess sectors on a clone device | 19, 20, 21 & 23 |
| Create a clone from a subset of an image file | 16 |

Some test cases have variant forms to accommodate parameters within test assertions. These variations cover the execution environment, acquisition interface to the source drive, and type of digital object acquired. Variations were also created for image file format.

The tool was executed in one of the following Windows run time environments: Windows XP, Windows Server 2003 or Windows 2000.

The following source interfaces were tested: ATA28, ATA48, network cable, USB, and FireWire.

The following digital sources were tested: partitions (FAT12, FAT16, FAT32, FAT32X, EXT2, and NTFS), compact flash, and thumb drive.

The image files were created on either NTFS or FAT32 partitions.

# 3 Results by Test Assertion

Table 3 summarizes the test results by assertion. The column labeled **Assertion** 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 the anomaly is discussed.

**Table 3 Assertions Tested**

| Assertions Tested | Tests | Anomaly |
|---|---|---|
| AM–01 The tool uses access interface SRC-AI to access the digital source. | 21 | |
| AM–02 The tool acquires digital source DS. | 21 | |
| AM–03 The tool executes in execution environment XE. | 40 | |
| 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. | 21 | 3.2 |
| AM–07 All hidden sectors are acquired from the digital source. | 3 | 3.4 |
| AM–08 All sectors acquired from the digital source are acquired accurately. | 21 | 3.1, 3.3 |
| 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. | 21 | |
| AO–02 If an image file format is specified, the tool creates an image file in the specified format. | 3 | |
| 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. | 21 | |
| 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–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 | 1 | |

| | | |
|---|---|---|
| continued on another device. | | |
| AO–12 If requested, a clone is created from an image file. | 17 | |
| AO–13 A clone is created using access interface DST–AI to write to the clone device. | 17 | |
| 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. | 16 | 3.5 |
| AO–17 If requested, any excess sectors on a clone destination device are not modified. | 9 | |
| AO–18 If requested, a benign fill is written to excess sectors of a clone. | 2 | |
| 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. | 1 | |
| AO–20 If a truncated clone is created, the tool notifies the user. | 1 | |
| AO–23 If the tool logs any log significant information, the information is accurately recorded in the log file. | 40 | |

Two test assertions only apply in special circumstances. The assertion AO–22 is checked only for tools that create block hashes. This assertion does not apply to EnCase. 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. A write blocker was used during the tests so that assertion AO–24 was not 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–04 If clone creation is specified, the tool creates a clone of the digital source. |
| AO–03 If there is an error while writing the image file, the tool notifies the user. |
| AO–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–11 If requested, a clone is created during an acquisition of a digital source. |
| AO–15 If an aligned clone is created, each sector within a contiguous span of sectors from the source is accurately written to the same disk address on the clone device relative to the start of the span as the sector occupied on the original digital source. A span of sectors is defined to be either a mountable partition or a contiguous sequence of sectors not part of a mountable partition. Extended partitions, which may contain both mountable partitions and unallocated sectors, are not mountable partitions. |
| AO–16 If a subset of an image or acquisition is specified, all the subset is cloned. |
| AO–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. |
| AO–24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process. |

## 3.1 Logical Acquisition of NTFS Data Duplication

Seven sectors (27,744,184–27,744,190) were not imaged correctly into the image file (DA–07–NTFS). The seven sectors were replaced in the image file by the content of seven other sectors (27,744,120–27,744,126). The actual content of sectors 27,744,184–27,744,190 was not acquired. This result was verified by constructing a dd style image file that hashed to the same value as reported by the EnCase acquisition.

## 3.2 Logical Acquisition of NTFS Last Sector Omitted

The last physical sector of the NTFS was not acquired (DA–07–NTFS). The partition has 27,744,192 sectors. EnCase acquired the first 27,744,191 sectors.

## 3.3 Acquisition of Faulty Sectors

For test case DA–09 some readable sectors as acquired to the image file differed from the source drive. To determine which sectors were accurately acquired, the image file was restored to a clone and the clone was compared to the source drive.

If the tool attempts to acquire a defective sector, a sixty-four sector block of sectors containing the defective sector is replaced by zeros in the created image file. This behavior is as designed and documented by the vendor.

## 3.4 Acquisition of HPA and DCO

The tool does not remove either Host Protected Areas (HPAs) or DCOs. The tool did not acquire sectors hidden by an HPA (DA–08–ATA28 and DA–08–ATA48) or a DCO (DA–08–DCO).

## 3.5 Alternate Restore Procedure

For certain partition types (FAT32 and NTFS), a logical restore of a partition is not an exact duplicate of the original (DA–14–F32, DA–14–F32X and DA–14–NTFS). The vendor documentation states that a logical restore cannot be verified as an exact copy of the source and is not recommended when seeking to create a bit-stream duplicate of the source. For FAT32 partitions, two file system control values (not part of any data file) are adjusted as a side effect of restoring an image to a destination. This adjustment is confined to about 8 bytes of sector 1 and the first sector of the FAT table (and FAT table backup copy) of the partition. For FAT32X partitions two additional metadata sectors were modified. For NTFS partitions, other changes were made to about 40 sectors of the partition. In no case was there any effect on sectors used in data files. All sectors of the image file accurately reflected the original sectors. These changes to a restored partition (logical volume) may be a consequence of the Windows shutdown process.

One procedure to avoid this behavior during the normal Windows shutdown process is to crash the system by removing power without allowing Windows to shutdown. Because

powering off the entire system suddenly could compromise the integrity of other files on the system, NIST modified this procedure to power off only the destination drive and then follow the normal Windows shutdown procedure. The result of the modified procedure was to eliminate the anomaly from the restored copy while maintaining the integrity of the remainder of the file system. The modified procedure was used for tests DA–14–F32–ALT, DA–14–F32X–ALT and DA–14–NTFS–ALT.

# 4 Testing Environment

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

## *4.1 Test Computers*

Five test computers were used.

**Joe** and **Max** have 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

**Paladin** and **AndWife** have the following configuration:

Intel® D845WNL Motherboard
BIOS Version HV84510A.86A.0022.P05
Intel® Pentium™ 4 CPU 2.0Ghz
512672K RAM
Adaptec 29160 SCSI Adapter card
Tekram DC–390U3W SCSI Adapter card
Plextor CR-RW PX–W124TS Rev: 1.06
LG 52X CDROM
1.44 MB floppy drive
Three slots for removable IDE hard disk drives
Two slots for removable SCSI hard disk drive

**Aramis** has the following configuration:

Shuttle SD37P2 Motherboard
BIOS Phoenix Award
Intel® Core™2 Duo Core 2 775 CPU 1.86GHz
Memory (4) 240 pin DDR2 DIMM slots
3x2GB (2 GB 240–pin PC2–4200 non-ECC DDR2 non-Registered DIMM (p/n AMF) per DIMM (Max 6 GB)
1x512 MB (1 512MB 240–pin)
Lite-on IT Corp Model CD–RW/DVD-ROM SOHC–5236V Drive
3–port FireWire 800 (2x 9-pin, 1x 6-pin) PCI Express x1 card. RoHS compliant.
8 USB 2.0 ports
1 IEEE 1394 port (Mini)
1 IEEE 1394 port
1 External SATA port
1 RJ45 Gigabit LAN port
1 Coaxial S/PDIF out

### *4.2 Support Software*

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

# 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 **Log File Highlights** box of the test report summary.

### *5.1 Test Results Report Key*

A summary of the actual test results is presented in this report. The following table presents a description of each section of the test report summary.

| Heading | Description |
|---|---|
| First Line: | Test case ID, name, and version of tool tested. |
| Case Summary: | Test case summary from *Digital Data Acquisition Tool Assertions and Test Plan Version 1.0.* |
| Assertions: | The test assertions applicable to the test case, selected from *Digital Data Acquisition Tool Assertions and Test Plan Version 1.0.* |
| Tester Name: | Name or initials of person executing test procedure. |
| Test Host: | Host computer executing the test. |
| Test Date: | Time and date that test was started. |
| Drives: | Source drive (the drive acquired), destination drive (if a clone is created), and media drive (to contain a created image). |

| Heading | Description |
|---|---|
| Source Setup: | Layout of partitions on the source drive and the expected hash of the drive. |
| Log Highlights: | Information extracted from various log files to illustrate conformance or nonconformance to the test assertions. |
| Results | Expected and actual results for each assertion tested. |
| Analysis | Whether or not the expected results were achieved. |

## *5.2 Test Details*

### 5.2.1 DA-06-ATA28

| **Test Case DA-06-ATA28 EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | HecRamsey |
| Test Date: | Fri Nov 17 14:50:24 2006 |
| Drives: | src(43) dst (none) other (FAT) |
| Source Setup: | src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 ><br>78125000 total sectors (40000000000 bytes)<br>Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)<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 057143205 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 027712125 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027712062 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 |

| Test Case DA-06-ATA28 EnCase 4.22a | |
|---|---|
| | 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 027712062 sectors 14188575744 bytes |
| Log Highlights: | Actual Date:11/18/06 02:47:11AM<br>Total Size:40,000,000,000 bytes (37.3GB)<br>Total Sectors:78,125,000<br>File Integrity:Completely Verified, 0 Errors<br>Write Blocker:FastBloc<br>EnCase Version:4.22a<br>System Version:Windows XP<br>Acquisition Hash:BC39C3F7EE7A50E77B9BA1E65A5AEEF7<br>Verify Hash:BC39C3F7EE7A50E77B9BA1E65A5AEEF7 |
| 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 |

## 5.2.2 DA-06-ATA48

<table>
<tr><th colspan="2">Test Case DA-06-ATA48 EnCase 4.22a</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>slm</td></tr>
<tr><td>Test Host:</td><td>HecRamsey</td></tr>
<tr><td>Test Date:</td><td>Wed Nov 22 14:25:08 2006</td></tr>
<tr><td>Drives:</td><td>src(4c) dst (none) other (NTFS)</td></tr>
<tr><td>Source Setup:</td><td>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</td></tr>
<tr><td>Log Highlights:</td><td>Actual Date:11/23/06 12:24:47AM<br>Total Size:200,049,647,616 bytes (186.3GB)<br>Total Sectors:390,721,968<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows 2003 Server<br>Acquisition Hash:D10F763B56D4CEBA2D1311C61F9FB382<br>Verify Hash:D10F763B56D4CEBA2D1311C61F9FB382</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-01 Source acquired using interface AI.</td><td>as expected</td></tr>
<tr><td>AM-02 Source is type DS.</td><td>as expected</td></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AM-05 An image is created on file system type FS.</td><td>as expected</td></tr>
<tr><td>AM-06 All visible sectors acquired.</td><td>as expected</td></tr>
<tr><td>AM-08 All sectors accurately acquired.</td><td>as expected</td></tr>
<tr><td>AO-01 Image file is complete and accurate.</td><td>as expected</td></tr>
<tr><td>AO-05 Multifile image created.</td><td>as expected</td></tr>
<tr><td>AO-22 Tool calculates hashes by block.</td><td>option not available</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
<tr><td>AO-24 Source is unchanged by acquisition.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

### 5.2.3 DA-06-FW

| **Test Case DA-06-FW EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | HecRamsey |
| Test Date: | Fri Nov 17 09:39:32 2006 |
| Drives: | src(43) dst (none) other (fat) |
| Source Setup: | src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 ><br>78125000 total sectors (40000000000 bytes)<br>Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)<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 057143205 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 027712125 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027712062 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 027712062 sectors 14188575744 bytes |
| Log Highlights: | Actual Date:11/17/06 09:07:49PM<br>Total Size:40,000,000,000 bytes (37.3GB)<br>Total Sectors:78,125,000<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows XP<br>Acquisition Hash:BC39C3F7EE7A50E77B9BA1E65A5AEEF7<br>Verify Hash:BC39C3F7EE7A50E77B9BA1E65A5AEEF7 |
| Results: | |

| **Assertion & Expected Result** | **Actual Result** |
|---|---|

| Test Case DA-06-FW EnCase 4.22a | | |
|---|---|---|
| | 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 | |

## 5.2.4 DA-06-NCAB

<table>
<tr><th colspan="2">Test Case DA-06-NCAB EnCase 4.22a</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>slm</td></tr>
<tr><td>Test Host:</td><td>frank</td></tr>
<tr><td>Test Date:</td><td>Wed Jan 24 10:16:10 2007</td></tr>
<tr><td>Drives:</td><td>src(07) dst (none) other (fat)</td></tr>
<tr><td>Source Setup:</td><td>src hash (MD5): < 2EAF712DAD80F66E30DEA00365B4579B ><br>156301488 total sectors (80026361856 bytes)<br>Model (WDC WD800JD-32HK) serial # (WD-WMAJ91510044)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 156280257 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 156280257 sectors 80015491584 bytes</td></tr>
<tr><td>Log Highlights:</td><td>Actual Date:01/23/07 11:30:27AM<br>Total Size:80,026,361,856 bytes (74.5GB)<br>Total Sectors:156,301,488<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows 2003 Server<br>Acquisition Hash:2EAF712DAD80F66E30DEA00365B4579B<br>Verify Hash:2EAF712DAD80F66E30DEA00365B4579B</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-01 Source acquired using interface AI.</td><td>as expected</td></tr>
<tr><td>AM-02 Source is type DS.</td><td>as expected</td></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AM-05 An image is created on file system type FS.</td><td>as expected</td></tr>
<tr><td>AM-06 All visible sectors acquired.</td><td>as expected</td></tr>
<tr><td>AM-08 All sectors accurately acquired.</td><td>as expected</td></tr>
<tr><td>AO-01 Image file is complete and accurate.</td><td>as expected</td></tr>
<tr><td>AO-05 Multifile image created.</td><td>as expected</td></tr>
<tr><td>AO-22 Tool calculates hashes by block.</td><td>option not available</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
<tr><td>AO-24 Source is unchanged by acquisition.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

## 5.2.5 DA-06-USB

| **Test Case DA-06-USB EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | McMillan |
| Test Date: | Wed Nov 22 14:26:30 2006 |
| Drives: | src(01) dst (none) other (NTFS) |
| Source Setup: | 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: | Actual Date:11/22/06 03:03:44PM<br>Total Size:40,020,664,320 bytes (37.3GB)<br>Total Sectors:78,165,360<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows 2000<br>Acquisition Hash:F458F673894753FA6A0EC8B8EC63848E<br>Verify Hash:F458F673894753FA6A0EC8B8EC63848E |
| Results: | **Assertion & Expected Result** \| **Actual Result** |

| Test Case DA-06-USB EnCase 4.22a | | |
|---|---|---|
| | 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 | |

## 5.2.6 DA-07-C1-CF

<table>
<tr><th colspan="2">Test Case DA-07-C1-CF EnCase 4.22a</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>slm</td></tr>
<tr><td>Test Host:</td><td>HecRamsey</td></tr>
<tr><td>Test Date:</td><td>Thu Nov 30 09:56:03 2006</td></tr>
<tr><td>Drives:</td><td>src(c1-cf) dst (none) other (ntfs)</td></tr>
<tr><td>Source Setup:</td><td>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</td></tr>
<tr><td>Log Highlights:</td><td>Actual Date:11/30/06 08:47:50PM<br>Total Size:257,949,696 bytes (246MB)<br>Total Sectors:503,808<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows 2003 Server<br>Acquisition Hash:776DF8B4D2589E21DEBCF589EDC16D78<br>Verify Hash:776DF8B4D2589E21DEBCF589EDC16D78</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-01 Source acquired using interface AI.</td><td>as expected</td></tr>
<tr><td>AM-02 Source is type DS.</td><td>as expected</td></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AM-05 An image is created on file system type FS.</td><td>as expected</td></tr>
<tr><td>AM-06 All visible sectors acquired.</td><td>as expected</td></tr>
<tr><td>AM-08 All sectors accurately acquired.</td><td>as expected</td></tr>
<tr><td>AO-01 Image file is complete and accurate.</td><td>as expected</td></tr>
<tr><td>AO-05 Multifile image created.</td><td>as expected</td></tr>
<tr><td>AO-22 Tool calculates hashes by block.</td><td>option not available</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
<tr><td>AO-24 Source is unchanged by acquisition.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

## 5.2.7 DA-07-THUMB

<table>
<tr><th colspan="2">Test Case DA-07-THUMB EnCase 4.22a</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>slm</td></tr>
<tr><td>Test Host:</td><td>HecRamsey</td></tr>
<tr><td>Test Date:</td><td>Fri Dec 1 16:23:33 2006</td></tr>
<tr><td>Drives:</td><td>src(d5-thumb) dst (none) other (fat32)</td></tr>
<tr><td>Source Setup:</td><td>src hash (MD5): < C843593624B2B3B878596D8760B19954 ><br>505856 total sectors (258998272 bytes)<br>Model (usb2.0Flash Disk) 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</td></tr>
<tr><td>Log Highlights:</td><td>Actual Date:12/02/06 04:20:37AM<br>Total Size:258,998,272 bytes (247MB)<br>Total Sectors:505,856<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows XP<br>Acquisition Hash:C843593624B2B3B878596D8760B19954<br>Verify Hash:C843593624B2B3B878596D8760B19954</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-01 Source acquired using interface AI.</td><td>as expected</td></tr>
<tr><td>AM-02 Source is type DS.</td><td>as expected</td></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AM-05 An image is created on file system type FS.</td><td>as expected</td></tr>
<tr><td>AM-06 All visible sectors acquired.</td><td>as expected</td></tr>
<tr><td>AM-08 All sectors accurately acquired.</td><td>as expected</td></tr>
<tr><td>AO-01 Image file is complete and accurate.</td><td>as expected</td></tr>
<tr><td>AO-05 Multifile image created.</td><td>as expected</td></tr>
<tr><td>AO-22 Tool calculates hashes by block.</td><td>option not available</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
<tr><td>AO-24 Source is unchanged by acquisition.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

## 5.2.8 DA-07-EXT2

| **Test Case DA-07-EXT2 EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | frank |
| Test Date: | Thu Mar 8 15:24:01 2007 |
| Drives: | src(43) dst (fat) other (none) |
| Source Setup: | src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 ><br>78125000 total sectors (40000000000 bytes)<br>Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)<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 057143205 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 027712125 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027712062 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 027712062 sectors 14188575744 bytes<br>43ext2-md5sum 5371075583 C7A84DE9ACBCB05463604CE8823D0874 |
| Log Highlights: | Total Capacity:5,371,075,584 bytes (5GB)<br>Total Clusters:5,245,191Unallocated:5,187,181,568 bytes (4.8GB)<br>Actual Date:02/25/07 03:28:32PM<br>Total Size:5,371,075,584 bytes (5GB)<br>Total Sectors:10,490,382<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows XP<br>Acquisition Hash:C7A84DE9ACBCB05463604CE8823D0874<br>Verify Hash:C7A84DE9ACBCB05463604CE8823D0874 |

| Test Case DA-07-EXT2 EnCase 4.22a | |
|---|---|
| | |
| 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 |

## 5.2.9 DA-07-F12

| **Test Case DA-07-F12 EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | HecRamsey |
| Test Date: | Wed Nov 29 14:30:26 2006 |
| Drives: | src(01) dst (none) other (ntfs) |
| Source Setup: | 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: | Total Capacity:16,384,000 bytes (15.6MB)<br>Total Clusters:4,000Unallocated:16,248,832 bytes (15.5MB)<br>OEM Version:MSWIN4.0Serial Number:8AC5-98DE<br>Actual Date:11/30/06 02:31:32AM<br>Total Size:16,418,304 bytes (15.7MB)<br>Total Sectors:32,067<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows 2000 |

| **Test Case DA-07-F12 EnCase 4.22a** | |
|---|---|
| | Acquisition Hash:E20E3CFEA80BF6F2D2AA75E829CC8CD9<br>Verify Hash:E20E3CFEA80BF6F2D2AA75E829CC8CD9 |
| 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 |

### 5.2.10 DA-07-F16

| **Test Case DA-07-F16 EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | HecRamsey |
| Test Date: | Fri Nov 24 17:33:43 2006 |
| Drives: | src(43) dst (none) other (fat) |
| Source Setup: | src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 ><br>78125000 total sectors (40000000000 bytes)<br>Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)<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 057143205 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 027712125 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027712062 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 027712062 sectors 14188575744 bytes<br>43F16-md5sum 1077479423 37E81FFB31C3CB38AA48B2237500908E |
| Log Highlights: | Total Capacity:1,077,313,536 bytes (1GB)<br>Total Clusters:32,877Unallocated:1,076,953,088 bytes (1GB)<br>OEM Version:MSWIN4.0Serial Number:CCCF-3DAD<br>Actual Date:11/25/06 05:21:54AM<br>Total Size:1,077,479,424 bytes (1GB)<br>Total Sectors:2,104,452<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows 2003 Server<br>Acquisition Hash:37E81FFB31C3CB38AA48B2237500908E |

| **Test Case DA-07-F16 EnCase 4.22a** | |
|---|---|
| | Verify Hash:37E81FFB31C3CB38AA48B2237500908E |
| 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 |

### 5.2.11 DA-07-F32

| **Test Case DA-07-F32 EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | HecRamsey |
| Test Date: | Wed Nov 29 13:52:05 2006 |
| Drives: | src(01) dst (none) other (ntfs) |
| Source Setup: | 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: | Total Capacity:4,293,382,144 bytes (4GB)<br>Total Clusters:1,048,189Unallocated:4,292,919,296 bytes (4GB)<br>OEM Version:MSWIN4.1Serial Number:5AEE-05B5<br>Actual Date:11/30/06 01:55:20AM<br>Total Size:4,301,789,184 bytes (4GB)<br>Total Sectors:8,401,932<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows XP |

| **Test Case DA-07-F32 EnCase 4.22a** | |
|---|---|
| | Acquisition Hash:BFF7DC64C54339DA2A9D7972C076B514<br>Verify Hash:BFF7DC64C54339DA2A9D7972C076B514 |
| 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-07-F32X

| **Test Case DA-07-F32X EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | HecRamsey |
| Test Date: | Wed Nov 29 10:03:08 2006 |
| Drives: | src(43) dst (none) other (fat32) |
| Source Setup: | src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 ><br>78125000 total sectors (40000000000 bytes)<br>Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)<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 057143205 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 027712125 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027712062 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 027712062 sectors 14188575744 bytes<br>43F32x-md5sum 10742183424 5980CB0FA68E9862C65765DF50F00906 |
| Log Highlights: | Total Capacity:10,731,683,840 bytes (10GB)<br>Total Clusters:1,310,020Unallocated:10,729,906,176 bytes (10GB)<br>OEM Version:MSWIN4.1Serial Number:4445-13C7<br>Actual Date:11/29/06 10:14:29PM<br>Total Size:10,742,183,424 bytes (10GB)<br>Total Sectors:20,980,827<br>File Integrity:Completely Verified, 0 Errors<br>Write Blocker:FastBloc<br>EnCase Version:4.22a<br>System Version:Windows 2000 |

| **Test Case DA-07-F32X EnCase 4.22a** | |
|---|---|
| | Acquisition Hash:5980CB0FA68E9862C65765DF50F00906<br>Verify Hash:5980CB0FA68E9862C65765DF50F00906 |
| Results: | |

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

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

## 5.2.13 DA-07-NTFS

| **Test Case DA-07-NTFS EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | HecRamsey |
| Test Date: | Fri Nov 24 14:51:05 2006 |
| Drives: | src(01) dst (none) other (NTFS) |
| Source Setup: | 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: | Total Capacity:14,205,022,208 bytes (13.2GB)<br>Total Clusters:3,468,023Unallocated:14,137,028,608 bytes (13.2GB)<br>Actual Date:11/24/06 10:32:33PM<br>Total Size:14,205,025,792 bytes (13.2GB)<br>Total Sectors:27,744,191<br>File Integrity:Completely Verified, 0 Errors |

| **Test Case DA-07-NTFS EnCase 4.22a** | |
|---|---|
| | EnCase Version:4.22a<br>System Version:Windows 2003 Server<br>Acquisition Hash:494A6ED8A827AD9B5403E0CC89379956<br>Verify Hash:494A6ED8A827AD9B5403E0CC89379956 |
| 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. | one sector missed |
| AM-08 All sectors accurately acquired. | some sectors differ |
| AO-01 Image file is complete and accurate. | as expected |
| AO-05 Multifile image created. | as expected |
| AO-22 Tool calculates hashes by block. | option not available |
| AO-23 Logged information is correct. | as expected |
| AO-24 Source is unchanged by acquisition. | as expected |

| | |
|---|---|
| Analysis: | Expected results not achieved |

## 5.2.14 DA-08-ATA28

<table>
<tr><th colspan="2">Test Case DA-08-ATA28 EnCase 4.22a</th></tr>
<tr><td>Case Summary:</td><td>DA-08 Acquire a physical drive with hidden sectors 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-07 All hidden 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>slm</td></tr>
<tr><td>Test Host:</td><td>HecRamsey</td></tr>
<tr><td>Test Date:</td><td>Tue Dec 5 18:06:12 2006</td></tr>
<tr><td>Drives:</td><td>src(42) dst (none) other (ntfs)</td></tr>
<tr><td>Source Setup:</td><td>src hash (MD5): < F4B9AAB24554EEEB2A962BDA554A9252 ><br>78165360 total sectors (40020664320 bytes)<br>65534/015/63 (max cyl/hd values)<br>65535/016/63 (number of cyl/hd)<br>IDE disk: Model (WDC WD400JB-00JJC0) serial # (WD-WCAMA3958512)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 070348572 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 070348572 sectors 36018468864 bytes<br><br>HPA created<br>BIOS, XBIOS and Direct disk geometry Reporter (BXDR)<br>BXDR 128 /S70000000 /P /fbxdrlog.txt<br>Setting Maximum Addressable Sector to 70000000<br>MAS now set to 70000000<br><br>Hashes with HPA in place<br>md5:9BF3C3DEADE47056A1DDC073C5F6B2E2<br>sha1:D76F909482B00767B62C295CADE202F92E61CD2E</td></tr>
<tr><td>Log Highlights:</td><td>Actual Date:12/06/06 04:13:25AM<br>Total Size:35,840,000,512 bytes (33.4GB)<br>Total Sectors:70,000,001<br>File Integrity:Completely Verified, 0 Errors<br>Write Blocker:FastBloc<br>EnCase Version:4.22a<br>System Version:Windows 2000<br>Acquisition Hash:9BF3C3DEADE47056A1DDC073C5F6B2E2<br>Verify Hash:9BF3C3DEADE47056A1DDC073C5F6B2E2</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-07 All hidden sectors acquired.</td><td>HPA not acquired</td></tr>
<tr><td>AM-08 All sectors accurately acquired.</td><td>as expected</td></tr>
</table>
</td></tr>
</table>

| Test Case DA-08-ATA28 EnCase 4.22a | | |
|---|---|---|
| | AO-01 Image file is complete and accurate. | as expected |
| | AO-05 Multifile image created. | as expected |
| | AO-22 Tool calculates hashes by block. | option not available |
| | AO-23 Logged information is correct. | as expected |
| | AO-24 Source is unchanged by acquisition. | as expected |
| Analysis: | Expected results not achieved | |

## 5.2.15 DA-08-ATA48

| **Test Case DA-08-ATA48 EnCase 4.22a** | |
|---|---|
| Case Summary: | DA-08 Acquire a physical drive with hidden sectors to an image file. |
| Assertions: | AM-01 The tool uses access interface SRC-AI to access the digital source.<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-07 All hidden 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: | slm |
| Test Host: | HecRamsey |
| Test Date: | Mon Dec 4 11:24:50 2006 |
| Drives: | src(4b) dst (fat32) other (none) |
| Source Setup: | src hash (MD5): < B5641B5A594912B4D60518304B1DE698 ><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-00GVC0) serial # (WD-WCAL78252964)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 351646722 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 351646722 sectors 180043121664 bytes<br><br>HPA created<br>BIOS, XBIOS and Direct disk geometry Reporter (BXDR)<br>BXDR 128 /S351000000 /P /fHPA.TXT<br>Setting Maximum Addressable Sector to 351000000<br>MAS now set to 351000000<br><br>Hashes with HPA in place<br>md5:6BAFEFC000470C126434D933429C879B<br>sha1:2D50DBD82CD3DA90A6E5BF13B2B40808C40998A1 |
| Log Highlights: | Actual Date:12/04/06 11:20:11PM<br>Total Size:179,712,000,512 bytes (167.4GB)<br>Total Sectors:351,000,001<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows 2003 Server<br>Acquisition Hash:6BAFEFC000470C126434D933429C879B<br>Verify Hash:6BAFEFC000470C126434D933429C879B |
| Results: | |

| **Assertion & Expected Result** | **Actual Result** |
|---|---|
| AM-01 Source acquired using interface AI. | as expected |
| AM-02 Source is type DS. | as expected |
| AM-03 Execution environment is XE. | as expected |
| AM-05 An image is created on file system type FS. | as expected |
| AM-06 All visible sectors acquired. | as expected |
| AM-07 All hidden sectors acquired. | HPA not acquired |
| AM-08 All sectors accurately acquired. | as expected |
| AO-01 Image file is complete and accurate. | as expected |

| Test Case DA-08-ATA48 EnCase 4.22a | | |
|---|---|---|
| | AO-05 Multifile image created. | as expected |
| | AO-22 Tool calculates hashes by block. | option not available |
| | AO-23 Logged information is correct. | as expected |
| | AO-24 Source is unchanged by acquisition. | as expected |
| Analysis: | Expected results not achieved | |

## 5.2.16 DA-08-DCO

| **Test Case DA-08-DCO EnCase 4.22a** | |
|---|---|
| Case Summary: | DA-08 Acquire a physical drive with hidden sectors to an image file. |
| Assertions: | AM-01 The tool uses access interface SRC-AI to access the digital source.<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-07 All hidden 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: | slm |
| Test Host: | HecRamsey |
| Test Date: | Tue Dec 5 19:30:07 2006 |
| Drives: | src(92) dst (none) other (ntfs) |
| Source Setup: | src hash (MD5): < E095DD1BD0B0DD6E603153A3FE1A2F3E ><br>58633344 total sectors (30020272128 bytes)<br>58167/015/63 (max cyl/hd values)<br>58168/016/63 (number of cyl/hd)<br>IDE disk: Model (WDC WD300BB-00CAA0) serial # (WD-WMA8H2140350)<br>N Start LBA Length Start C/H/S End C/H/S boot Partition type<br>1 P 000000063 058605057 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 058605057 sectors 30005789184 bytes<br><br>Hashes with DCO in place:<br>md5:525963C6789423396FE1F3202A8CBD04<br>sha1.txt:55A3CFE756B7B0034DCCE71F7D7A477D8681B781 |
| Log Highlights: | Actual Date:12/06/06 06:18:08AM<br>Total Size:27,018,245,120 bytes (25.2GB)<br>Total Sectors:52,770,010<br>File Integrity:Completely Verified, 0 Errors<br>Write Blocker:FastBloc<br>EnCase Version:4.22a<br>System Version:Windows XP<br>Acquisition Hash:525963C6789423396FE1F3202A8CBD04<br>Verify Hash:525963C6789423396FE1F3202A8CBD04 |
| Results: | |

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

| Test Case DA-08-DCO EnCase 4.22a | |
|---|---|
| | |
| Analysis: | Expected results not achieved |

## 5.2.17 DA-09

| **Test Case DA-09 EnCase 4.22a** | |
|---|---|
| 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: | mrmw |
| Test Host: | Max |
| Test Date: | Tue Mar 13 11:41:08 2007 |
| Drives: | src(ED-BAD-CPR1) dst (26) other (none) |
| Source Setup: | No before hash for ED-BAD-CPR1 120103200 total sectors (61492838400 bytes)<br>Drive with known bad sectors<br>Vendor: Maxtor Model: DiamondMax Plus 9<br><br>Known Bad Sector List for ED-CPR-BAD-1<br><br>Manufacturer: Maxtor<br>Model: 6Y060L0 DiamondMax Plus 9<br>Serial Number: Y27KR6CE<br>Capacity: 60GB<br>Interface: PATA<br><br>10069095, 10069911, 12023808, 18652594, 18656041, 18656857, 18660303, 18661119, 19746716-19746717, 22233904, 23098370, 23383001, 24102466-24102467, 24104250, 24106656, 24107458, 28959971-28959972, 41825791, 41828995, 52654580, 52655318, 60522984, 68643842-68643843, 69973290, 72714626, 72715293, 82148809, 82148810, 83810525, 85310861, 85313430, 85314038-85314039, 86321211, 86323780, 87186066, 87856313, 87856922, 97191260-97191261, 100093150-100093151, 103861021, 109706975-109706976, 110347947, 110350122-110350123, 115664758, 115835518 |
| Log Highlights: | Comparision of original to clone Drive<br>Sectors compared: 120103200<br>Sectors match: 120100384<br>Sectors differ: 2816<br>Bytes differ: 1438976<br>Diffs range 10069056-10069119, 10069888-10069951, 12023808-12023871, 18652544-18652607, 18656000-18656063, 18656832-18656895, 18660288-18660351, 18661056-18661119, 19746688-19746751, 22233856-22233919, 23098368-23098431, 23382976-23383039, 24102464-24102527, 24104192-24104255, 24106624-24106687, 24107456-24107519, 28959936-28959999, 41825728-41825791, 41828992-41829055, 52654528-52654591, 52655296-52655359, 60522944-60523007, 68643840-68643903, 69973248-69973311, |

**Test Case DA-09 EnCase 4.22a**

72714624-72714687, 72715264-72715327, 82148800-82148863,
83810496-83810559, 85310848-85310911, 85313408-85313471,
85313984-85314047, 86321152-86321215, 86323776-86323839,
87186048-87186111, 87856256-87856319, 87856896-87856959,
97191232-97191295, 100093120-100093183, 103860992-103861055,
109706944-109707007, 110347904-110347967, 110350080-110350143,
115664704-115664767, 115835456-115835519
Source (120103200) has 192478608 fewer sectors than destination (312581808)
Zero fill: 0
Src Byte fill (ED): 0
Dst Byte fill (26): 192478608
Other fill: 0
Other no fill: 0
Zero fill range:
Src fill range:
Dst fill range: 120103200-312581807
Other fill range:
Other not filled range:
0 source read errors, 0 destination read errors

Actual Date:03/13/07 11:03:18AM
Total Size:61,492,838,400 bytes (57.3GB)
Total Sectors:120,103,200
File Integrity:Completely Verified, 0 Errors
EnCase Version:4.22a
System Version:Windows 2003 Server
Acquisition Hash:F7537808758654F5D3BD66D0BC0EE827
Verify Hash:F7537808758654F5D3BD66D0BC0EE827
Read errors:
The following sector blocks reported read errors during acquisition
10069056-10069119, 10069888-10069951, 12023808-12023871, 18652544-18652607,
18656000-18656063, 18656832-18656895, 18660288-18660351, 18661056-18661119,
19746688-19746751, 22233856-22233919, 23098368-23098431, 23382976-23383039,
24102464-24102527, 24104192-24104255, 24106624-24106687, 24107456-24107519,
28959936-28959999, 41825728-41825791, 41828992-41829055, 52654528-52654591,
52655296-52655359, 60522944-60523007, 68643840-68643903, 69973248-69973311,
72714624-72714687, 72715264-72715327, 82148800-82148863, 83810496-83810559,
85310848-85310911, 85313408-85313471, 85313984-85314047, 86321152-86321215,
86323776-86323839, 87186048-87186111, 87856256-87856319, 87856896-87856959,
97191232-97191295, 100093120-100093183, 103860992-103861055, 109706944-
109707007, 110347904-110347967, 110350080-110350143, 115664704-115664767,
115835456-115835519

Results:

| Assertion & Expected Result | Actual Result |
|---|---|
| AM-01 Source acquired using interface AI. | as expected |
| AM-02 Source is type DS. | as expected |
| AM-03 Execution environment is XE. | as expected |
| AM-05 An image is created on file system type FS. | as expected |
| AM-06 All visible sectors acquired. | as expected |
| AM-08 All sectors accurately acquired. | some sectors differ |
| AM-09 Error logged. | 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. | as expected |

Analysis: Expected results not achieved

## 5.2.18 DA-10-BEST

| **Test Case DA-10-BEST EnCase 4.22a** | |
|---|---|
| Case Summary: | DA-10 Acquire a digital source to an image file in an alternate format. |
| Assertions: | AM-01 The tool uses access interface SRC-AI to access the digital source.<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-02 If an image file format is specified, the tool creates an image file in the specified format.<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: | slm |
| Test Host: | HecRamsey |
| Test Date: | Wed Dec 6 10:31:18 2006 |
| Drives: | src(43) dst (none) other (fat32) |
| Source Setup: | src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 ><br>78125000 total sectors (40000000000 bytes)<br>Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)<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 057143205 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 027712125 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027712062 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 027712062 sectors 14188575744 bytes |
| Log Highlights: | Actual Date:12/06/06 09:13:32PM<br>Total Size:40,000,000,000 bytes (37.3GB)<br>Total Sectors:78,125,000<br>File Integrity:Completely Verified, 0 Errors<br>Write Blocker:FastBloc<br>EnCase Version:4.22a<br>System Version:Windows 2000<br>Acquisition Hash:BC39C3F7EE7A50E77B9BA1E65A5AEEF7<br>Verify Hash:BC39C3F7EE7A50E77B9BA1E65A5AEEF7 |

| Test Case DA-10-BEST EnCase 4.22a | |
|---|---|
| | |
| Results: | |

| Assertion & Expected Result | Actual Result |
|---|---|
| AM-01 Source acquired using interface AI. | as expected |
| AM-02 Source is type DS. | as expected |
| AM-03 Execution environment is XE. | as expected |
| AM-05 An image is created on file system type FS. | as expected |
| AM-06 All visible sectors acquired. | as expected |
| AM-08 All sectors accurately acquired. | as expected |
| AO-01 Image file is complete and accurate. | as expected |
| AO-02 Image file in specified format. | as expected |
| AO-05 Multifile image created. | as expected |
| AO-22 Tool calculates hashes by block. | option not 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-10-PASSWORD

| **Test Case DA-10-PASSWORD EnCase 4.22a** | |
|---|---|
| Case Summary: | DA-10 Acquire a digital source to an image file in an alternate format. |
| Assertions: | AM-01 The tool uses access interface SRC-AI to access the digital source.<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-02 If an image file format is specified, the tool creates an image file in the specified format.<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: | slm |
| Test Host: | HecRamsey |
| Test Date: | Wed Dec 6 16:05:35 2006 |
| Drives: | src(01) dst (none) other (ntfs) |
| Source Setup: | 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: | Actual Date:12/07/06 02:19:18AM<br>Total Size:40,020,664,320 bytes (37.3GB)<br>Total Sectors:78,165,360<br>File Integrity:Completely Verified, 0 Errors<br>Write Blocker:FastBloc<br>EnCase Version:4.22a<br>System Version:Windows 2000<br>Acquisition Hash:F458F673894753FA6A0EC8B8EC63848E<br>Verify Hash:F458F673894753FA6A0EC8B8EC63848E |

| Test Case DA-10-PASSWORD EnCase 4.22a | |
|---|---|
| | |
| Results: | |

| Assertion & Expected Result | Actual Result |
|---|---|
| AM-01 Source acquired using interface AI. | as expected |
| AM-02 Source is type DS. | as expected |
| AM-03 Execution environment is XE. | as expected |
| AM-05 An image is created on file system type FS. | as expected |
| AM-06 All visible sectors acquired. | as expected |
| AM-08 All sectors accurately acquired. | as expected |
| AO-01 Image file is complete and accurate. | as expected |
| AO-02 Image file in specified format. | as expected |
| AO-05 Multifile image created. | as expected |
| AO-22 Tool calculates hashes by block. | option not 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-10-UNCOMPRESSED

| **Test Case DA-10-UNCOMPRESSED EnCase 4.22a** | |
|---|---|
| Case Summary: | DA-10 Acquire a digital source to an image file in an alternate format. |
| Assertions: | AM-01 The tool uses access interface SRC-AI to access the digital source.<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-02 If an image file format is specified, the tool creates an image file in the specified format.<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: | slm |
| Test Host: | HecRamsey |
| Test Date: | Wed Dec 6 14:07:05 2006 |
| Drives: | src(01) dst (none) other (ntfs) |
| Source Setup: | 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: | Actual Date:12/06/06 10:48:58PM<br>Total Size:40,020,664,320 bytes (37.3GB)<br>Total Sectors:78,165,360<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows 2003 Server<br>Acquisition Hash:F458F673894753FA6A0EC8B8EC63848E<br>Verify Hash:F458F673894753FA6A0EC8B8EC63848E |

| Test Case DA-10-UNCOMPRESSED EnCase 4.22a | |
|---|---|
| Results: | |

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

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

## 5.2.21 DA-13-HOT

| **Test Case DA-13-HOT EnCase 4.22a** | |
|---|---|
| Case Summary: | DA-13 Create an image file where there is insufficient space on a single volume, and use destination device switching to continue on another volume. |
| Assertions: | AM-01 The tool uses access interface SRC-AI to access the digital source.<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-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-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-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.<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: | slm |
| Test Host: | HecRamsey |
| Test Date: | Thu Dec 7 14:26:05 2006 |
| Drives: | src(43) dst (none) other (fat) |
| Source Setup: | src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 ><br>78125000 total sectors (40000000000 bytes)<br>Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)<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 057143205 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 027712125 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027712062 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 027712062 sectors 14188575744 bytes |
| Log Highlights: | Actual Date:12/08/06 01:00:36AM<br>Total Size:40,000,000,000 bytes (37.3GB)<br>Total Sectors:78,125,000<br>File Integrity:Completely Verified, 0 Errors<br>Write Blocker:FastBloc |

| **Test Case DA-13-HOT EnCase 4.22a** | |
|---|---|
| | EnCase Version:4.22a<br>System Version:Windows 2000<br>Acquisition Hash:BC39C3F7EE7A50E77B9BA1E65A5AEEF7<br>Verify Hash:BC39C3F7EE7A50E77B9BA1E65A5AEEF7<br>Actual Date:12/08/06 01:00:36AM<br>Total Size:40,000,000,000 bytes (37.3GB)<br>Total Sectors:78,125,000<br>File Integrity:Completely Verified, 0 Errors<br>Write Blocker:FastBloc<br>EnCase Version:4.22a<br>System Version:Windows 2000<br>Acquisition Hash:BC39C3F7EE7A50E77B9BA1E65A5AEEF7<br>Verify Hash:BC39C3F7EE7A50E77B9BA1E65A5AEEF7 |
| Results: | |
| Analysis: | Expected results achieved |

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

## 5.2.22 DA-14-ATA28

| **Test Case DA-14-ATA28 EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | porthos |
| Test Date: | Thu Jan 25 10:43:41 2007 |
| Drives: | src(43) dst (f4) other (ntfs) |
| Source Setup: | src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 ><br>78125000 total sectors (40000000000 bytes)<br>Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)<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 057143205 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 027712125 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027712062 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 027712062 sectors 14188575744 bytes |
| Log Highlights: | Destination setup<br>156301488 sectors wiped with F4<br><br>Comparision of original to clone Drive<br>Sectors compared: 78125000<br>Sectors match: 78125000<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (78125000) has 78176488 fewer sectors than destination (156301488)<br>Zero fill: 0<br>Src Byte fill (43): 0<br>Dst Byte fill (F4): 78176488<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range: |

<table>
<tr><td colspan="2">Test Case DA-14-ATA28 EnCase 4.22a</td></tr>
<tr><td></td><td>Dst fill range:  78125000-156301487<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>Total Sectors: 156,301,488<br>Input Hash: BC39C3F7EE7A50E77B9BA1E65A5AEEF7</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>

## 5.2.23 DA-14-ATA48

<table>
<tr><th colspan="2">Test Case DA-14-ATA48 EnCase 4.22a</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>slm</td></tr>
<tr><td>Test Host:</td><td>porthos</td></tr>
<tr><td>Test Date:</td><td>Thu Jan 25 13:30:41 2007</td></tr>
<tr><td>Drives:</td><td>src(4c) dst (2a) other (ntfs)</td></tr>
<tr><td>Source Setup:</td><td>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</td></tr>
<tr><td>Log Highlights:</td><td>Destination setup<br>490234752 sectors wiped with 2A<br><br>Comparision 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 99512784 fewer sectors than destination (490234752)<br>Zero fill: 0<br>Src Byte fill (4C): 0<br>Dst Byte fill (2A): 99512784<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: 390721968-490234751<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>Total Sectors: 490,234,752<br>Input Hash: D10F763B56D4CEBA2D1311C61F9FB382</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>

## 5.2.24 DA-14-CF

<table>
<tr><th colspan="2">Test Case DA-14-CF EnCase 4.22a</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>slm</td></tr>
<tr><td>Test Host:</td><td>athos</td></tr>
<tr><td>Test Date:</td><td>Wed Jan 24 15:48:28 2007</td></tr>
<tr><td>Drives:</td><td>src(c1-cf) dst (c2-cf) other (ntfs)</td></tr>
<tr><td>Source Setup:</td><td>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</td></tr>
<tr><td>Log Highlights:</td><td>Destination setup<br>503808 sectors wiped with C2<br><br>Comparision 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>Total Sectors: 503,808<br>Input Hash: 776DF8B4D2589E21DEBCF589EDC16D78</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>

## 5.2.25 DA-14-F12

| **Test Case DA-14-F12 EnCase 4.22a** | |
|---|---|
| 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: | mrmw |
| Test Host: | Freddy |
| Test Date: | Fri Feb 2 14:54:03 2007 |
| Drives: | src(01) dst (25) other (none) |
| Source Setup: | 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: | Comparision of original to clone Partition<br>Sectors compared: 32067<br>Sectors match: 32067<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range:<br>run start Mon Feb 5 08:22:21 2007<br>run finish Mon Feb 5 08:22:28 2007<br>elapsed time 0:0:7<br>Normal exit<br>Total Sectors: 32,067<br>Input Hash: E20E3CFEA80BF6F2D2AA75E829CC8CD9<br>Total Capacity:16,384,000 bytes (15.6MB)<br>Total Clusters:4,000Unallocated:16,248,832 bytes (15.5MB)<br>OEM Version:MSWIN4.0Serial Number:8AC5-98DE<br>Actual Date:11/30/06 02:31:32AM<br>Total Size:16,418,304 bytes (15.7MB) |

<table>
<tr><td colspan="2">Test Case DA-14-F12 EnCase 4.22a</td></tr>
<tr><td></td><td>Total Sectors:32,067<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows 2000<br>Acquisition Hash:E20E3CFEA80BF6F2D2AA75E829CC8CD9<br>Verify Hash:E20E3CFEA80BF6F2D2AA75E829CC8CD9</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>

## 5.2.26 DA-14-F16

| **Test Case DA-14-F16 EnCase 4.22a** | |
|---|---|
| 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: | mrmw |
| Test Host: | Freddy |
| Test Date: | Fri Feb 2 14:54:03 2007 |
| Drives: | src(43) dst (02) other (none) |
| Source Setup: | src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 ><br>78125000 total sectors (40000000000 bytes)<br>Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)<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 057143205 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 027712125 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027712062 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 027712062 sectors 14188575744 bytes |
| Log Highlights: | Comparision of original to clone Partition<br>Sectors compared: 2104452<br>Sectors match: 2104452<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range:<br>run start Fri Feb 2 14:36:57 2007<br>run finish Fri Feb 2 14:43:44 2007<br>elapsed time 0:6:47<br>Normal exit<br>Total Sectors: 2,104,452<br>Input Hash: 37E81FFB31C3CB38AA48B2237500908E<br>Total Capacity:1,077,313,536 bytes (1GB)<br>Total Clusters:32,877Unallocated:1,076,953,088 bytes (1GB)<br>OEM Version:MSWIN4.0Serial Number:CCCF-3DAD<br>Actual Date:11/25/06 02:21:54AM<br>Total Size:1,077,479,424 bytes (1GB) |

<table>
<tr><td colspan="2">Test Case DA-14-F16 EnCase 4.22a</td></tr>
<tr><td></td><td>Total Sectors:2,104,452<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows 2003 Server<br>Acquisition Hash:37E81FFB31C3CB38AA48B2237500908E<br>Verify Hash:37E81FFB31C3CB38AA48B2237500908E</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>

## 5.2.27 DA-14-F32

| **Test Case DA-14-F32 EnCase 4.22a** | |
|---|---|
| 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: | mrmw |
| Test Host: | Freddy |
| Test Date: | Mon Feb 5 08:38:40 2007 |
| Drives: | src(01) dst (25) other (none) |
| Source Setup: | 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: | Comparision of original to clone Partition<br>Sectors compared: 8401932<br>Sectors match: 8401931<br>Sectors differ: 1<br>Bytes differ: 1<br>Diffs range: 1<br>run start Mon Feb 5 09:05:00 2007<br>run finish Mon Feb 5 09:32:07 2007<br>elapsed time 0:27:7<br>Normal exit<br>Total Sectors: 8,401,932<br>Input Hash: BFF7DC64C54339DA2A9D7972C076B514<br>Total Capacity:4,293,382,144 bytes (4GB)<br>Total Clusters:1,048,189Unallocated:4,292,919,296 bytes (4GB)<br>OEM Version:MSWIN4.1Serial Number:5AEE-05B5<br>Actual Date:11/29/06 10:55:20PM |

| **Test Case DA-14-F32 EnCase 4.22a** | |
|---|---|
| | Total Size:4,301,789,184 bytes (4GB)<br>Total Sectors:8,401,932<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows XP<br>Acquisition Hash:BFF7DC64C54339DA2A9D7972C076B514<br>Verify Hash:BFF7DC64C54339DA2A9D7972C076B514 |
| 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. | some sectors differ as expected |
| AO-17 Excess sectors are unchanged. | as expected |
| AO-23 Logged information is correct. | as expected |

| | |
|---|---|
| Analysis: | Expected results not achieved |

## 5.2.28 DA-14-F32-ALT

| **Test Case DA-14-F32-ALT EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | porthos |
| Test Date: | Wed Feb 21 17:07:29 2007 |
| Drives: | src(01) dst (7e) other (ntfs) |
| Source Setup: | 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: | Comparision of original to clone Partition<br>Sectors compared: 8401932<br>Sectors match: 8401932<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range:<br>Source (8401932) has 417690 fewer sectors than destination (8819622)<br>Zero fill: 0<br>Src Byte fill (01): 0<br>Dst Byte fill (7B): 417690<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: 8401932-8819621<br>Other fill range:<br>Other not filled range: |

| **Test Case DA-14-F32-ALT EnCase 4.22a** | |
|---|---|
| | run start Thu Feb 22 09:53:00 2007<br>run finish Thu Feb 22 10:07:01 2007<br>elapsed time 0:14:1<br>Normal exit<br>Total Sectors: 8,819,622<br>Input Hash: BFF7DC64C54339DA2A9D7972C076B514 |
| Results: | |

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

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

## 5.2.29 DA-14-F32X

| **Test Case DA-14-F32X EnCase 4.22a** | |
|---|---|
| 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: | mrmw |
| Test Host: | Freddy |
| Test Date: | Fri Feb 2 16:11:22 2007 |
| Drives: | src(01) dst (02) other (none) |
| Source Setup: | 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: | Comparision of original to clone Partition<br>Sectors compared: 20980827<br>Sectors match: 20980824<br>Sectors differ: 3<br>Bytes differ: 3<br>Diffs range: 1, 32, 10268<br>Source (20980827) has 16065 fewer sectors than destination (20996892)<br>Zero fill: 0<br>Src Byte fill (43): 0<br>Dst Byte fill (02): 16065<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: 20980827-20996891<br>Other fill range:<br>Other not filled range: |

| **Test Case DA-14-F32X EnCase 4.22a** | |
|---|---|
| | run start Wed Feb 2 16:23:03 2033<br>run finish Wed Feb 2 17:30:47 2033<br>elapsed time 1:7:44<br>Normal exit<br>Total Sectors: 20,996,892<br>Input Hash: 5980CB0FA68E9862C65765DF50F00906 |
| 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. | some sectors differ |
| AO-17 Excess sectors are unchanged. | as expected |
| AO-23 Logged information is correct. | as expected |

| | |
|---|---|
| Analysis: | Expected results not achieved |

## 5.2.30 DA-14-F32X-ALT

| **Test Case DA-14-F32X-ALT EnCase 4.22a** | |
|---|---|
| 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: | rpa |
| Test Host: | joe |
| Test Date: | Mon Mar 5 17:16:46 2007 |
| Drives: | src(43) dst (7b) other (none) |
| Source Setup: | src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 ><br>78125000 total sectors (40000000000 bytes)<br>Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)<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 057143205 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 027712125 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027712062 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 027712062 sectors 14188575744 bytes |
| Log Highlights: | Comparision of original to clone Partition<br>Sectors compared: 20980827<br>Sectors match: 20980827<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range:<br>Source (20980827) has 3229065 fewer sectors than destination (24209892)<br>Zero fill: 0<br>Src Byte fill (43): 0<br>Dst Byte fill (7B): 3229065<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: 20980827-24209891<br>Other fill range:<br>Other not filled range: |

<table>
<tr><th colspan="2">Test Case DA-14-F32X-ALT EnCase 4.22a</th></tr>
<tr><td></td><td>run start Mon Mar  5 17:23:25 2007<br>run finish Mon Mar  5 17:54:38 2007<br>elapsed time 0:31:13<br>Normal exit<br>Total Sectors: 24,209,892<br>Input Hash: 5980CB0FA68E9862C65765DF50F00906</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>

## 5.2.31 DA-14-FW

| **Test Case DA-14-FW EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | porthos |
| Test Date: | Mon Feb 5 10:49:30 2007 |
| Drives: | src(43) dst (7b) other (ntfs) |
| Source Setup: | src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 ><br>78125000 total sectors (40000000000 bytes)<br>Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)<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 057143205 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 027712125 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027712062 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 027712062 sectors 14188575744 bytes |
| Log Highlights: | Destination setup<br>78177792 sectors wiped with 7B<br><br>Comparision of original to clone Drive<br>Sectors compared: 78125000<br>Sectors match: 78125000<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (78125000) has 52792 fewer sectors than destination (78177792)<br>Zero fill: 0<br>Src Byte fill (43): 0<br>Dst Byte fill (7B): 52792<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range: |

<table>
<tr><td colspan="2">Test Case DA-14-FW EnCase 4.22a</td></tr>
<tr><td></td><td>Dst fill range:  78125000-78177791<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>Total Sectors: 78,177,792<br>Input Hash: BC39C3F7EE7A50E77B9BA1E65A5AEEF7</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>

## 5.2.32 DA-14-NTFS

| **Test Case DA-14-NTFS EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | porthos |
| Test Date: | Tue Feb 20 18:08:58 2007 |
| Drives: | src(01) dst (7e) other (ntfs) |
| Source Setup: | 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>Excess destination partition sectors hash:<br>CMD: /usr/local/bin/machash.csh da-14-ntfs porthos slm /dev/sdc11 7e - before -new_log -winsize 7102513152<br>SHA1 0 - 7102513151 = E6F72DCFE5D9234F2BD3287546AD7D2F23E7CD74<br>SHA1 7102513152 - 14205026303 = 2AB27A61ADBF0D1C7075DE2E921B8408C27E9BB6<br>SHA1 14205026304 - 15874758143 = 26294001D7003837FA5EDFA37C84C17CF6AC263A |
| Log Highlights: | Comparision of original to clone Partition<br>Sectors compared: 27744192<br>Sectors match: 27744145<br>Sectors differ: 47<br>Bytes differ: 10320<br>Diffs range: 6160368, 6160376-6160386, 6160392-6160394, 6160512-6160519, 6291504-6291511, 15502768-15502775, 27744184-27744191<br>Source (27744192) has 3261195 fewer sectors than destination (31005387)<br>Zero fill: 0<br>Src Byte fill (01): 0 |

<table>
<tr><th colspan="2">Test Case DA-14-NTFS EnCase 4.22a</th></tr>
<tr><td></td><td>Dst Byte fill (7E): 3261194<br>Other fill:  0<br>Other no fill: 1<br>Zero fill range:<br>Src fill range:<br>Dst fill range:  27744192-31005385<br>Other fill range:<br>Other not filled range:  31005386<br>run start Fri Feb 16 11:30:05 2007<br>run finish Fri Feb 16 12:10:41 2007<br>elapsed time 0:40:36<br>Normal exit<br>Total Sectors: 27,744,191<br>Input Hash: 494A6ED8A827AD9B5403E0CC89379956</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>some sectors differ</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 not achieved</td></tr>
</table>

## 5.2.33 DA-14-NTFS-ALT

| **Test Case DA-14-NTFS-ALT EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | porthos |
| Test Date: | Tue Feb 20 18:08:58 2007 |
| Drives: | src(01) dst (7e) other (ntfs) |
| Source Setup: | 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>Excess destination partition sectors hash:<br>CMD: /usr/local/bin/machash.csh da-14-ntfs-alt porthos slm /dev/sdb11 7e -before -new_log -winsize 14205026304<br>SHA1 0 - 14205026303 = 963EEF0D607C43FA56BFEC4A5A6AE614974BFD93<br>SHA1 14205026304 - 15874758143 = 26294001D7003837FA5EDFA37C84C17CF6AC263A |
| Log Highlights: | Comparision of original to clone Partition<br>Sectors compared: 27744192<br>Sectors match: 27744184<br>Sectors differ: 8<br>Bytes differ: 547<br>Diffs range: 27744184-27744191<br>Source (27744192) has 3261195 fewer sectors than destination (31005387)<br>Zero fill: 0<br>Src Byte fill (01): 0<br>Dst Byte fill (7E): 3261194<br>Other fill: 0<br>Other no fill: 1 |

<table>
<tr><th colspan="2">Test Case DA-14-NTFS-ALT EnCase 4.22a</th></tr>
<tr><td></td><td>Zero fill range:<br>Src fill range:<br>Dst fill range:  27744192-31005385<br>Other fill range:<br>Other not filled range:  31005386<br>run start Wed Feb 21 10:15:48 2007<br>run finish Wed Feb 21 11:03:16 2007<br>elapsed time 0:47:28<br>Normal exit<br>Total Sectors: 31,005,386<br>Input Hash: 494A6ED8A827AD9B5403E0CC89379956</td></tr>
<tr><td>Results:</td><td>
<table>
<tr><th>Assertion & Expected Result</th><th>Actual Result</th></tr>
<tr><td>AM-03 Execution environment is XE.</td><td>as expected</td></tr>
<tr><td>AO-12 A clone is created from an image file.</td><td>as expected</td></tr>
<tr><td>AO-13 Clone created using interface AI.</td><td>as expected</td></tr>
<tr><td>AO-14 An unaligned clone is created.</td><td>as expected</td></tr>
<tr><td>AO-17 Excess sectors are unchanged.</td><td>as expected</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

## 5.2.34 DA-14-THUMB

<table>
<tr><th colspan="2">Test Case DA-14-THUMB EnCase 4.22a</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>slm</td></tr>
<tr><td>Test Host:</td><td>porthos</td></tr>
<tr><td>Test Date:</td><td>Wed Feb 7 11:31:15 2007</td></tr>
<tr><td>Drives:</td><td>src(d5-thumb) dst (d4) other (ntfs)</td></tr>
<tr><td>Source Setup:</td><td>src hash (MD5): < C843593624B2B3B878596D8760B19954 ><br>505856 total sectors (258998272 bytes)<br>Model (usb2.0Flash Disk) 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</td></tr>
<tr><td>Log Highlights:</td><td>Destination setup<br>505856 sectors wiped with D4<br><br>Comparision 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>0 source read errors, 0 destination read errors<br><br>Total Sectors: 505,856<br>Input Hash: C843593624B2B3B878596D8760B19954</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>

## 5.2.35 DA-14-USB

| **Test Case DA-14-USB EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | porthos |
| Test Date: | Wed Feb 7 15:51:14 2007 |
| Drives: | src(01) dst (2d) other (none) |
| Source Setup: | 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 setup<br>78177792 sectors wiped with 7E<br><br>Comparision 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 12432 fewer sectors than destination (78177792)<br>Zero fill: 0<br>Src Byte fill (01): 0<br>Dst Byte fill (7E): 12432<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range:<br>Src fill range: |

<table>
<tr><td colspan="2">Test Case DA-14-USB EnCase 4.22a</td></tr>
<tr><td></td><td>Dst fill range:  78165360-78177791<br>Other fill range:<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>Total Sectors: 78,177,792<br>Input Hash: F458F673894753FA6A0EC8B8EC63848E</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-17

| **Test Case DA-17 EnCase 4.22a** | |
|---|---|
| Case Summary: | DA-17 Create a truncated 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-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. |
| Tester Name: | slm |
| Test Host: | frank |
| Test Date: | Tue Mar 13 14:45:49 2007 |
| Drives: | src(43) dst (94) other (none) |
| Source Setup: | src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 ><br>78125000 total sectors (40000000000 bytes)<br>Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)<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 057143205 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 027712125 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027712062 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 027712062 sectors 14188575744 bytes |
| Log Highlights: | Destination setup<br>58633344 sectors wiped with 94<br><br>Comparision of original to clone Drive<br>Sectors compared: 58633344<br>Sectors match: 58633344<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (78125000) has 19491656 more sectors than destination (58633344)<br>0 source read errors, 0 destination read errors<br><br>Total Sectors: 58,633,344<br>Input Hash: |
| 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-17 EnCase 4.22a | | |
|---|---|---|
| | AO-13 Clone created using interface AI. | as expected |
| | AO-19 Truncated clone is created. | as expected |
| | AO-20 User notified that clone is truncated. | as expected |
| | AO-23 Logged information is correct. | as expected |
| Analysis: | Expected results achieved | |

## 5.2.37 DA-22-ATA28

| **Test Case DA-22-ATA28 EnCase 4.22a** | |
|---|---|
| Case Summary: | DA-22 Create an unaligned clone from an image file, filling excess sectors. |
| 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-18 If requested, a benign fill is written to excess sectors of a clone.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. |
| Tester Name: | slm |
| Test Host: | HecRamsey |
| Test Date: | Wed Jan 10 11:31:08 2007 |
| Drives: | src(43) dst (82) other (ntfs) |
| Source Setup: | src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 ><br>78125000 total sectors (40000000000 bytes)<br>Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)<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 057143205 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 027712125 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027712062 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 027712062 sectors 14188575744 bytes |
| Log Highlights: | Destination setup<br>156301488 sectors wiped with 82<br><br>Comparision of original to clone Drive<br>Sectors compared: 78125000<br>Sectors match: 78125000<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range<br>Source (78125000) has 78176488 fewer sectors than destination (156301488)<br>Zero fill: 0<br>Src Byte fill (43): 0<br>Dst Byte fill (82): 0<br>Other fill (5A): 78176488<br>Other no fill: 0<br>Zero fill range:<br>Src fill range:<br>Dst fill range: |

<table>
<tr><th colspan="2">Test Case DA-22-ATA28 EnCase 4.22a</th></tr>
<tr><td></td><td>Other fill range:  78125000-156301487<br>Other not filled range:<br>0 source read errors, 0 destination read errors<br><br>Total Sectors: 156,301,488<br>Input Hash: BC39C3F7EE7A50E77B9BA1E65A5AEEF7<br>Output Hash: BC39C3F7EE7A50E77B9BA1E65A5AEEF7</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-18 Excess sectors are filled.</td><td>as expected</td></tr>
<tr><td>AO-23 Logged information is correct.</td><td>as expected</td></tr>
</table>
</td></tr>
<tr><td>Analysis:</td><td>Expected results achieved</td></tr>
</table>

## 5.2.38 DA-22-F16

| **Test Case DA-22-F16 EnCase 4.22a** | |
|---|---|
| Case Summary: | DA-22 Create an unaligned clone from an image file, filling excess sectors. |
| 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-18 If requested, a benign fill is written to excess sectors of a clone.<br>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. |
| Tester Name: | slm |
| Test Host: | HecRamsey |
| Test Date: | Tue Jan 16 15:29:59 2007 |
| Drives: | src(43) dst (82) other (fat) |
| Source Setup: | src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 ><br>78125000 total sectors (40000000000 bytes)<br>Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)<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 057143205 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 027712125 1023/000/01 1023/254/63 05 extended<br>15 S 000000063 027712062 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 027712062 sectors 14188575744 bytes |
| Log Highlights: | Destination setup<br>156301488 sectors wiped with 82<br>Comparision of original to clone Partition<br>Sectors compared: 2104452<br>Sectors match: 2104452<br>Sectors differ: 0<br>Bytes differ: 0<br>Diffs range:<br>Source (2104452) has 176715 fewer sectors than destination (2281167)<br>Zero fill: 176715<br>Src Byte fill (43): 0<br>Dst Byte fill (82): 0<br>Other fill: 0<br>Other no fill: 0<br>Zero fill range: 2104452-2281166<br>Src fill range:<br>Dst fill range:<br>Other fill range: |

<table>
<tr><td colspan="2">Test Case DA-22-F16 EnCase 4.22a</td></tr>
<tr><td></td><td>Other not filled range:<br>run start Tue Jan 16 16:00:13 2007<br>run finish Tue Jan 16 16:06:09 2007<br>elapsed time 0:5:56<br>Normal exit<br>Total Sectors: 2,281,167<br>Input Hash: 37E81FFB31C3CB38AA48B2237500908E<br>Output Hash: 37E81FFB31C3CB38AA48B2237500908E</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-18 Excess sectors are filled.</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>

## 5.2.39 DA-24

| **Test Case DA-24 EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | Frank |
| Test Date: | Fri Jan 19 14:49:42 2007 |
| Drives: | src(4c) dst (none) other (ntfs) |
| Source Setup: | 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: | Actual Date:11/23/06 12:24:47AM<br>Total Size:200,049,647,616 bytes (186.3GB)<br>Total Sectors:390,721,968<br>File Integrity:Completely Verified, 0 Errors<br>EnCase Version:4.22a<br>System Version:Windows 2003 Server<br>Acquisition Hash:D10F763B56D4CEBA2D1311C61F9FB382<br>Verify Hash:D10F763B56D4CEBA2D1311C61F9FB382 |
| Results: | |

| **Assertion & Expected Result** | **Actual Result** |
|---|---|
| AM-03 Execution environment is XE. | as expected |
| AO-06 Tool verifies image file unchanged. | as expected |
| AO-23 Logged information is correct. | as expected |

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

## 5.2.40 DA-25

| **Test Case DA-25 EnCase 4.22a** | |
|---|---|
| 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: | slm |
| Test Host: | porthos |
| Test Date: | Mon Jan 22 17:28:56 2007 |
| Drives: | src(01) dst (none) other (ntfs) |
| Source Setup: | 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: | Image file corrupted for test run:<br>Change byte 2853 of file da-10-uncompressed-01.E01 from 0x30 to 0x99<br>Actual Date:01/22/07 03:32:09PM<br>Total Size:40,020,664,320 bytes (37.3GB)<br>Total Sectors:78,165,360<br>File Integrity:Completely Verified, 1 Errors<br>EnCase Version:4.22a<br>System Version:Windows XP<br>Acquisition Hash:00C73CE734EE6221C94E6A7ACDF353C9<br>Verify Hash:B4BF740D378500EFF8163C3FF0F33558 |
| Results: | |

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

| Test Case DA-25 EnCase 4.22a | |
|---|---|
| Analysis: | Expected results achieved |

## About the National Institute of Justice

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

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

### Strategic Goals

NIJ has seven strategic goals grouped into three categories:

#### Creating relevant knowledge and tools

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

#### Dissemination

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

#### Agency management

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

### Program Areas

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

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

To find out more about the National Institute of Justice, please visit:

*http://www.ojp.usdoj.gov/nij*

or contact:

National Criminal Justice
Reference Service
P.O. Box 6000
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