Test Results for Digital Data Acquisition Tool: EnCase 5.05f
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This report was prepared for the National Institute of Justice, U.S. Department of Justice, by the Office of Law Enforcement Standards of the National Institute of Standards and Technology under Interagency Agreement 2003–IJ–R–029.

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EnCase 5.05f
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Introduction

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

Test results provide the information necessary for developers to improve tools, users to make informed choices, and the legal community and others to understand the tools’ capabilities. 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 5.05f, 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: 5.05f
Supplier: Guidance Software, Inc.
Address: 215 North Marengo Ave.
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–09, and DA–14), 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 of sectors, seven in the executed test, appear in the image file twice, replacing seven other sectors that fail to be acquired (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 with an error granularity greater than one sector, some readable sectors near the defective sector are replaced by zeros in the created image file (DA–09–02, DA–09–16, and DA–16–64).
4. If the tool attempts to acquire a defective sector from an ATA drive while using FastBloc SE to write block the drive, no notification of faulty sectors is given to the user.
5. 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 defined in Digital Data Acquisition Tool Assertions and Test Plan Version 1.0 are appropriate for all tools. In addition to the base test cases, each remaining test case is linked to optional tool features needed for the test case. If a given tool implements a given feature then the test cases linked to that feature are
run. Table 1 lists the features available in EnCase and the linked test cases selected for execution. Table 2 lists the features not available in EnCase and the test cases not executed.

Table 1 Selected Test Cases

<table>
<thead>
<tr>
<th>Supported Optional Feature</th>
<th>Cases selected for execution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Cases</td>
<td>06, 07 &amp; 08</td>
</tr>
<tr>
<td>Destination Device Switching</td>
<td>13</td>
</tr>
<tr>
<td>Read error during acquisition</td>
<td>09</td>
</tr>
<tr>
<td>Create an image file in more than one format</td>
<td>10</td>
</tr>
<tr>
<td>Insufficient space for image file</td>
<td>12</td>
</tr>
<tr>
<td>Create a clone from an image file</td>
<td>14 &amp; 17</td>
</tr>
<tr>
<td>Fill excess sectors on a clone device</td>
<td>22</td>
</tr>
<tr>
<td>Detect a corrupted (or changed) image file</td>
<td>24 &amp; 25</td>
</tr>
</tbody>
</table>

Table 2 Omitted Test Cases

<table>
<thead>
<tr>
<th>Unsupported Optional Feature</th>
<th>Cases omitted (not executed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a clone during acquisition</td>
<td>01, 02 &amp; 04</td>
</tr>
<tr>
<td>Create cylinder aligned clones</td>
<td>03, 15, 21 &amp; 23</td>
</tr>
<tr>
<td>Convert an image file from one format to another</td>
<td>26</td>
</tr>
<tr>
<td>Device I/O error generator available</td>
<td>05, 11 &amp; 18</td>
</tr>
<tr>
<td>Fill excess sectors acquired to a clone device</td>
<td>19 &amp; 20</td>
</tr>
<tr>
<td>Create a clone from a subset of an image file</td>
<td>16</td>
</tr>
</tbody>
</table>

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 Microsoft 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, 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 Assertions Tested gives the text of each assertion. The column labeled Tests gives the number of test cases that use the given assertion. The column labeled Anomaly gives the section number in this report where any anomalies found for the assertion are discussed.

<table>
<thead>
<tr>
<th>Assertions Tested</th>
<th>Tests</th>
<th>Anomaly</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM–01 The tool uses access interface SRC–AI to access the digital source.</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>AM–02 The tool acquires digital source DS.</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>AM–03 The tool executes in execution environment XE.</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>AM–05 If image file creation is specified, the tool creates an image file on file system type FS.</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>AM–06 All visible sectors are acquired from the digital source.</td>
<td>27</td>
<td>3.2</td>
</tr>
<tr>
<td>AM–07 All hidden sectors are acquired from the digital source.</td>
<td>3</td>
<td>3.1, 3.3</td>
</tr>
<tr>
<td>AM–08 All sectors acquired from the digital source are acquired accurately.</td>
<td>27</td>
<td>3.1, 3.3</td>
</tr>
<tr>
<td>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.</td>
<td>4</td>
<td>3.3</td>
</tr>
<tr>
<td>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.</td>
<td>4</td>
<td>3.3</td>
</tr>
<tr>
<td>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.</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>AO–02 If an image file format is specified, the tool creates an image file in the specified format.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Assertions Tested</td>
<td>Tests</td>
<td>Anomaly</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td>AO–12 If requested, a clone is created from an image file.</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>AO–13 A clone is created using access interface DST–AI to write to the clone device.</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td>22</td>
<td>3.4</td>
</tr>
<tr>
<td>AO–17 If requested, any excess sectors on a clone destination device are not modified.</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>AO–18 If requested, a benign fill is written to excess sectors of a clone.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>AO–20 If a truncated clone is created, the tool notifies the user.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>AO–23 If the tool logs any log significant information, the information is accurately recorded in the log file.</td>
<td>53</td>
<td></td>
</tr>
</tbody>
</table>

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 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

<table>
<thead>
<tr>
<th>Assertions not Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM–04 If clone creation is specified, the tool creates a clone of the digital source.</td>
</tr>
<tr>
<td>AO–03 If there is an error while writing the image file, the tool notifies the user.</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td>AO–11 If requested, a clone is created during an acquisition of a digital source.</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td>AO–16 If a subset of an image or acquisition is specified, all the subset is cloned.</td>
</tr>
<tr>
<td>AO–21 If there is a write error during clone creation, the tool notifies the user.</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td>AO–24 If the tool executes in a forensically safe execution environment, the digital</td>
</tr>
</tbody>
</table>
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 partition 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

EnCase 5 allows specification of an error granularity that specifies the size of a window surrounding any encountered faulty sectors such that for any faulty sectors encountered the sectors within the window surrounding the faulty sector are replaced by zeros in the created image file. Variations of test case DA–09 were executed with error granularity of 1, 2, 16 and 64. Variations DA–09–01, DA–09–02, and DA–09–16 were executed using a hardware write blocker and variation DA–09–64 was executed with FastBloc SE (a software write blocker).

Variation DA–09–01 acquired all readable sectors and filled the faulty sectors place in the image file with zeros (expected behavior). Variations DA–09–02 and DA–09–16 acquired, with the exception of readable sectors within granularity blocks surrounding faulty sectors, all readable sectors outside of granularity blocks surrounding faulty sectors. This is the behavior intended for the tool by the software vendor.

For variation DA–09–64 there were two anomalies: (1) the user was not notified that faulty sectors were encountered on the source, and (2) each faulty sector was surrounded by a variable sized block (varying from 1 to 64 sectors) of sectors filled with non-zero data from an undetermined source (rather than the expected 64 sector zero filled blocks).

3.4 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, the first sector of the FAT table, and the first sector.
of the FAT table backup copy of the partition. For NTFS partitions, 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
Four test computers were used.

**Frank, Freddy, 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

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](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 tool under test with the test assertions. Conformance with each assertion tested by a
given test case is evaluated by examining the Log Highlights box of the test report 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.

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

### 5.2 Test Details

#### 5.2.1 DA-06-ATA28

<table>
<thead>
<tr>
<th>Case Summary:</th>
<th>DA-06 Acquire a physical device using access interface AI to an image file.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assertions:</td>
<td><strong>AM-01</strong> The tool uses access interface SRC-AI to access the digital source.</td>
</tr>
<tr>
<td></td>
<td><strong>AM-02</strong> The tool acquires digital source DS.</td>
</tr>
<tr>
<td></td>
<td><strong>AM-03</strong> The tool executes in execution environment XE.</td>
</tr>
<tr>
<td></td>
<td><strong>AM-05</strong> If image file creation is specified, the tool creates an image file on file system type FS.</td>
</tr>
<tr>
<td></td>
<td><strong>AM-06</strong> All visible sectors are acquired from the digital source.</td>
</tr>
<tr>
<td></td>
<td><strong>AM-08</strong> All sectors acquired from the digital source are acquired accurately.</td>
</tr>
<tr>
<td></td>
<td><strong>AO-01</strong> If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.</td>
</tr>
<tr>
<td></td>
<td><strong>AO-05</strong> 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.</td>
</tr>
<tr>
<td></td>
<td><strong>AO-22</strong> If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.</td>
</tr>
<tr>
<td></td>
<td><strong>AO-23</strong> If the tool logs any log significant information, the information is accurately recorded in the log file.</td>
</tr>
<tr>
<td></td>
<td><strong>AO-24</strong> If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.</td>
</tr>
</tbody>
</table>
Test Case DA-06-ATA28 EnCase 5.05f

Tester Name: slm
Test Host: joe
Test Date: Wed Apr 18 16:18:23 2007
Drives: src(43) dst (none) other (fat32)

Source
src hash (SHA1): < 88E6EE7FAD237DC7A732281DD93F525065E5871 >
src hash (MD5): < BC39C3F7EE7A50E77B9BAE65A5AEEF7 >
78125000 total sectors (40000000000 bytes)

Model (DBB-75JHC0      ) serial # (WD-WMAMC46588)

N   Start LBA Length    Start C/H/S End C/H/S   boot Partition type
1 P 000000063 020980827 0000/001/01 1023/254/63      0C Fat32X
2 X 020980890 057143205 1023/000/01 1023/254/63      0F extended
3 S 000000063 000032067 1023/001/01 1023/254/63      01 Fat12
4 x 0000032130 002104515 1023/000/01 1023/254/63      05 extended
5 S 000000063 002104452 1023/001/01 1023/254/63      06 Fat16
6 x 002136645 004192965 1023/000/01 1023/254/63      05 extended
7 S 000000063 004192902 1023/001/01 1023/254/63      16 other
8 x 006329610 008401995 1023/000/01 1023/254/63      05 extended
9 S 000000063 008401932 1023/001/01 1023/254/63      0F extended
10 x 014731605 010490445 1023/000/01 1023/254/63      05 extended
11 S 000000063 014909382 1023/001/01 1023/254/63      83 Linux
12 x 025222050 004209030 1023/000/01 1023/254/63      05 extended
13 S 000000063 024098967 1023/001/01 1023/254/63      82 Linux swap
14 x 029431080 027712125 1023/000/01 1023/254/63      05 extended
15 S 000000063 027712062 1023/001/01 1023/254/63      07 NTFS
16 S 000000000 000000000 0000/000/00 0000/000/00      00 empty entry
17 P 000000000 000000000 0000/000/00 0000/000/00      00 empty entry
18 P 000000000 000000000 0000/000/00 0000/000/00      00 empty entry
1 020980827 sectors 10742183424 bytes
3 000032067 sectors 16418304 bytes
5 002104452 sectors 1077479424 bytes
7 004192902 sectors 2146765824 bytes
9 008401932 sectors 4301789184 bytes
11 010490382 sectors 5371075584 bytes
13 004208967 sectors 2154991104 bytes
15 027712062 sectors 14188575744 bytes

Log
Start: 04/17/07 10:46:06AM
Acquisition Date: 04/17/07 10:46:06AM
File Integrity: Completely Verified, 0 Errors
Acquisition Hash: bc39c3f7ee7a50e77b9bae65a5aeef7
Verify Hash: bc39c3f7ee7a50e77b9bae65a5aeef7
EnCase Version: 5.05f
Error Granularity: 64
Read Errors: 0
Missing Sector Errors: 0
CRC Errors: 0
Total Size: 40,000,000,000 bytes (37.3GB)
Settings: fill none
size cd
Write Block: 4 FastBloc IDE

Results:
<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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-02 Multifile image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
<tr>
<td>Test Case DA-06-ATA28 EnCase 5.05f</td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td></td>
</tr>
<tr>
<td>Analysis: Expected results achieved</td>
<td></td>
</tr>
</tbody>
</table>
Case Summary:
DA-06 Acquire a physical device using access interface AI to an image file.

Assertions:
AM-01 The tool uses access interface SRC-AI to access the digital source.
AM-02 The tool acquires digital source DS.
AM-03 The tool executes in execution environment XE.
AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
AM-06 All visible sectors are acquired from the digital source.
AM-08 All sectors acquired from the digital source are acquired accurately.
AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: slm
Test Host: joe
Test Date: Wed Apr 18 16:40:06 2007
Drives: src(4C) dst (none) other (fat32)

Source Setup:
src hash (SHA1): < 8FF620D2BEDCCAF8412EDAAD56C8554F872EFBF >
src hash (MD5): < D10F763B56D4CEBA2D1311C6F9F9FB382 >
390721968 total sectors (200049647616 bytes)
24320/254/63 (max cyl/hd values)
24321/255/63 (number of cyl/hd)
IDE disk: Model (WDC WD2000JB-00KFA0) serial # (WD-WMAMR1031111)
N Start LBA Length Start C/H/S End C/H/S boot Partition type
1 P 0000000063 390700737 0000/001/01 1023/254/63 Boot 07 NTFS
2 P 0000000000 0000000000 0000/000/00 0000/000/00 empty entry
3 P 0000000000 0000000000 0000/000/00 0000/000/00 empty entry
4 P 0000000000 0000000000 0000/000/00 0000/000/00 empty entry
1 390700737 sectors 200038777344 bytes

Log Highlights:
Actual Date:04/13/07 05:36:50PM
File Integrity:Completely Verified, 0 Errors
Acquisition Hash:d10f763b56d4ceba2d1311c6f9f9fb382
Verify Hash:d10f763b56d4ceba2d1311c6f9f9fb382
EnCase Version:5.05f
Error Granularity:64
Read Errors:0
Missing Sector Errors:0
CRC Errors:0
Total Size:200,049,647,616 bytes (186.3GB)
Total Sectors:390,721,968
Settings: fill none
size fat
Write Block: 4 FastBloc IDE

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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 Multi-file 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>
</tbody>
</table>
### Test Case DA-06-ATA48 EnCase 5.05f

| AO-24 Source is unchanged by acquisition | not checked |

**Analysis:** Expected results achieved
5.2.3 DA-06-FLOPPY

Test Case DA-06-FLOPPY EnCase 5.05f

<table>
<thead>
<tr>
<th>Case</th>
<th>DA-06 Acquire a physical device using access interface AI to an image file.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary:</td>
<td></td>
</tr>
<tr>
<td>Assertions:</td>
<td>AM-01 The tool uses access interface SRC-AI to access the digital source.</td>
</tr>
<tr>
<td>AM-02 The tool acquires digital source DS.</td>
<td></td>
</tr>
<tr>
<td>AM-03 The tool executes in execution environment XE.</td>
<td></td>
</tr>
<tr>
<td>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.</td>
<td></td>
</tr>
<tr>
<td>AM-06 All visible sectors are acquired from the digital source.</td>
<td></td>
</tr>
<tr>
<td>AM-08 All sectors acquired from the digital source are acquired accurately.</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.</td>
<td></td>
</tr>
<tr>
<td>AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.</td>
<td></td>
</tr>
</tbody>
</table>

Tester Name: slm
Test Host: joe
Test Date: Wed Apr 18 17:28:37 2007

Drives: src(floppy) dst (none) other (fat32)
Source Hash (SHA1): < e2863334ac7eaab7c8a0d62eb0d3b3af29f2c40 >
Source Hash (MD5): < 17f6a5925be2f38eedaf435ff8b6a6f4 >
Floppy disk

Log
Start: 04/18/07 06:26:27PM
Acquisition Hash: 17F6A5925BE2F38EEDAF435FF8B6A6F4
Total Capacity:1,457,664 bytes (1.4MB)
Total Clusters:2,847Unallocated:1,380,352 bytes (1.3MB)
OEM Version:MSDOS5.0Serial Number:AC00-86E5
Actual Date:04/18/07 06:26:27PM
File Integrity:Completely Verified, 0 Errors
Acquisition Hash:17f6a5925be2f38eedaf435ff8b6a6f4
Verify Hash:17f6a5925be2f38eedaf435ff8b6a6f4
EnCase Version:5.05f
Error Granularity:64
Read Errors:0
Missing Sector Errors:0
CRC Errors:0
Total Size:1,474,560 bytes (1.4MB)
Total Sectors:2,880
Settings: fill none
size cd
Write Block: none

Results:

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

Analysis: Expected results achieved
### 5.2.4 DA-06-FW

**Test Case DA-06-FW EnCase 5.05f**

**Case Summary:**
DA-06 Acquire a physical device using access interface AI to an image file.

**Assertions:**
- AM-01 The tool uses access interface SRC-AI to access the digital source.
- AM-02 The tool acquires digital source DS.
- AM-03 The tool executes in execution environment XE.
- AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
- AM-06 All visible sectors are acquired from the digital source.
- AM-08 All sectors acquired from the digital source are acquired accurately.
- AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
- AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
- AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
- AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

**Tester Name:** slm  
**Test Host:** joe  
**Test Date:** Wed Apr 18 16:50:26 2007  
**Drives:** src(01) dst (none) other (fat32)

### Source Setup

- **src hash (SHA1):** `<A48BB566506DC57C22DB68E2F723DA9AA8DF82B9>`
- **src hash (MD5):** `<F458F673894753FA6A0EC8B8EC63848E>`
- **Model (0BB-00JHC0)** serial # (WD-WMAMC74171)

<table>
<thead>
<tr>
<th>N</th>
<th>Start LBA</th>
<th>Length</th>
<th>Start C/H/S</th>
<th>End C/H/S</th>
<th>boot</th>
<th>Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>000000063</td>
<td>020980827</td>
<td>0000/001/01</td>
<td>1023/254/63</td>
<td>0C</td>
<td>Fat32X</td>
</tr>
<tr>
<td>2</td>
<td>020980890</td>
<td>057175335</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>0F</td>
<td>extended</td>
</tr>
<tr>
<td>3</td>
<td>000032130</td>
<td>02104515</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>01</td>
<td>Fat12</td>
</tr>
<tr>
<td>4</td>
<td>000032130</td>
<td>02104515</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>5</td>
<td>000032130</td>
<td>02104515</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>06</td>
<td>Fat16</td>
</tr>
<tr>
<td>6</td>
<td>002156645</td>
<td>004192902</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>7</td>
<td>000000063</td>
<td>04192902</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>16</td>
<td>other</td>
</tr>
<tr>
<td>8</td>
<td>006329610</td>
<td>008401955</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>9</td>
<td>000000063</td>
<td>08401932</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>0B</td>
<td>Fat32</td>
</tr>
<tr>
<td>10</td>
<td>014731605</td>
<td>01049445</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>11</td>
<td>000000063</td>
<td>01490382</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>03</td>
<td>Linux</td>
</tr>
<tr>
<td>12</td>
<td>025222050</td>
<td>04209867</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>13</td>
<td>000000063</td>
<td>025222050</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>08</td>
<td>Linux swap</td>
</tr>
<tr>
<td>14</td>
<td>029311910</td>
<td>027744255</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>15</td>
<td>000000063</td>
<td>027744192</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>07</td>
<td>NTFS</td>
</tr>
<tr>
<td>16</td>
<td>000000000</td>
<td>00000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>17</td>
<td>000000000</td>
<td>00000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>18</td>
<td>000000000</td>
<td>00000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
</tbody>
</table>

### Log

<table>
<thead>
<tr>
<th>Start</th>
<th>Acquisition Hash</th>
<th>Actual Date</th>
<th>File Integrity</th>
<th>Acquisition Hash</th>
<th>Verify Hash</th>
<th>EnCase Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/13/07</td>
<td>F458F673894753FA6A0EC8B8EC63848E</td>
<td>04/13/07</td>
<td>Completely Verified, 0 Errors</td>
<td>F458F673894753FA6A0EC8B8EC63848E</td>
<td>f458f673894753fa6a0ec8b8ec63848e</td>
<td>5.05f</td>
</tr>
<tr>
<td>04/13/07</td>
<td>0 Errors</td>
<td>04/13/07</td>
<td>Windows XP</td>
<td>f458f673894753fa6a0ec8b8ec63848e</td>
<td>f458f673894753fa6a0ec8b8ec63848e</td>
<td>5.05f</td>
</tr>
</tbody>
</table>

**Error Granularity:** 64

**Read Errors:** 0
Test Case DA-06-FW EnCase 5.05f

- Missing Sector Errors: 0
- CRC Errors: 0
- Total Size: 40,020,664,320 bytes (37.3GB)
- Total Sectors: 78,165,360
- Settings: fill none
- size cd
- Write Block: fastbloc FE 37

**Results:**

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

**Analysis:** Expected results achieved
5.2.5 DA-06-NCAB-ENBD

### Test Case DA-06-NCAB-ENBD EnCase 5.05f

**Case Summary:**
DA-06 Acquire a physical device using access interface AI to an image file.

**Assertions:**
- AM-01 The tool uses access interface SRC-AI to access the digital source.
- AM-02 The tool acquires digital source DS.
- AM-03 The tool executes in execution environment XE.
- AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
- AM-06 All visible sectors are acquired from the digital source.
- AM-08 All sectors acquired from the digital source are acquired accurately.
- AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
- AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
- AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
- AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

**Tester Name:** Joe
**Test Host:** mrmw
**Test Date:** Thu Dec 20 16:53:30 2007
**Drives:**
- src (43)
- dst (none)
- other (01-FU)

**Source Setup:**
- src hash (SHA1): < 888E2E7F7AD237DC7A732281DD93F25065E5871 >
- src hash (MD5): < BC39C3F7EE7A50E7E7B9B4E65A5AEEF7 >
- 78125000 total sectors (4000000000 bytes)
- Model (0BB-75JHC0) serial # (WD-WMAMC46588)

**Log Highlights:**
- Start: 12/20/07 05:44:14PM
- Acquisition Hash: BC39C3F7EE7A50E7E7B9B4E65A5AEEF7
- Actual Date: 12/20/07 05:44:14PM
- File Integrity: Completely Verified, 0 Errors
- Acquisition Hash: bC39C3F7EE7A50E7E7B9B4E65A5AEEF7
- EnCase Version: 5.05f
- Error Granularity: 64
- Read Errors: 0
### Test Case DA-06-NCAB-ENBD EnCase 5.05f

- Missing Sector Errors: 0
- CRC Errors: 0
- Total Size: 40,000,000,000 bytes (37.3GB)
- Total Sectors: 78,125,000
- Settings: size CD
  - fill none
  - Write Block: none

#### Results:

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

#### Analysis:

Expected results achieved
5.2.6 DA-06-NCAB-LINEN

**Test Case DA-06-NCAB-LINEN EnCase 5.05f**

**Case Summary:**
DA-06 Acquire a physical device using access interface AI to an image file.

**Assertions:**
- AM-01 The tool uses access interface SRC-AI to access the digital source.
- AM-02 The tool acquires digital source DS.
- AM-03 The tool executes in execution environment XE.
- AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
- AM-06 All visible sectors are acquired from the digital source.
- AM-08 All sectors acquired from the digital source are acquired accurately.
- AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
- AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
- AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
- AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

**Tester Name:** mrnw

**Test Host:** Freddy

**Test Date:** Thu Dec 20 18:16:08 2007

**Drives:**
[src(c1-cf)] dst (none) other (06-fu)

**Source Setup:**
- src hash (SHA256): <C7CF018222DF8D053615D6894266C7FA507C13F795AD3D23BB73C1590D80>
- src hash (SHA1): <5B8235170DF9F9FA3D7430CE08F897466D668A0B>
- src hash (MD5): <776DF8B4D2589621DEBCFS09EDC16D2B>
- 503,808 total sectors (257,946,966 bytes)

**Model (CF) serial #:**
- 1 P 778139098 114109631 0357/116/40 0357/032/45 Boot 72 other
- 2 P 16869522 1936028400 0288/115/43 0367/114/50 Boot 65 other
- 3 P 189981465 1936028192 0366/032/33 0357/032/43 Boot 79 other
- 4 P 2885681152 000055499 0372/097/50 0000/010/00 Boot 0D other

**Log Highlights:**
- Acquisition Hash: 776DF8B4D2589621DEBCF589EDC16D78
- Actual Date: 12/20/07 06:22:18PM
- File Integrity: Completely Verified, 0 Errors
- File Hash: fh:776df8b4d2589e21debcf589edc16d78
- Error Granularity: 64
- Read Errors: 0
- Missing Sector Errors: 0
- CRC Errors: 0
- Total Size: 257,949,696 bytes (246MB)
- Total Sectors: 503,808
- Settings: size CD, fill none
- Write Block: none

**Results:**

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM-01 Source acquired using interface AI.</td>
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<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>Test Case DA-06-NCAB-LINEN EnCase 5.05f</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td></td>
</tr>
<tr>
<td>AM-08 All sectors accurately acquired.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-01 Image file is complete and accurate.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-05 Multifile image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

Analysis: Expected results achieved
5.2.7 DA-06-PART

Test Case DA-06-PART EnCase 5.05f

Case Summary: DA-06 Acquire a physical device using access interface AI to an image file.

Assertions:
AM-01 The tool uses access interface SRC-AI to access the digital source.
AM-02 The tool acquires digital source DS.
AM-03 The tool executes in execution environment XE.
AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
AM-06 All visible sectors are acquired from the digital source.
AM-08 All sectors acquired from the digital source are acquired accurately.
AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: mrmw
Test Host: Frank
Test Date: Wed Jun 20 11:01:43 2007
Drives: src(24-FU2) dst (none) other (02-fU)

Source Setup:
src hash (SHA1): < A78EDB5E90298D0CDF199B4B62119F81208A252A >
src hash (MD5): < 90311DDF672B8CBA0869A46F4A455A7E >
39070080 total sectors (2000380960 bytes)
19076/063/32 (max cyl/hd values)
19077/064/32 (number of cyl/hd)
Model (ATCS04-0) serial # (CSH206D9D56E)
MD5 sectors 3907008-7814015 drive 24-fu2: 4392FA47D9ED9BE561E30F6E3CCC03D

Log Highlights:
Start: 06/20/07 11:24:04AM
Acquisition Hash: 90311DDF672B8CBA0869A46F4A455A7E
Start: 06/20/07 12:07:41PM
Start Sector: 3907008
Stop Sector: 7814015
Hash Value: 4392FA47D9ED9BE561E30F6E3CCC03D
Settings: fill none
cdWrite Block: tableau USB writeblocker 18

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM-01 Source acquired using interface AI.</td>
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<tr>
<td>AM-03 Execution environment is XE.</td>
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</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 Multi-file image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

Analysis: Expected results achieved
### 5.2.8 DA-06-SCSI

#### Test Case DA-06-SCSI EnCase 5.05f

<table>
<thead>
<tr>
<th>Case Summary:</th>
<th>DA-06 Acquire a physical device using access interface AI to an image file.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assertions:</td>
<td>AM-01 The tool uses access interface SRC-AI to access the digital source.</td>
</tr>
<tr>
<td></td>
<td>AM-02 The tool acquires digital source DS.</td>
</tr>
<tr>
<td></td>
<td>AM-03 The tool executes in execution environment XE.</td>
</tr>
<tr>
<td></td>
<td>AM-05 If image file creation is specified, the tool creates an image file on file system type FS.</td>
</tr>
<tr>
<td></td>
<td>AM-06 All visible sectors are acquired from the digital source.</td>
</tr>
<tr>
<td></td>
<td>AM-08 All sectors acquired from the digital source are acquired accurately.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tester Name:</th>
<th>mrmw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Host:</td>
<td>Frank</td>
</tr>
<tr>
<td>Test Date:</td>
<td>Thu Apr 12 09:26:34 2007</td>
</tr>
<tr>
<td>Drives:</td>
<td>src(2A) dst (none) other (IDE)</td>
</tr>
</tbody>
</table>

| Source Setup:     | src hash (SHA256): <AE8E839101661367D92803D5F5D408268635EFDBA05FEEA633B38C3D3919F5ABA > |
|                   | src hash (MD5): <91E0AC905F682E6F6E4E9835089B519 > |
|                   | 17783249 total sectors (910502488 bytes) |
| Model:  | QM39100TD-SCA  |
| serial #:  | (FCB=20-116711-06 HDAQM39100TD-SCA ) |
| Drive:  | N Start LBA Length Start C/H/S End C/H/S boot Partition type |
|         | 1 P 000000063 017751762 0000/001/01 1023/254/63 Boot 07NTFS |
|         | 2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry |
|         | 3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry |
|         | 4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry |
|         | 1 017751762 sectors 9088902144 bytes |

| Log Highlights: | Start: 04/12/07 01:42:32PM |
|                | Acquisition Hash: 91E0AC905F682E6F6E4E9835089B519 |
|                | Actual Date: 04/12/07 01:42:32PM |
|                | File Integrity: Completely Verified, 0 Errors |
|                | Acquisition Hash: 91E0AC905F682E6F6E4E9835089B519 |
|                | Verify Hash: 91E0AC905F682E6F6E4E9835089B519 |
|                | EnCase Version: 5.05f |
|                | System Version: Windows XP |
|                | Error Granularity: 64 |
|                | Read Errors: 0 |
|                | Missing Sector Errors: 0 |
|                | CRC Errors: 0 |
|                | Total Size: 9,105,023,488 bytes (8.5GB) |
|                | Total Sectors: 17,783,249 |
|                | Settings: size CD (640 MB) fill none block size 64 |

| Write Block: | FastBloc SE |

<table>
<thead>
<tr>
<th>Results:</th>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM-01</td>
<td>Source acquired using interface AI.</td>
<td>as expected</td>
</tr>
<tr>
<td>AM-02</td>
<td>Source is type DS.</td>
<td>as expected</td>
</tr>
<tr>
<td>AM-03</td>
<td>Execution environment is XE.</td>
<td>as expected</td>
</tr>
<tr>
<td>AM-05</td>
<td>An image is created on file system type FS.</td>
<td>as expected</td>
</tr>
<tr>
<td>AM-06</td>
<td>All visible sectors acquired.</td>
<td>as expected</td>
</tr>
<tr>
<td>AM-08</td>
<td>All sectors accurately acquired.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-01</td>
<td>Image file is complete and accurate.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-05</td>
<td>Multifile image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>Test Case DA-06-SCSI EnCase 5.05f</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AO-22</strong> Tool calculates hashes by block.</td>
<td>option not available</td>
<td></td>
</tr>
<tr>
<td><strong>AO-23</strong> Logged information is correct.</td>
<td>as expected</td>
<td></td>
</tr>
<tr>
<td><strong>AO-24</strong> Source is unchanged by acquisition.</td>
<td>not checked</td>
<td></td>
</tr>
</tbody>
</table>

**Analysis:** Expected results achieved
Test Case DA-06-USB EnCase 5.05f

Case Summary:
DA-06 Acquire a physical device using access interface AI to an image file.

Assertions:
AM-01 The tool uses access interface SRC-AI to access the digital source.
AM-02 The tool acquires digital source DS.
AM-03 The tool executes in execution environment XE.
AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
AM-06 All visible sectors are acquired from the digital source.
AM-08 All sectors acquired from the digital source are acquired accurately.
AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: mrmw
Test Host: Frank
Test Date: Fri Apr 6 08:17:56 2007

Drives:
src(01) dst (none) other (IDE)

Source Setup:
src hash (SHA1): < A4B8BB566506DC57CC22DB68E2F723DA9AA8DF82B9 >
src hash (MD5): < F458F673894753FA6A0EC8B8EC6384FE >
78165360 total sectors (40020664320 bytes)
Model (BB-00JHC0 ) serial # ( WD-WMAEC74171 )

Log Highlights:
Start: 04/06/07 12:38:27PM
Acquisition Hash: F458F673894753FA6A0EC8B8EC6384FE
Actual Date: 04/06/07 12:38:27PM
File Integrity: Completely Verified, 0 Errors
Acquisition Hash: F458F673894753FA6A0EC8B8EC6384FE
Verify Hash: f458f673894753fa6a0ec8b8ec6384fe
EnCase Version: 5.05f
Error Granularity: 64
Read Errors: 0
Test Case DA-06-USB EnCase 5.05f

<table>
<thead>
<tr>
<th>Missing Sector Errors: 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC Errors: 0</td>
</tr>
<tr>
<td>Total Size: 40,020,664,320 bytes (37.3GB)</td>
</tr>
<tr>
<td>Total Sectors: 78,165,360</td>
</tr>
<tr>
<td>Settings: size CD (640MB) fill none blocksize 64</td>
</tr>
<tr>
<td>Write Block: 37 WiebeTech Combo Dock</td>
</tr>
</tbody>
</table>

### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
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<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-03 Multifile image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

### Analysis:

Expected results achieved
5.2.10 DA-07-CF

Test Case DA-07-CF EnCase 5.05f

Case Summary:
DA-07 Acquire a digital source of type DS to an image file.

Assertions:
AM-01 The tool uses access interface SRC-AI to access the digital source.
AM-02 The tool acquires digital source DS.
AM-03 The tool executes in execution environment XE.
AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
AM-06 All visible sectors are acquired from the digital source.
AM-08 All sectors acquired from the digital source are acquired accurately.
AM-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: slm
Test Host: joe
Test Date: Tue Apr 3 15:09:00 2007

Drives: src(c1-cf) dst (none) other (ntfs)

Source Setup:
src hash (SHA256): <C7CF0218222DF80D5316511D6814266C7FA507C13F795AD3D32BB73C1590D80>
src hash (SHA1): <5B8235178DF99FA307430C080F8174665638A0B>
src hash (MD5): <776DF8B42589E21DEBCF589EDC16D78>
503808 total sectors (257949696 bytes)
Model (CF) serial # ()
N Start LBA Length Start C/H/S End C/H/S boot Partition type
1 778135908 1141509631 0357/116/40 0357/032/45 Boot 72 other
2 168689522 1936028240 0288/115/43 0367/114/50 Boot 65 other
3 1869881465 1936028192 0366/032/33 0357/032/43 Boot 79 other
4 2885681152 000055499 0372/097/50 0000/010/00 Boot 0D other
1 1141509631 sectors 584452931072 bytes
2 1936028240 sectors 991246458880 bytes
3 1936028192 sectors 991246434304 bytes
4 000055499 sectors 28415488 bytes

Log Highlights:
Start: 04/03/07 04:58:51PM
Acquisition Hash: 776DF8B42589E21DEBCF589EDC16D78
Actual Date: 04/03/07 04:58:51PM
File Integrity: Completely Verified, 0 Errors
Acquisition Hash: 776DF8B42589E21DEBCF589EDC16D78
Verify Hash: 776DF8B42589E21DEBCF589EDC16D78
EnCase Version: 5.05f
Error Granularity: 64
Read Errors: 0
Missing Sector Errors: 0
CRC Errors: 0
Total Size: 257,949,696 bytes (246MB)
Total Sectors: 503,808
Settings: Size cd
fill none
Write Block: 7 UltraBlock FCR

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM-01 Source acquired using interface AI.</td>
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</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>Test Case DA-07-CF EnCase 5.05f</td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td></td>
</tr>
<tr>
<td>AO-01 Image file is complete and accurate.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-05 Multifile image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

Analysis: Expected results achieved
5.2.11 DA-07-F12

Test Case DA-07-F12 EnCase 5.05f

Case Summary: DA-07 Acquire a digital source of type DS to an image file.

Assertions:
- AM-01 The tool uses access interface SRC-AI to access the digital source.
- AM-02 The tool acquires digital source DS.
- AM-03 The tool executes in execution environment XE.
- AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
- AM-06 All visible sectors are acquired from the digital source.
- AM-08 All sectors acquired from the digital source are acquired accurately.
- AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
- AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
- AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
- AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: mrmw
Test Host: Frank
Test Date: Wed Jun 20 14:14:50 2007
Drives: src(01) dst (none) other (02-fu)

Source Setup:
- src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 >
- src hash (MD5): < F458F673894753FA6A0EC8B9EC6384FE >
- 78165360 total sectors (40020664320 bytes)

Model (0BB-00JHC0) serial #: (WD-WMAMC74171)

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM-01 Source acquired using interface AI.</td>
<td>as expected</td>
</tr>
<tr>
<td>Test Case DA-07-F12 EnCase 5.05f</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>AM-02 Source is type DS.</td>
<td>as expected</td>
</tr>
<tr>
<td>AM-03 Execution environment is XE.</td>
<td>as expected</td>
</tr>
<tr>
<td>AM-05 An image is created on file system type FS.</td>
<td>as expected</td>
</tr>
<tr>
<td>AM-06 All visible sectors acquired.</td>
<td>as expected</td>
</tr>
<tr>
<td>AM-08 All sectors accurately acquired.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-01 Image file is complete and accurate.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-05 Multifile image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

Analysis: Expected results achieved
Test Case DA-07-F16 EnCase 5.05f

Case DA-07 Acquire a digital source of type DS to an image file.

Summary:

DA-07 The tool uses access interface SRC-AI to access the digital source.
AM-01 The tool uses access interface SRC-AI to access the digital source.
AM-02 The tool acquires digital source DS.
AM-03 The tool executes in execution environment XE.
AM-04 If image file creation is specified, the tool creates an image file on file system type FS.
AM-05 All visible sectors are acquired from the digital source.
AM-06 All sectors acquired from the digital source are acquired accurately.
AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: slm
Test Host: joe
Test Date: Fri Apr 20 10:05:29 2007

Drives:

<table>
<thead>
<tr>
<th>Drives</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>src(43)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dst (none)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>other (fat32)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source:

src hash (SHA1): < 88BE2F7FAD237DC7A732281DD93F325065E5871 >
src hash (MD5): < BC39CF7E7A50E77B9B5A5AEEF7 >
78125000 total sectors (4000000000 bytes)
Model (0BB-75JHC0) serial # (WD-WMAMC46588)

Partition Table:

<table>
<thead>
<tr>
<th>N</th>
<th>Start LBA</th>
<th>Length</th>
<th>Start C/H/S</th>
<th>End C/H/S</th>
<th>boot</th>
<th>Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P 000000063</td>
<td>020980827</td>
<td>0000/001/01</td>
<td>1023/254/63</td>
<td>OC</td>
<td>Fat32X</td>
</tr>
<tr>
<td>2</td>
<td>X 020980890</td>
<td>057143205</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>0F</td>
<td>extended</td>
</tr>
<tr>
<td>3</td>
<td>S 000000063</td>
<td>000032067</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>01</td>
<td>Fat12</td>
</tr>
<tr>
<td>4</td>
<td>X 000032130</td>
<td>02104515</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>5</td>
<td>S 000000063</td>
<td>02014452</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>06</td>
<td>Fat16</td>
</tr>
<tr>
<td>6</td>
<td>X 02135645</td>
<td>04192965</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>7</td>
<td>S 000000063</td>
<td>04192902</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>16</td>
<td>other</td>
</tr>
<tr>
<td>8</td>
<td>X 006329610</td>
<td>08401995</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>9</td>
<td>S 000000063</td>
<td>08401932</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>0B</td>
<td>Fat32</td>
</tr>
<tr>
<td>10</td>
<td>X 014731605</td>
<td>01049445</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>11</td>
<td>S 000000063</td>
<td>010490382</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>83</td>
<td>Linux</td>
</tr>
<tr>
<td>12</td>
<td>X 025222050</td>
<td>04209030</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>13</td>
<td>S 000000063</td>
<td>04209867</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>82</td>
<td>Linux swap</td>
</tr>
<tr>
<td>14</td>
<td>X 029431080</td>
<td>022712125</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>15</td>
<td>S 000000063</td>
<td>027712062</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>07</td>
<td>NTFS</td>
</tr>
<tr>
<td>16</td>
<td>S 000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>17</td>
<td>P 000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>18</td>
<td>P 000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>19</td>
<td>P 000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
</tbody>
</table>

1 020980827 sectors 10742183424 bytes
3 000032067 sectors 16418304 bytes
5 002104452 sectors 1077479423 bytes
7 008401932 sectors 2154991104 bytes
9 006329610 sectors 1077479423 bytes
11 014731605 sectors 1077479423 bytes
13 014731605 sectors 1077479423 bytes
15 025222050 sectors 1077479423 bytes
17 025222050 sectors 1077479423 bytes
25 025222050 sectors 1077479423 bytes
33 025222050 sectors 1077479423 bytes
43 025222050 sectors 1077479423 bytes

Log:

Start: 04/20/07 10:26:36AM
Acquisition Hash: 37E81FFB31C3CB8AA48B2237500908E
Total Capacity:1,077,313,536 bytes (1GB)
Total Clusters:32,877 Unallocated:1,076,953,088 bytes (1GB)
OEM Version:MSWIN4.0 Serial Number:CCCF-3DAD
Actual Date:04/20/07 10:26:36AM
File Integrity: Completely Verified, 0 Errors
Acquisition Hash: 37E81FFB31C3CB8AA48B2237500908E
Verify Hash: 37E81FFB31C3CB8AA48B2237500908E

Log Highlights:

Start: 04/20/07 10:26:36AM
Acquisition Hash: 37E81FFB31C3CB8AA48B2237500908E
Total Capacity:1,077,313,536 bytes (1GB)
Total Clusters:32,877 Unallocated:1,076,953,088 bytes (1GB)
OEM Version:MSWIN4.0 Serial Number:CCCF-3DAD
Actual Date:04/20/07 10:26:36AM
File Integrity: Completely Verified, 0 Errors
Acquisition Hash: 37E81FFB31C3CB8AA48B2237500908E
Verify Hash: 37E81FFB31C3CB8AA48B2237500908E
Test Case DA-07-F16 EnCase 5.05f

EnCase Version: 5.05f
Error Granularity: 64
Read Errors: 0
Missing Sector Errors: 0
CRC Errors: 0
Total Size: 1,077,479,424 bytes (1GB)
Total Sectors: 2,104,452
Settings: size fat
Write Block: 42 FastBloc LE

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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-02 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-03 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-04 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

Analysis: Expected results achieved
Case Summary: DA-07 Acquire a digital source of type DS to an image file.

Assertions:

AM-01 The tool uses access interface SRC-AI to access the digital source.
AM-02 The tool acquires digital source DS.
AM-03 The tool executes in execution environment XE.
AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
AM-06 All visible sectors are acquired from the digital source.
AM-08 All sectors acquired from the digital source are acquired accurately.
AM-09 If image file creation is specified, the tool creates an image file on file system type FS.
AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: slm
Test Host: joe
Test Date: Tue Apr 10 15:00:04 2007
Drives: src(01) dst (none) other (ntfs)

Source

Test Results for EnCase 5.05f June 2008
Test Case DA-07-F32 EnCase 5.05f

Verify Hash:bff7dc64c54339da2a9d7972c076b514
EnCase Version:5.05f
System Version:Windows XP
Error Granularity:64
Read Errors:0
Missing Sector Errors:0
CRC Errors:0
Total Size:4,301,789,184 bytes (4GB)
Total Sectors:8,401,932
Settings: fill none
size cd
Write Block: 44 FastBloc FE

Results:

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

Analysis: Expected results achieved
Test Case DA-07-F32X EnCase 5.05f

Case Summary: DA-07 Acquire a digital source of type DS to an image file.

Assertions:
AM-01 The tool uses access interface SRC-AI to access the digital source.
AM-02 The tool acquires digital source DS.
AM-03 The tool executes in execution environment XE.
AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
AM-06 All visible sectors are acquired from the digital source.
AM-08 All sectors acquired from the digital source are acquired accurately.
AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: slm
Test Host: joe
Test Date: Fri Apr 20 10:27:17 2007
Drives: src(43) dst (none) other (fat32)

Source
- src hash (SHA1): < 888E2E7F7AD237DC7A732281DD93F325065E5871 >
- src hash (MD5): < BC39C3F7EE7A50E77B99A1E65A5AAEF7 >

Setup
- 78125000 total sectors (40000000000 bytes)
- Model (0BB-75JHC0) serial # (WD-WMAC46588)

Log
- Start: 04/20/07 10:37:36AM
- Acquisition Hash: 5980CB0FA68E9862C65765DF50F00906
- Total Capacity:10,731,683,840 bytes (10GB)
- Total Clusters:1,310,020Unallocated:10,729,906,176 bytes (10GB)
- OEM Version:MSWIN4.1Serial Number:4445-13C7
- Actual Date:04/20/07 10:37:36AM
- File Integrity:Completely Verified, 0 Errors
- Acquisition Hash:5980cb0fa68e9862c65765df50f00906
- Verify Hash:5980cb0fa68e9862c65765df50f00906

Highlights:
- Start: 04/20/07 10:37:36AM
- Acquisition Hash: 5980CB0FA68E9862C65765DF50F00906
- Total Capacity:10,731,683,840 bytes (10GB)
- Total Clusters:1,310,020Unallocated:10,729,906,176 bytes (10GB)
- OEM Version:MSWIN4.1Serial Number:4445-13C7
- Actual Date:04/20/07 10:37:36AM
- File Integrity:Completely Verified, 0 Errors
- Acquisition Hash:5980cb0fa68e9862c65765df50f00906
- Verify Hash:5980cb0fa68e9862c65765df50f00906

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Test Case DA-07-F32X EnCase 5.05f

EnCase Version: 5.05f
Error Granularity: 64
Read Errors: 0
Missing Sector Errors: 0
CRC Errors: 0
Total Size: 10,742,183,424 bytes (10GB)
Total Sectors: 20,980,827
Settings: size fat
Write Block: 42 FastBloc LE

Results:

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

Analysis: Expected results achieved
5.2.15 DA-07-NTFS

Test Case DA-07-NTFS EnCase 5.05f

Case Summary:
DA-07 Acquire a digital source of type DS to an image file.

Assertions:
AM-01 The tool uses access interface SRC-AI to access the digital source.
AM-02 The tool acquires digital source DS.
AM-03 The tool executes in execution environment XE.
AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
AM-06 All visible sectors are acquired from the digital source.
AM-08 All sectors acquired from the digital source are acquired accurately.
AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: slm
Test Host: joe
Test Date: Tue Apr 10 10:23:53 2007

Drives:
src(01) dst (none) other (nfts)

Source Setup:
src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 >
src hash (MD5): < F458F67394753FA6A0ECB8E63848E >
78165360 total sectors (40020664320 bytes)
Model (0BB-00JHC0) serial # (WD-WMACM74171)

N Start LBA Length Start C/H/S End C/H/S boot Partition type
1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X
2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended
3 S 000000063 00000000 1023/001/01 1023/254/63 01 Fat12
4 x 000032130 020104515 1023/000/01 1023/254/63 05 extended
5 S 000000063 00104452 1023/001/01 1023/254/63 06 Fat16
6 x 001043645 00119296 1023/001/01 1023/254/63 05 extended
7 S 000000063 001192902 1023/001/01 1023/254/63 16 other
8 x 006392610 008401995 1023/001/01 1023/254/63 05 extended
9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32
10 x 014731605 010490445 1023/001/01 1023/254/63 05 extended
11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux
12 S 002522050 004209030 1023/001/01 1023/254/63 05 extended
13 S 000000063 004209487 1023/001/01 1023/254/63 82 Linux swap
14 x 029431080 027744255 1023/001/01 1023/254/63 05 extended
15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS
16 S 000000000 00000000 0000/000/00 0000/000/00 00 empty entry
17 P 000000000 00000000 0000/000/00 0000/000/00 00 empty entry
18 P 000000000 00000000 0000/000/00 0000/000/00 00 empty entry
1 020980827 sectors 10742183424 bytes
3 000032067 sectors 16418304 bytes
5 002104452 sectors 1077497244 bytes
7 004192902 sectors 214675824 bytes
9 008401932 sectors 4301789184 bytes
11 014731605 sectors 537105584 bytes
13 002522050 sectors 2154991104 bytes
15 027744192 sectors 14205026304 bytes
01NTFS-md5 14205026303 92B72B30E8B80FFFABAC660FA1590D49
01NTFS-sha1 14205026303 0FBA4C36295CB9622CD815577429C3A58B8C4D09
01NTFS-sha256 14205026303 65FCD1E8166325E5EB74255B2A981B6F1C9D6259AF6A0B51369101986A7ABC09

Log Highlights:
Start: 04/10/07 11:22:50AM
Acquisition Hash: 494A6ED8A827AD9B5403E0CC89379956
Total Capacity: 14,050,222,208 bytes (13.2GB)
Total Unallocated: 14,050,222,208 bytes (13.2GB)
Actual Date: 04/10/07 11:22:50AM
Test Case DA-07-NTFS EnCase 5.05f

File Integrity: Completely Verified, 0 Errors
Acquisition Hash: 494a6ed8a827ad9b5403e0ccc89379956
Verify Hash: 494a6ed8a827ad9b5403e0ccc89379956
EnCase Version: 5.05f
System Version: Windows XP
Error Granularity: 64
Read Errors: 0
Missing Sector Errors: 0
CRC Errors: 0
Total Size: 14,205,025,792 bytes (13.2GB)
Total Sectors: 27,744,191
Settings: fill none
size cd
Write Block: 44 FastBloc FE

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>one sector missed</td>
</tr>
<tr>
<td>AM-08 All sectors accurately acquired.</td>
<td>some sectors differ</td>
</tr>
<tr>
<td>AO-01 Image file is complete and accurate.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-05 Multifile image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

Analysis: Expected results not achieved
Case: DA-07 Acquire a digital source of type DS to an image file.

Summary:

Assertions:

AM-01 The tool uses access interface SRC-AI to access the digital source.
AM-02 The tool acquires digital source DS.
AM-03 The tool executes in execution environment XE.
AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
AM-06 All visible sectors are acquired from the digital source.
AM-08 All sectors acquired from the digital source are acquired accurately.
AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: slm
Test Host: joe
Test Date: Fri Apr 20 17:05:01 2007
Drives: src(d5-thumb) dst (none) other (fat32)

Source

src hash (SHA1): < D68520EF74A336E49DCCF83815B7B08FDCE3B38A >
src hash (MD5): < C843593624B2B3B878556D8760B19954 >
505856 total sectors (258998272 bytes)
Model (usb2.0Flash Disk) serial #: ()
N Start LBA Length. Start C/H/S End C/H/S boot Partition type
1 P 778135908 1141509631 357/116/40 357/032/45 Boot 72 other
2 P 16869522 1936028240 0298/115/43 0367/114/50 Boot 65 other
3 P 1936028192 0366/032/33 0357/032/45 Boot 79 other
4 P 2885681152 000055499 0372/097/50 0000/010/00 Boot 0D other
1 1141509631 sectors 584452872 bytes
2 1936028240 sectors 991246458880 bytes
3 1936028192 sectors 991246434304 bytes
4 000055499 sectors 28415488 bytes

Log

Highlights:

Start: 04/20/07 05:54:50PM
Acquisition Hash: C843593624B2B3B878556D8760B19954
Total Capacity:257,970,176 bytes (246MB)
Total Clusters:112,962Unallocated:257,517,568 bytes (245.6MB)
OEM Version:MSDOS5.0Serial Number:5C65-70D0
Actual Date:04/20/07 05:54:50PM
File Integrity:Completely Verified, 0 Errors
Acquisition Hash: c843593624b2b3b878556d8760b19954
Verify Hash: c843593624b2b3b878556d8760b19954
EnCase Version:5.05f
System Version: Windows XP
Error Granularity:64
Read Errors: 0
Missing Sector Errors: 0
CRC Errors: 0
Total Size: 258,990,272 bytes (247MB)
Total Sectors: 505,856
Settings: fill none

Size CWrite Block: 18 Tableau Forensic USB Bridge

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM-01 Source acquired using interface AI.</td>
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<tr>
<td>AM-02 Source is type DS.</td>
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</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>
</tbody>
</table>
### Test Case DA-07-THUMB EnCase 5.05f

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM-08 All sectors accurately acquired.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-01 Image file is complete and accurate.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-05 Multifile image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

**Analysis:** Expected results achieved
5.2.17 DA-08-ATA28

Test Case DA-08-ATA28 EnCase 5.05f

Case Summary: DA-08 Acquire a physical drive with hidden sectors to an image file.

Assertions:
- **AM-01** The tool uses access interface SRC-AI to access the digital source.
- **AM-02** The tool acquires digital source DS.
- **AM-03** The tool executes in execution environment XE.
- **AM-05** If image file creation is specified, the tool creates an image file on file system type FS.
- **AM-06** All visible sectors are acquired from the digital source.
- **AM-07** All hidden sectors are acquired from the digital source.
- **AM-08** All sectors acquired from the digital source are acquired accurately.
- **AO-01** If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
- **AO-05** If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
- **AO-22** If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
- **AO-23** If the tool logs any log significant information, the information is accurately recorded in the log file.
- **AO-24** If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: mrmw

Test Host: Freddy

Test Date: Fri Aug 31 15:15:21 2007

Drives: src(42) dst (none) other (04-FU)

Source Setup:
- src hash (SHA1): < 5A75399023056E0EB905082B35F8FA1DB049229 >
- src hash (MD5): < F4B9AAB24554EEEB2A962BDA554A9252 >
- 78165360 total sectors (40020664320 bytes)
- 65534/015/63 (max cyl/hd values)
- 65535/016/63 (number of cyl/hd)
- IDE disk: Model (WDC WD400JB-00JJC0) serial # (WD-WCAMA3958512)

<table>
<thead>
<tr>
<th>N</th>
<th>Start LBA</th>
<th>Length</th>
<th>Start C/H/S</th>
<th>End C/H/S</th>
<th>boot</th>
<th>Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P 00000063</td>
<td>070348572</td>
<td>0000/001/01</td>
<td>1023/254/63</td>
<td>Boot</td>
<td>07 NTFS</td>
</tr>
<tr>
<td>2</td>
<td>P 00000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>3</td>
<td>P 00000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>4</td>
<td>P 00000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
</tbody>
</table>

1 070348572 sectors 36018468864 bytes

HPA created

BIOS, XBIOS and Direct disk geometry Reporter (BXDR)

BXDR 128 /S70000000 /P /fbxdrlag.txt

Setting Maximum Addressable Sector to 70000000

MAS now set to 70000000

Hashes with HPA in place

md5:9BF3C3DEADE47056A1DDC073C5F6B2E2

sha1:D76F909482B00767B62C295CADE2E202F92E61CD2E

Log Highlights:

Start: 08/31/07 04:42:19PM
Acquisition Hash: F4B9AAB24554EEEB2A962BDA554A9252
Start: 08/31/07 05:05:29PM
Actual Date:08/31/07 04:42:19PM
File Integrity:Completely Verified, 0 Errors
Acquisition Hash:f4b9aab24554eebe2a962bda554a9252
Verify Hash:f4d9a9ab24554eebe2a962bda554a9252
EnCase Version:5.05f
Error Granularity:64
Read Errors:0
Missing Sector Errors:0
CRC Errors:0
Total Size:40,020,664,320 bytes (37.3GB)
Total Sectors:78,165,360

Rehash of Source SHA1: 5A75399023056E0EB905082B35F8FA1DB049229
Settings: size CD (640 MB)
### Test Case DA-08-ATA28 EnCase 5.05f

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>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>
</tbody>
</table>

### Analysis:
Expected results achieved
5.2.18 DA-08-ATA48

Test Case DA-08-ATA48 EnCase 5.05f

Case Summary:
DA-08 Acquire a physical drive with hidden sectors to an image file.

Assertions:
- AM-01 The tool uses access interface SRC-AI to access the digital source.
- AM-02 The tool acquires digital source DS.
- AM-03 The tool executes in execution environment XE.
- AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
- AM-06 All visible sectors are acquired from the digital source.
- AM-07 All hidden sectors are acquired from the digital source.
- AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
- AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
- AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
- AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: mrmw
Test Host: Freddy
Test Date: Fri Aug 31 13:52:37 2007
Drives: src(4B) dst (none) other (01-FU)

Source Setup:
- src hash (SHA1): < F409920836FED76DB60DEEEF467A6DED5B48E >
- src hash (MD5): < B5641B5A594912B4D60518304B1DE698 >
- 390721968 total sectors (200049647616 bytes)
- 24320/254/63 (max cyl/hd values)
- 24321/255/63 (number of cyl/hd)
- IDE disk: Model (WDC WD2000JB-00GVC0) serial # (WD-WCAL78252964)
- Start LBA Length Start C/H/S End C/H/S boot Partition type
  1 P 000000063 351646722 0000/001/01 1023/254/63 Boot 07 NTFS
  2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
  3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
  4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
- 1 351646722 sectors 180043121664 bytes
- HPA created
- BIOS, XBIOS and Direct disk geometry Reporter (BXDR)
- BXDR 128 /S351000000 /P /fHPA.TXT
- Setting Maximum Addressable Sector to 351000000
- MAS now set to 351000000
- Hashes with HPA in place
  - md5:6BAFEFC000470C126434D933429C879B
  - sha1:2D50DB82CD3DA90A6E5BF13BF240808C40998A1

Log Highlights:
- Start: 08/31/07 02:36:12PM
- Acquisition Hash: B5641B5A594912B4D60518304B1DE698
- Total Capacity:180,043,120,640 bytes (167.7GB)
- Total Clusters:43,955,840 Unallocated:177,459,097,600 bytes (165.3GB)
- Rehash of Source SHA1: F409920836FED76DB60DEEEF467A6DED5B48E
- Settings: size CD (640 MB)
  - fill none
  - Write Block: FastBloc SE

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM-01 Source acquired using interface AI.</td>
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<tr>
<td>AM-03 Execution environment is XE.</td>
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</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>as expected</td>
</tr>
<tr>
<td>Test Case DA-08-ATA48 EnCase 5.05f</td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td></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>
</tbody>
</table>

Analysis: Expected results achieved
### Test Case DA-08-DCO

**EnCase 5.05f**

**Case Summary:**
DA-08 Acquire a physical drive with hidden sectors to an image file.

**Assertions:**
- AM-01 The tool uses access interface SRC-AI to access the digital source.
- AM-02 The tool acquires digital source DS.
- AM-03 The tool executes in execution environment XE.
- AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
- AM-06 All visible sectors are acquired from the digital source.
- AM-07 All hidden sectors are acquired from the digital source.
- AM-08 All sectors acquired from the digital source are acquired accurately.
- AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
- AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
- AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
- AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

#### Test Host:
Frank

**Test Date:** Fri Aug 31 16:29:51 2007

**Drives:**
- src(92) dst (none) other (04-FU)

**Source Setup:**
- 58633344 total sectors (3002072128 bytes)
- 58167/015/63 (max cyl/hd values)
- 58168/016/63 (number of cyl/hd)
- IDE disk: Model (WDC WD300BB-00CAA0) serial # (WD-WMA8H2140350)
- N Start LBA Length Start C/H/S End C/H/S boot Partition type
  1 P 000000063 058605057 000/001/01 1023/254/63 Boot 07 NTFS
  2 P 000000000 000000000 000/000/00 000/000/00 00 empty entry
  3 P 000000000 000000000 000/000/00 000/000/00 00 empty entry
  4 P 000000000 000000000 000/000/00 000/000/00 00 empty entry
- 1 058605057 sectors 3000578934 bytes

#### Log Highlights:
- Comparison of original to clone Drive
- Sectors compared: 58633344
- Sectors match: 58633344
- Sectors differ: 0
- Bytes differ: 0
- Diffs range
  - 0 source read errors, 0 destination read errors

**Actual Date:** 08/31/07 05:55:36PM

**File Integrity:** Completely Verified, 0 Errors

**Finance:** e095dd1bd0b0dd6e603153a3fe1a2f3e

**Verify Hash:** e095dd1bd0b0dd6e603153a3fe1a2f3e

**EnCase Version:** 5.05f

**System Version:** Windows 2003 Server

**Error Granularity:** 64

**Read Errors:** 0

**Missing Sector Errors:** 0

**CRC Errors:** 0

**Total Size:** 30,020,272,128 bytes (28GB)

**Total Sectors:** 58,633,344

**Rehash of Source SHA1:** 63E6F7BD3040A8ADA2CF8FB66A805B76DF10481

**Settings:** size CD (640 MB)
A template for filling and analysis:

### Test Case DA-08-DCO EnCase 5.05f

<table>
<thead>
<tr>
<th>Write Block: FastBloc SE</th>
</tr>
</thead>
</table>

#### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
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<tr>
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<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>
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</tr>
<tr>
<td>AM-07 All hidden sectors acquired.</td>
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</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>
</tbody>
</table>

#### Analysis: Expected results achieved
Test Case DA-09-01 EnCase 5.05f

Case Summary:
DA-09 Acquire a digital source that has at least one faulty data sector.

Assertions:
AM-01 The tool uses access interface SRC-AI to access the digital source.
AM-02 The tool acquires digital source DS.
AM-03 The tool executes in execution environment XE.
AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
AM-06 All visible sectors are acquired from the digital source.
AM-08 All sectors acquired from the digital source are acquired accurately.
AM-09 If unresolved errors occur while reading from the selected digital source, the tool notifies the user of the error type and location within the digital source.
AM-10 If unresolved errors occur while reading from the selected digital source, the tool uses a benign fill in the destination object in place of the inaccessible data.
AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: mrmw
Test Host: Joe
Test Date: Thu May 17 10:32:17 2007
Drives: src(CPR1) dst (28-IDE) other (02-FU)

Source Setup:
No before hash for CPR1 120103200 total sectors (61492838400 bytes)
Drive with known bad sectors
Vendor: Maxtor  Model: DiamondMax Plus 9
Known Bad Sector List for ED-CPR-BAD-1
Manufacturer: Maxtor
Model: 6Y060L0 DiamondMax Plus 9
Serial Number: Y27KR6CE
Capacity: 60GB
Interface: PATA
54 faulty sectors
10069095, 10069911, 12023808, 18652594, 18656041, 18665857, 18660303, 18661119, 19746716-19746717, 22233904, 23098370, 23383001, 24104266-24102467, 24104250, 24106656, 24107458, 28959971-28959972
18652594, 18656041, 18656857, 18660303, 18661119, 19746716-19746717, 22233904, 23098370, 23383001, 24104266-24102467, 24104250, 24106656, 24107458, 28959971-28959972
 AO-08 All sectors acquired from the digital source are acquired accurately.
 AO-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.
 AO-10 If unresolved errors occur while reading from the selected digital source, the tool uses a benign fill in the destination object in place of the inaccessible data.
 AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
 AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
 AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
 AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
 AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Log Highlights:
Destination setup
488597168 sectors wiped with 28

Comparison of original to clone Drive
Sectors compared: 120103200
Sectors match: 12009915
Sectors differ: 54
Bytes differ: 27594
Diffs range 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, 87180606, 87856313, 8856922, 97191260-97191261, 100093150-100093151, 103861021, 109706975-109706976, 110347947, 110350122-110350123, 115664758, 115835518.
Test Case DA-09-01 EnCase 5.05f

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

Source (120103200) has 368293968 fewer sectors than destination (488397168)

Zero fill: 0
Src Byte fill (ED): 0
Dst Byte fill (28): 368293968
Other fill: 0
Other no fill: 0
Zero fill range:
Src fill range:
Dst fill range: 120103200-488397167
Other fill range:
Other not filled range:
0 source read errors, 0 destination read errors

Start: 05/17/07 11:47:54AM
Acquisition Hash: EF3E63C324522760C838F2A93B7180D3
Actual Date: 05/17/07 11:47:54AM
EnCase Version: 5.05f
System Version: Windows XP
Error Granularity: 1
Read Errors: 44
Missing Sector Errors: 0
CRC Errors: 0
Total Size: 61,493,838,400 bytes (57.3GB)
Total Sectors: 120,103,200
Read Errors: 44
Missing Sector Errors: 0
CRC Errors: 0
Compression: Good
Read Errors

Start Sector Sectors

10,069,911 1
12,023,808 1
18,652,594 1
18,656,041 1
18,656,857 1
18,660,303 1
18,661,119 1
19,746,716 2
22,233,904 1
23,098,370 1
23,383,001 1
24,102,466 2
24,104,250 1
24,106,656 1
24,107,458 1
28,959,971 2
41,825,791 1
41,828,995 1
52,654,580 1
52,655,318 1
60,522,984 1
68,643,842 2
69,973,290 1
72,734,626 1
72,715,293 1
82,148,809 2
83,810,525 1
85,310,861 1
85,313,430 1
85,314,038 2
86,321,211 1
86,323,780 1
87,186,066 1
Test Case DA-09-01 EnCase 5.05f

87,856,313  1
87,856,922  1
97,191,260  2
100,093,150  2
103,861,021  1
109,706,975  2
110,347,947  1
110,350,122  2
115,664,758  1
115,835,518  1

Total Size:  61,492,838,400 bytes (57.3GB)
Total Sectors:  120,103,200

Cannot read the partition table

2 different run lengths observed in 44 runs
34 runs of length 1
10 runs of length 2
54 sectors differ
54 zero filled and 0 varying non-zero filled
Settings: fill none size cd
Write Block: fastbloc FE 9

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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 sectors accurately acquired.</td>
<td>as expected</td>
</tr>
<tr>
<td>AM-09 Error logged.</td>
<td>as expected</td>
</tr>
<tr>
<td>AM-10 Benign fill replaces inaccessible sectors.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-01 Image file is complete and accurate.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-05 Multifile image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

Analysis: Expected results achieved
## Test Case DA-09-02 EnCase 5.05f

### Case Summary:
DA-09 Acquire a digital source that has at least one faulty data sector. **

### Assertions:
- **AM-01** The tool uses access interface SRC-AI to access the digital source.
- **AM-02** The tool acquires digital source DS.
- **AM-03** The tool executes in execution environment XE.
- **AM-05** If image file creation is specified, the tool creates an image file on file system type FS.
- **AM-06** All visible sectors are acquired from the digital source.
- **AM-08** All sectors acquired from the digital source are acquired accurately.
- **AM-09** If unresolved errors occur while reading from the selected digital source, the tool notifies the user of the error type and location within the digital source.
- **AM-10** If unresolved errors occur while reading from the selected digital source, the tool uses a benign fill in the destination object in place of the inaccessible data.
- **AO-01** If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
- **AO-05** If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
- **AO-22** If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
- **AO-23** If the tool logs any log significant information, the information is accurately recorded in the log file.
- **AO-24** If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

### Tester
- **Name:** mmrw
- **Test Host:** Joe
- **Test Date:** Fri May 18 10:22:33 2007
- **Drives:** src(CPR1) dst (21) other (01-fu)

### Source Setup:
- No before hash for CPR1 120103200 total sectors (61492838400 bytes)
- Drive with known bad sectors
- Vendor: Maxtor  Model: DiamondMax Plus 9
- Known Bad Sector List for ED-CPR-BAD-1
- Manufacturer: Maxtor
- Model: 6Y060L0 DiamondMax Plus 9
- Serial Number: Y27KR6CE
- Capacity: 60GB
- Interface: PATA
- 54 faulty sectors
  - 10069095, 10069911, 12023808, 18652594, 18656041, 18665857, 18660303, 18661119, 19746716-19746717, 22239304, 23098370, 23383001, 24102466-24102467, 24104250, 24106656, 24107458, 28959971-28959972, 41828995, 52654580, 52655318, 60522984, 68643842-68643843, 69973290, 72174626, 72175293, 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:
- Destination setup
- 312581808 sectors wiped with 52
- Comparision of original to clone Drive
- Sectors compared: 120103200
- Sectors match: 120103106
- Sectors differ: 94
- Bytes differ: 48034
Test Case DA-09-02 EnCase 5.05f


Source (120103200) has 75709872 fewer sectors than destination (195813072)

Zero fill: 0
Src Byte fill (ED): 0
Dat Byte fill (21): 75709872
Other fill: 0
Other no fill: 0

Zero fill range:
Src fill range:
Dat fill range: 120103200-195813071
Other fill range:
Other not filled range: 0 source read errors, 0 destination read errors

Actual Date: 05/18/07 03:01:15PM
File Integrity: Completely Verified, 0 Errors
Acquisition Hash: f6d2f0da8220ec8e147e5c9345836f95
Verify Hash: f6d2f0da8220ec8e147e5c9345836f95
EnCase Version: 5.05f
Error Granularity: 2
Read Errors: 44
Missing Sector Errors: 0
CRC Errors: 0
Total Size: 61,492,838,400 bytes (57.3GB)
Total Sectors: 120,103,200
Read Errors: 44
Missing Sector Errors: 0
CRC Errors: 0
Compression: Good
Read Errors
Start Sector Sectors
10,069,094 2
10,069,910 2
12,023,808 2
18,652,594 2
18,656,040 2
18,656,856 2
18,660,302 2
18,661,118 2
19,746,716 2
22,233,904 2
23,098,370 2
23,383,000 2
24,102,466 2
24,104,250 2
24,106,656 2
24,107,458 2
28,959,970 4
41,825,790 2
41,828,994 2
52,654,580 2
52,655,318 2
60,522,984 2
68,643,842 2
69,973,290 2
72,714,626 2
72,715,292 2
82,148,808 4
83,810,524 2
85,310,860 2
## Test Case DA-09-02 EnCase 5.05f

85,313,430 2  
85,314,038 2  
86,321,210 2  
86,323,780 2  
87,186,066 2  
87,856,312 2  
87,856,922 2  
97,191,260 2  
100,093,150 2  
103,861,020 2  
109,706,974 4  
110,347,946 2  
110,350,122 2  
115,664,758 2  
115,835,518 2  

2 different run lengths observed in 44 runs  
41 runs of length 2  
3 runs of length 4  
94 sectors differ  
94 zero filled and 0 varying non-zero filled  
Settings: fill none size cd  
Write Block: none

### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>some sectors differ</td>
</tr>
<tr>
<td>AM-09 Error logged.</td>
<td>as expected</td>
</tr>
<tr>
<td>AM-10 Benign fill replaces inaccessible sectors.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-01 Image file is complete and accurate.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-05 Multifile image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

### Analysis:  
Expected results not achieved
Case Summary: DA-09 Acquire a digital source that has at least one faulty data sector.

Assertions:
- AM-01 The tool uses access interface SRC-AI to access the digital source.
- AM-02 The tool acquires digital source DS.
- AM-03 The tool executes in execution environment XE.
- AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
- AM-06 All visible sectors are acquired from the digital source.
- AM-08 All sectors acquired from the digital source are acquired accurately.
- AM-09 If unresolved errors occur while reading from the selected digital source, the tool notifies the user of the error type and location within the digital source.
- AM-10 If unresolved errors occur while reading from the selected digital source, the tool uses a benign fill in the destination object in place of the inaccessible data.
- AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
- AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
- AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
- AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: mrmw
Test Host: Joe
Test Date: Fri May 18 09:11:03 2007
Drives: src(CPR1) dst (52) other (02-fu)

Source Setup: No before hash for CPR1 120103200 total sectors (61492838400 bytes)
- Drive with known bad sectors
- Vendor: Maxtor Model: DiamondMax Plus 9
- Known Bad Sector List for ED-CPR-BAD-1
  - Manufacturer: Maxtor
  - Model: 6Y060L0 DiamondMax Plus 9
  - Serial Number: Y27KR6CE
  - Capacity: 60GB
  - Interface: PATA

- 54 faulty sectors
  - 10069095, 10069911, 12023808, 18652594, 18656041, 18660303, 18661119, 19746716-19746717, 22239304, 23098370, 23383001, 24102466-24102467, 24102450, 24106656, 24107458, 28959971-28959972, 41825791, 41828995, 52654580, 52655318, 60522984, 68643842-68643843, 69973290, 72714626, 72715293, 82148809, 82148810, 83810525, 85310861, 85313430, 85314038-85314039, 86321211, 86323770, 87186066, 87856313, 87856922, 97191260-97191261, 10093150-10093151, 103861021, 109706975-109706976, 110347947, 110350122-110350123, 115664758, 115835518

Log Highlights: Destination setup
- 312581808 sectors wiped with 52
- Comparision of original to clone Drive
- Sectors compared: 120103200
- Sectors match: 120102480
- Sectors differ: 720
- Bytes differ: 367920
Test Case DA-09-16 EnCase 5.05f

24107456-24107471, 28959968-28959983, 41825776-41825791,
41828992-41830007, 60522976-60522991, 68643840-68643855, 69973280-69973295,
72714624-72714639, 72715280-72715295, 82148800-82148815,
83810512-83810527, 85310848-85310863, 85313424-85313439,
85314032-85314047, 86321200-86321215, 86323776-86323791,
87186064-87186079, 87856304-87856319, 87856912-87856927,
97191248-97191263, 100093136-100093151, 103861008-103861023,
109706560-109710755, 110347936-110347951, 110350112-110350127,
115664752-115664767, 115835504-115835519

Source (120103200) has 192478608 fewer sectors than destination (312581808)
Zero fill: 0
Src Byte fill (ED): 0
Dst Byte fill (52): 192478608
Other fill: 0
Other no fill: 0
Zero fill range:
Src fill range: 120103200-312581807
Dst fill range: 120103200-312581807
Other fill range:
Other not filled range:
0 source read errors, 0 destination read errors

Start: 05/18/07 10:29:11AM
Acquisition Hash: 474E17967F4D9CCC5A643A21F4907F17
Actual Date: 05/18/07 10:29:11AM
File Integrity: Completely Verified, 0 Errors
Acquisition Hash: 474e17967f4d9ccc5a643a21f4907f17
Verify Hash: 474e17967f4d9ccc5a643a21f4907f17
EnCase Version: 5.05f
Error Granularity: 16
Read Errors: 44
Missing Sector Errors: 0
CRC Errors: 0
Total Size: 61,492,838,400 bytes (57.3GB)
Total Sectors: 120,103,200
Read Errors: 44
Missing Sector Errors: 0
CRC Errors: 0
Compression: Good
Read Errors

Start Sector Sectors
10,069,088 16
10,069,904 16
12,023,808 16
18,652,592 16
18,656,032 16
18,656,848 16
18,660,288 16
18,661,104 16
19,746,704 16
22,233,904 16
23,098,368 16
23,382,992 16
24,102,464 16
24,104,240 16
24,106,568 16
24,107,456 16
28,959,968 16
41,825,776 16
41,828,992 16
52,654,576 16
52,655,312 16
60,522,976 16
68,643,840 16
69,973,280 16
72,714,624 16
72,715,280 16
82,148,800 16
Test Case DA-09-16 EnCase 5.05f

83,810,512 16
85,310,848 16
85,313,424 16
85,314,032 16
86,321,200 16
86,323,776 16
87,186,064 16
87,856,304 16
87,856,912 16
97,191,248 16
100,093,136 16
103,861,008 16
109,706,960 32
110,347,936 16
110,350,112 16
115,664,752 16
115,835,504 16

2 different run lengths observed in 44 runs
43 runs of length 16
1 runs of length 32
720 sectors differ
720 zero filled and 0 varying non-zero filled
Settings: fill none size cd
Write Block: 37 WiebeTech ComboDock

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM-01 Source acquired using interface AI.</td>
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</tr>
<tr>
<td>AM-03 Execution environment is XR.</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>some sectors differ</td>
</tr>
<tr>
<td>AM-09 Error logged.</td>
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</tr>
<tr>
<td>AM-10 Benign fill replaces inaccessible sectors.</td>
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</tr>
<tr>
<td>AO-01 Image file is complete and accurate.</td>
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</tr>
<tr>
<td>AO-05 Multifile image created.</td>
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</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

Analysis: Expected results not achieved
## Test Case DA-09-64

### Summary:
DA-09 Acquire a digital source that has at least one faulty data sector.

### Assertions:
- **AM-01** The tool uses access interface SRC-AI to access the digital source.
- **AM-02** The tool acquires digital source DS.
- **AM-03** The tool executes in execution environment XE.
- **AM-05** If image file creation is specified, the tool creates an image file on file system type FS.
- **AM-06** All visible sectors are acquired from the digital source.
- **AM-08** All sectors acquired from the digital source are acquired accurately.
- **AM-09** If unresolved errors occur while reading from the selected digital source, the tool notifies the user of the error type and location within the digital source.
- **AM-10** If unresolved errors occur while reading from the selected digital source, the tool uses a benign fill in the destination object in place of the inaccessible data.
- **AO-01** If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
- **AO-05** If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
- **AO-22** If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
- **AO-23** If the tool logs any log significant information, the information is accurately recorded in the log file.
- **AO-24** If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

### Source Setup:
- No before hash for CPR1 120103200 total sectors (61492838400 bytes)
- Drive with known bad sectors
  - Vendor: Maxtor
  - Model: DiamondMax Plus 9
- Known Bad Sector List for ED-CPR-BAD-1
  - Manufacturer: Maxtor
  - Model: 6Y060L0 DiamondMax Plus 9
  - Serial Number: Y27KR6CE
  - Capacity: 60GB
  - Interface: PATA
- 54 faulty sectors
  - 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, 86312112, 86323780, 87186066, 87856313, 87856922, 97191260-97191261, 100093150-100093151, 103861021, 109706975-109706976, 110347947, 110350122-110350123, 115664758, 115835518

### Log Highlights:
- Destination setup
- No before hash for CPR1 120103200 total sectors (61492838400 bytes)
- Drive with known bad sectors
- Vendor: Maxtor
  - Model: DiamondMax Plus 9
- Known Bad Sector List for ED-CPR-BAD-1
  - Manufacturer: Maxtor
  - Model: 6Y060L0 DiamondMax Plus 9
  - Serial Number: Y27KR6CE
  - Capacity: 60GB
  - Interface: PATA
- 54 faulty sectors
  - 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, 86312112, 86323780, 87186066, 87856313, 87856922, 97191260-97191261, 100093150-100093151, 103861021, 109706975-109706976, 110347947, 110350122-110350123, 115664758, 115835518

---

**Test Results for EnCase 5.05f June 2008**
<table>
<thead>
<tr>
<th>Source (120103200)</th>
<th>has 75709872 fewer sectors than destination (195813072)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero fill:</td>
<td>0</td>
</tr>
<tr>
<td>Src Byte fill (ED):</td>
<td>0</td>
</tr>
<tr>
<td>Dst Byte fill (21):</td>
<td>75709872</td>
</tr>
<tr>
<td>Other fill:</td>
<td>0</td>
</tr>
<tr>
<td>Other no fill:</td>
<td>0</td>
</tr>
<tr>
<td>Zero fill range:</td>
<td></td>
</tr>
<tr>
<td>Src fill range:</td>
<td></td>
</tr>
<tr>
<td>Dst fill range:</td>
<td>120103200-195813071</td>
</tr>
<tr>
<td>Other fill range:</td>
<td></td>
</tr>
<tr>
<td>Other not filled range:</td>
<td>0 source read errors, 0 destination read errors</td>
</tr>
<tr>
<td>Start:</td>
<td>05/21/07 07:05:05PM</td>
</tr>
<tr>
<td>Acquisition Hash:</td>
<td>EAB64F53A8A4F45E51570D1B9787B9FC</td>
</tr>
<tr>
<td>Start:</td>
<td>05/21/07 07:38:09PM</td>
</tr>
<tr>
<td>Total Sectors:</td>
<td>195,813,072</td>
</tr>
<tr>
<td>Input Hash:</td>
<td>EAB64F53A8A4F45E51570D1B9787B9FC</td>
</tr>
<tr>
<td>Actual Date:</td>
<td>05/21/07 07:05:05PM</td>
</tr>
<tr>
<td>File Integrity:</td>
<td>Completely Verified, 0 Errors</td>
</tr>
<tr>
<td>Acquisition Hash:</td>
<td>eab64f53a8a4f45e51570d1b9787b9fc</td>
</tr>
<tr>
<td>Verify Hash:</td>
<td>eab64f53a8a4f45e51570d1b9787b9fc</td>
</tr>
<tr>
<td>EnCase Version:</td>
<td>5.05f</td>
</tr>
<tr>
<td>System Version:</td>
<td>Windows XP</td>
</tr>
<tr>
<td>Error Granularity:</td>
<td>64</td>
</tr>
<tr>
<td>Read Errors:</td>
<td>0</td>
</tr>
<tr>
<td>Missing Sector Errors:</td>
<td>0</td>
</tr>
<tr>
<td>CRC Errors:</td>
<td>0</td>
</tr>
<tr>
<td>Total Size:</td>
<td>61,492,838,400 bytes (57.3GB)</td>
</tr>
<tr>
<td>Total Sectors:</td>
<td>120,103,200</td>
</tr>
<tr>
<td>Read Errors:</td>
<td>0</td>
</tr>
<tr>
<td>Missing Sector Errors:</td>
<td>0</td>
</tr>
<tr>
<td>CRC Errors:</td>
<td>0</td>
</tr>
<tr>
<td>Compression:</td>
<td>Good</td>
</tr>
<tr>
<td>-2100</td>
<td>Total Size: 61,492,838,400 bytes (57.3GB)</td>
</tr>
<tr>
<td>Total Sectors:</td>
<td>120,103,200</td>
</tr>
</tbody>
</table>

32 different run lengths observed in 44 runs
2 runs of length 1
1 runs of length 2
1 runs of length 5
1 runs of length 6
1 runs of length 7
2 runs of length 10
1 runs of length 12
1 runs of length 14
1 runs of length 16
1 runs of length 21
2 runs of length 22
1 runs of length 23
1 runs of length 24
1 runs of length 25
1 runs of length 29
1 runs of length 32
1 runs of length 33
1 runs of length 34
1 runs of length 35
2 runs of length 36
1 runs of length 38
2 runs of length 39
1 runs of length 41
Test Case DA-09-64 EnCase 5.05f

2 runs of length 42
1 runs of length 46
1 runs of length 49
1 runs of length 51
1 runs of length 55
1 runs of length 60
1 runs of length 61
5 runs of length 62
1 runs of length 64
1463 sectors differ
  0 zero filled and 1463 varying non-zero filled
Settings: fill none size FAT(2000MB)
Write Block: Fastbloc SE

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>some sectors differ</td>
</tr>
<tr>
<td>AM-09 Error logged.</td>
<td>faulty sector not logged</td>
</tr>
<tr>
<td>AM-10 Benign fill replaces inaccessible sectors.</td>
<td>undetermined fill source</td>
</tr>
<tr>
<td>AO-01 Image file is complete and accurate.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-05 Multifile image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

Analysis: Expected results not achieved
Case Summary: DA-10 Acquire a digital source to an image file in an alternate format.

Assertions:
AM-01 The tool uses access interface SRC-AI to access the digital source.
AM-02 The tool acquires digital source DS.
AM-03 The tool executes in execution environment XE.
AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
AM-06 All visible sectors are acquired from the digital source.
AM-08 All sectors acquired from the digital source are acquired accurately.
AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
AO-02 If an image file format is specified, the tool creates an image file in the specified format.
AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

Tester Name: mrmw
Test Host: Joe
Test Date: Tue Feb 22 11:34:07 2007
Drives: src(43) dst (2) other (01-fu)

Source
- src hash (SHA1): < 88BE2E7F7AD237DC7A73281DD93F525065E5871 >
- src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AEEF7 >
- 78125000 total sectors (40000000000 bytes)
- Model (0BB-75JHC0 ) serial # ( WD-WMAMC46588)

Partition Table:
- N Start LBA Length Start C/H/S End C/H/S boot Partition type
  1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X
  2 X 020980890 057143205 1023/000/01 1023/254/63 00 extended
  3 S 000000063 00032067 1023/001/01 1023/254/63 01 Fat12
  4 X 000032130 002104515 1023/000/01 1023/254/63 05 extended
  5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16
  6 X 002136645 004192965 1023/000/01 1023/254/63 05 extended
  7 S 000000063 004192902 1023/001/01 1023/254/63 16 other
  8 X 006329610 008401995 1023/000/01 1023/254/63 05 extended
  9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32
 10 X 014731605 010490445 1023/000/01 1023/254/63 05 extended
 11 L 000000063 010490382 1023/001/01 1023/254/63 83 Linux
 12 X 025222050 004209030 1023/000/01 1023/254/63 05 extended
 13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap
 14 X 029431080 027712125 1023/000/01 1023/254/63 05 extended
 15 S 000000063 027712062 1023/001/01 1023/254/63 07 NTFS
 16 S 000000000 00000000 0000/000/00 0000/000/00 00 empty entry
 17 P 000000000 00000000 0000/000/00 0000/000/00 00 empty entry
 18 P 000000000 00000000 0000/000/00 0000/000/00 00 empty entry
- 1 020980827 sectors 10742183424 bytes
- 3 000032067 sectors 16418304 bytes
- 5 002104452 sectors 1077479424 bytes
- 7 004209030 sectors 1077479424 bytes
- 9 008401932 sectors 1077479424 bytes
- 11 010490382 sectors 1077479424 bytes
- 13 004208967 sectors 1077479424 bytes
- 15 027712062 sectors 1077479424 bytes

Log
- Start: 05/22/07 12:39:31PM
- Acquisition Hash: BC39C3F7EE7A50E77B9BA1E65A5AEEF7
- Settings: fill none size cd
- Write Block: fastbloc LE 42

Results:
<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM-01 Source acquired using interface AI.</td>
<td>as expected</td>
</tr>
</tbody>
</table>

August 2008  57 of 114  Test Results for EnCase 5.05f June 2008
<table>
<thead>
<tr>
<th>Test Case DA-10-BEST EnCase 5.05f</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM-02 Source is type DS.</td>
</tr>
<tr>
<td>AM-03 Execution environment is XE.</td>
</tr>
<tr>
<td>AM-05 An image is created on file system type FS.</td>
</tr>
<tr>
<td>AM-06 All visible sectors acquired.</td>
</tr>
<tr>
<td>AM-08 All sectors accurately acquired.</td>
</tr>
<tr>
<td>AO-01 Image file is complete and accurate.</td>
</tr>
<tr>
<td>AO-02 Image file in specified format.</td>
</tr>
<tr>
<td>AO-05 Multifile image created.</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
</tr>
</tbody>
</table>

Analysis: Expected results achieved
## Test Case DA-10-PASSWORD

**EnCase 5.05f**

### Case Summary:
DA-10 Acquire a digital source to an image file in an alternate format.

### Assertions:
- **AM-01** The tool uses access interface SRC-AI to access the digital source.
- **AM-02** The tool acquires digital source DS.
- **AM-03** The tool executes in execution environment XE.
- **AM-05** If image file creation is specified, the tool creates an image file on file system type FS.
- **AM-06** All visible sectors are acquired from the digital source.
- **AM-08** All sectors acquired from the digital source are acquired accurately.
- **AO-01** If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
- **AO-02** If an image file format is specified, the tool creates an image file in the specified format.
- **AO-05** If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
- **AO-22** If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
- **AO-23** If the tool logs any log significant information, the information is accurately recorded in the log file.
- **AO-24** If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

### Tester Name:
mrmw

### Test Host:
Frank

### Test Date:
Thu May 17 12:49:12 2007

### Drives:
src(43) dst (55-IDE) other (01-FU)

### Source Setup:
- **src hash (SHA1):** `<886E2E7F7AD237DC7A732281DD93F525065E5871>`
- **src hash (MD5):** `<BC39C3F7EE7A50E77B981E65A5AEEF7>`
- **Model (0BB-75JHC0):** serial # (WD-WMAMC46588)
- **N Start LBA Length Start C/H/S End C/H/S boot Partition type**
  1. `P 000000063 020980827 0000/001/01 1023/254/63` 0C Fat32X
  2. `X 020980890 057143205 1023/000/01 1023/254/63` 0F extended
  3. `S 000000063 000032067 1023/001/01 1023/254/63` 01 Fat12
  4. `X 000032130 002104515 1023/000/01 1023/254/63` 05 extended
  5. `S 000000063 002104452 1023/001/01 1023/254/63` 06 Fat16
  6. `X 002136645 004192965 1023/000/01 1023/254/63` 05 extended
  7. `S 000000063 004192902 1023/001/01 1023/254/63` 16 other
  8. `X 006329610 008401995 1023/000/01 1023/254/63` 05 extended
  9. `S 000000063 008401932 1023/001/01 1023/254/63` 08 Fat32
  10. `X 014731605 010490445 1023/000/01 1023/254/63` 05 extended
  11. `S 000000063 010490382 1023/001/01 1023/254/63` 83 Linux
  12. `X 025222050 027712125 1023/000/01 1023/254/63` 05 extended
  13. `S 000000063 027712062 1023/001/01 1023/254/63` 07 NTFS
  14. `S 000000000 000000000 0000/000/00 0000/000/00` 00 empty entry
  15. `P 000000000 000000000 0000/000/00 0000/000/00` 00 empty entry
  16. `P 000000000 000000000 0000/000/00 0000/000/00` 00 empty entry
  17. `P 000000000 000000000 0000/000/00 0000/000/00` 00 empty entry
  18. `P 000000000 000000000 0000/000/00 0000/000/00` 00 empty entry
  19. `020980827 sectors 10742183424 bytes`
  20. `000032067 sectors 16418304 bytes`
  21. `020980890 sectors 10742183424 bytes`
  22. `000032130 sectors 16418304 bytes`
  23. `020980890 sectors 10742183424 bytes`
  24. `000032130 sectors 16418304 bytes`
  25. `000000063 sectors 16418304 bytes`
  26. `000000000 sectors 16418304 bytes`

### Log Highlights:
- **Start:** 05/21/07 01:29:06PM
- **Acquisition Hash:** `BC39C3F7EE7A50E77B981E65A5AEEF7`
- **Start:** 05/21/07 01:58:51PM
- **Start Sector:** 63
- **Stop Sector:** 20,980,889
- **Start:** 05/21/07 02:00:55PM
- **Start Sector:** 20,980,953
- **Stop Sector:** 21,013,019
**Test Case DA-10-PASSWORD EnCase 5.05f**

| Start: 05/21/07 02:01:17PM | Start Sector: 20,980,953 |
| Start: 05/21/07 02:01:27PM | Start Sector: 23,117,534 |
| Stop Sector: 21,013,059 | Stop Sector: 35,712,494 |
| Start: 05/21/07 02:02:29PM | Start Sector: 21,013,083 |
| Stop Sector: 23,117,588 | Stop Sector: 46,202,939 |
| Start: 05/21/07 02:04:08PM | Start Sector: 23,117,598 |
| Stop Sector: 27,310,563 | Stop Sector: 50,412,033 |
| Start: 05/21/07 02:04:35PM | Start Sector: 23,117,608 |
| Stop Sector: 27,311,944 | Stop Sector: 78,124,084 |
| Start: 05/21/07 02:07:48PM | Total Sectors: 390,721,968 |
| Actual Date:05/21/07 01:29:06PM | Actual Date:05/21/07 01:29:06PM |
| File Integrity:Completely Verified, 0 Errors | Verify Hash:bc39c3f7ee7a50e77b9bae65a5aeef7 |
| EnCase Version:5.05f | System Version:Windows XP |
| Error Granularity:64 | Error Granularity:64 |
| Read Errors:0 | Read Errors:0 |
| Missing Sector Errors:0 | Missing Sector Errors:0 |
| CRC Errors:0 | CRC Errors:0 |
| Total Size:40,000,000,000 bytes (37.3GB) | Total Size:40,000,000,000 bytes (37.3GB) |
| Total Sectors:78,125,000 | Total Sectors:78,125,000 |
| Settings: fill none size cd | Settings: fill none size cd |
| Write Block: Tableau 6 FW800 | Write Block: Tableau 6 FW800 |

**Results:**

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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-02 Image file in specified format.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-05 Multifile image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

**Analysis:** Expected results achieved
**Test Case DA-10-UNCOMPRESSED**

**Case Summary:**
DA-10 Acquire a digital source to an image file in an alternate format.

**Assertions:**
- AM-01 The tool uses access interface SRC-AI to access the digital source.
- AM-02 The tool acquires digital source DS.
- AM-03 The tool executes in execution environment XE.
- AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
- AM-06 All visible sectors are acquired from the digital source.
- AM-08 All sectors acquired from the digital source are acquired accurately.
- AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.
- AO-02 If an image file format is specified, the tool creates an image file in the specified format.
- AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.
- AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
- AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

**Tester Name:** mrmw

**Test Host:** Joe

**Test Date:** Tue May 22 14:41:53 2007

**Drives:**
- src(43) dst (29) other (01-fu)

**Source Setup:**
- src hash (SHA1): < 888E2E7F7AD237DC7A732281DD93F525065E5871 >
- src hash (MD5): < BC39C3F7EE7A50E77B9BAE565A5AEEF7 >
- Model (0BB-75JHC0) serial # (WD-WMAMC46588)
- N Start LBA Length Start C/H/S End C/H/S boot Partition type
  1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X
  2 X 020980890 057143205 1023/000/01 1023/254/63 01 Fat12
  4 x 000052130 002104515 1023/000/01 1023/254/63 05 extended
  5 S 000000063 002104452 1023/000/01 1023/254/63 06 Fat16
  6 x 002136645 004192965 1023/000/01 1023/254/63 05 extended
  7 S 000000063 004192902 1023/000/01 1023/254/63 16 other
  8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended
  9 S 000000063 008401932 1023/000/01 1023/254/63 08 Fat32
  10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended
  11 x 000000063 00409382 1023/000/01 1023/254/63 83 Linux
  12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended
  13 S 000000063 004208967 1023/000/01 1023/254/63 82 Linux swap
  14 x 029431080 027712125 1023/000/01 1023/254/63 05 extended
  15 S 000000063 027712062 1023/000/01 1023/254/63 07 NTFS
  16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
  17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
  18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
  1 020980827 sectors 10742183424 bytes
  3 00032067 sectors 16418304 bytes
  5 002104515 sectors 16418304 bytes
  7 004192902 sectors 16418304 bytes
  9 008401932 sectors 16418304 bytes
  11 010490445 sectors 16418304 bytes
  13 004208967 sectors 16418304 bytes
  15 027712062 sectors 16418304 bytes

**Log Highlights:**
- Actual Date:05/23/07 07:33:27AM
- Acquisition Hash:bc39c3f7ee7a50e77b9bae565a5aee7f
- EnCase Version:5.05f
- Error Granularity:64
- Read Errors:0
- Missing Sector Errors:0
- CRC Errors:0
### Test Case DA-10-UNCOMPRESSED EnCase 5.05f

Total Size: 40,000,000,000 bytes (37.3GB)
Total Sectors: 78,125,000
Settings: fill none size cd
Write Block: Fastbloc FE 45 FW800

### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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-02 Image file in specified format.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-05 Multifile image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

### Analysis:

Expected results achieved
### Test Case DA-12

**DA-12** Attempt to create an image file where there is insufficient space.

**Asserts:**
- AM-01 The tool uses access interface SRC-AI to access the digital source.
- AM-02 The tool acquires digital source DS.
- AM-03 The tool executes in execution environment XE.
- AM-05 If image file creation is specified, the tool creates an image file on file system type FS.
- AO-04 If the tool is creating an image file and there is insufficient space on the image destination device to contain the image file, the tool shall notify the user.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.
- AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process.

**Tester Name:** mrmw

**Test Host:** Frank

**Test Date:** Wed Jun 13 10:00:48 2007

**Drives:**
- src(2A) dst (none) other (none)

**Source Setup:**
- src hash (SHA256): <AE8E839101661367D92803D5F5D408268635EFDF8A05F6A33838C3919F5ABA>
- src hash (SHA1): <F5F9F293DCA3B95F36E7270FB2A72A27E98188125>
- src hash (MD5): <91E0AC905F682ECE4DE4E9835089B519>
- 17783249 total sectors (9105023488 bytes)

**Log Highlights:**
- Start: 06/13/07 10:01:22AM
- Acquisition Hash: B5A01F014AF64F00756177CAD76486B5
- Actual Date: 06/13/07 10:00:30AM
- File Integrity: Completely Verified, 0 Errors
- Acquisition Hash: b5a01f014af64f00756177cad76486b5
- Verify Hash: 069b35ebfbb4e5a4e79b8f6e6cfbb4b2
- EnCase Version: 5.05f
- System Version: Windows XP
- Error Granularity: 64
- Read Errors: 0
- Missing Sector Errors: 1
- CRC Errors: 0
- Total Size: 9,105,023,488 bytes (8.5GB)
- Total Sectors: 17,783,249
- Settings: fill none
- Write Block: FastBloc SE

### Results

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>AO-04 User notified if space exhausted</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

**Analysis:** Expected results achieved
### Test Case DA-13  
**EnCase 5.05f**

<table>
<thead>
<tr>
<th>Case Summary</th>
<th><strong>DA-13</strong> Create an image file where there is insufficient space on a single volume, and use destination device switching to continue on another volume.</th>
</tr>
</thead>
</table>
| Assertions  | AM-01 The tool uses access interface SRC-AI to access the digital source.  
AM-02 The tool acquires digital source DS.  
AM-03 The tool executes in execution environment XE.  
AM-05 If image file creation is specified, the tool creates an image file on file system type FS.  
AM-06 All visible sectors are acquired from the digital source.  
AM-08 All sectors acquired from the digital source are acquired accurately.  
AO-01 If the tool creates an image file, the data represented by the image file is the same as the data acquired by the tool.  
AO-04 If the tool is creating an image file and there is insufficient space on the image destination device to contain the image file, the tool shall notify the user.  
AO-05 If the tool creates a multi-file image of a requested size then all the individual files shall be no larger than the requested size.  
AO-10 If there is insufficient space to contain all files of a multi-file image and if destination device switching is supported, the image is continued on another device.  
AO-22 If requested, the tool calculates block hashes for a specified block size during an acquisition for each block acquired from the digital source.  
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.  
AO-24 If the tool executes in a forensically safe execution environment, the digital source is unchanged by the acquisition process. |

| Tester | mrmw |
| Test Host: | Frank |
| Drives: | src(2A)  dst (none)  other (none) |
| Source Setup | src hash (SHA256): \(<\text{AE8E839101661367D92803D5F5D408266635EFD}D\text{8A05F6A633383C}D\text{C3919F5ABA}>\)  
src hash (SHA1): \(<\text{F5F9F2903DCAB895F36E270FB22A722E7918125}>\)  
src hash (MD5): \(<\text{91E0AC905F682ECF6DE4E9835089B519}>\)  
17783249 total sectors (910523488 bytes)  
Model (QM39100TD-SCA) serial # (FCB-20-116711-06 HDAQM39100TD-SCA)  
N Start LBA Length Start C/H/S End C/H/S boot Partition type  
1 P 0000000063 017751762 0000/001/01 1023/254/63 Boot 07 NTFS  
2 P 0000000000 0000000000 0000/000/00 0000/000/00 00 empty entry  
3 P 0000000000 0000000000 0000/000/00 0000/000/00 00 empty entry  
4 P 0000000000 0000000000 0000/000/00 0000/000/00 00 empty entry  
1 017751762 sectors 9088902144 bytes |

| Log Highlights | Start: 06/13/07 11:31:53 AM  
Stop Sector: 17,783,248  
Hash Value: 91E0AC905F682ECF6DE4E9835089B519  
Actual Date: 06/13/07 10:26:15 AM  
File Integrity: Completely Verified, 0 Errors  
Acquisition Hash: 91E0AC905F682ECF6DE4E9835089B519  
Verify Hash: 91E0AC905F682ECF6DE4E9835089B519  
EnCase Version: 5.05f  
System Version: Windows XP  
Error Granularity: 64  
Read Errors: 0  
Missing Sector Errors: 0  
CRC Errors: 0  
Total Size: 9,105,023,488 bytes (8.5GB)  
Total Sectors: 17,783,249  
Actual Date: 06/13/07 10:26:15 AM  
File Integrity: Completely Verified, 0 Errors  
Acquisition Hash: 91E0AC905F682ECF6DE4E9835089B519  
Verify Hash: 91E0AC905F682ECF6DE4E9835089B519  
EnCase Version: 5.05f  
System Version: Windows XP |
Test Case DA-13 EnCase 5.05f

Error Granularity: 64
Read Errors: 0
Missing Sector Errors: 0
CRC Errors: 0
Total Size: 9,105,023,488 bytes (8.5GB)
Total Sectors: 17,783,249
Start: 06/13/07 11:34:19AM
Start Sector: 0
Stop Sector: 17,783,248
Hash Value: 91E0AC905F682ECF6DE4E9835089B519
Settings: fill none
Write Block: FastBloc SE

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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-04 User notified if space exhausted.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-05 Multifile image created.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-10 Image file continued on new device.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-22 Tool calculates hashes by block.</td>
<td>option not available</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-24 Source is unchanged by acquisition.</td>
<td>not checked</td>
</tr>
</tbody>
</table>

Analysis: Expected results achieved
### 5.2.29 DA-14-ATA28

**Test Case DA-14-ATA28 EnCase 5.05f**

<table>
<thead>
<tr>
<th>Case Summary:</th>
<th>DA-14 Create an unaligned clone from an image file.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assertions:</td>
<td>AM-03 The tool executes in execution environment XE.</td>
</tr>
<tr>
<td></td>
<td>AO-12 If requested, a clone is created from an image file.</td>
</tr>
<tr>
<td></td>
<td>AO-13 A clone is created using access interface DST-AI to write to the clone device.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>AO-17 If requested, any excess sectors on a clone destination device are not modified.</td>
</tr>
<tr>
<td></td>
<td>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.</td>
</tr>
</tbody>
</table>

**Tester Name:** sim  
**Test Host:** joe  
**Test Date:** Tue Apr 17 11:14:46 2007  
**Drives:** src(43) dst (7c) other (fat32)

#### Source
- **src hash (SHA1):** <888E2E7F7AD237DC7A732281DD93F325065E5871>  
- **src hash (MD5):** <BC39C3F7EE7A50B77B98A1E65A5AEFF7>  
- **Model (0BB-75JHC0) serial #:** WD-WMAHC46588

<table>
<thead>
<tr>
<th>N</th>
<th>Start LBA</th>
<th>Length</th>
<th>Start C/H/S</th>
<th>End C/H/S</th>
<th>boot</th>
<th>Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0000000063</td>
<td>020980827</td>
<td>0000/001/01</td>
<td>1023/254/63</td>
<td>0C</td>
<td>Fat32X</td>
</tr>
<tr>
<td>2</td>
<td>0000000063</td>
<td>021004515</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>01</td>
<td>Fat12</td>
</tr>
<tr>
<td>3</td>
<td>0000000063</td>
<td>021048465</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>06</td>
<td>Fat16</td>
</tr>
<tr>
<td>4</td>
<td>0000000063</td>
<td>021104895</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>5</td>
<td>0000000063</td>
<td>021136645</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>6</td>
<td>0000000063</td>
<td>021290920</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>16</td>
<td>other</td>
</tr>
<tr>
<td>7</td>
<td>0000000063</td>
<td>021329610</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>8</td>
<td>0000000063</td>
<td>021403193</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>08</td>
<td>Fat32</td>
</tr>
<tr>
<td>9</td>
<td>0000000063</td>
<td>021431605</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>10</td>
<td>0000000063</td>
<td>021490445</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>11</td>
<td>0000000063</td>
<td>021903828</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>Linux</td>
</tr>
<tr>
<td>12</td>
<td>0000000063</td>
<td>022098027</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>13</td>
<td>0000000063</td>
<td>022098027</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>14</td>
<td>0000000063</td>
<td>0227712125</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>07</td>
<td>NTFS</td>
</tr>
<tr>
<td>15</td>
<td>0000000063</td>
<td>022771262</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>16</td>
<td>0000000063</td>
<td>022771262</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>17</td>
<td>0000000063</td>
<td>022771262</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>18</td>
<td>0000000063</td>
<td>022771262</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>19</td>
<td>0000000063</td>
<td>022771262</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>100</td>
<td>020980827 sectors 10742183424 bytes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>020980827 sectors 10742183424 bytes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>020980827 sectors 10742183424 bytes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Log Highlights:
- **78177792 sectors wiped with 7C**
- **78177792 sectors wiped with 7C**
- **Comparison of original to clone Drive**
- **Sectors compared:** 78125000
- **Sectors match:** 78125000
- **Sectors differ:** 0
- **Bytes differ:** 0
- **Diffs range**
- **Source (78125000) has 52792 fewer sectors than destination (78177792)**
- **Zero fill:** 0
- **Src Byte fill (43):** 0
- **DST Byte fill (7C):** 52792
- **Other fill:** 0
- **Other no fill:** 0
- **Zero fill range:**

---

**August 2008**  66 of 114  **Test Results for EnCase 5.05f June 2008**
### Test Case DA-14-ATA28 EnCase 5.05f

**Src fill range:**
- Src fill range: 78125000-78177791

**Dst fill range:**
- Dst fill range: 78125000-78177791

**Settings:**
- Settings: fill none

**Start:** 04/18/07 03:27:44PM

**Total Sectors:** 78,177,792

**Input Hash:** BC39C3F7EE7A50E77B9BA1E65A5AEEF7

**Results:**

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

**Analysis:** Expected results achieved
5.2.30 DA-14-ATA48

Test Case DA-14-ATA48 EnCase 5.05f

Case Summary: DA-14 Create an unaligned clone from an image file.

Assertions:

AM-03 The tool executes in execution environment XE.
AO-12 If requested, a clone is created from an image file.
AO-13 A clone is created using access interface DST-AI to write to the
clone device.
AO-14 If an unaligned clone is created, each sector written to the clone is
accurately written to the same disk address on the clone that the sector
occupied on the digital source.
AO-17 If requested, any excess sectors on a clone destination device are
not modified.
AO-23 If the tool logs any log significant information, the information is
accurately recorded in the log file.

Tester Name: slm
Test Host: joe
Test Date: Thu Apr 12 12:07:10 2007

Drives:

<table>
<thead>
<tr>
<th>Source</th>
<th>Drive Name</th>
<th>Hashes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>src</td>
<td></td>
<td>SHA1:</td>
<td>src hash (SHA1): &lt;BFF620D2B6DCAFE8412EAD456C8554F872EFBF&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MD5:</td>
<td>src hash (MD5): &lt;D10F765B564CEBA2D131C61F9FB382&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>390721968 total sectors (200049647616 bytes)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>24320/254/63 (max cyl/hd values)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>24321/255/63 (number of cyl/hd)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IDE:</td>
<td>IDE disk: Model (WDC WD2000JB-00KFA0) serial # (WD-WMAMR1031111)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N Start LBA Length Start C/H/S End C/H/S boot Partition type</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 P 0000000063 390700737 0000/001/01 1023/254/63 Boot 07 NTFS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 390700737 sectors 20003877344 bytes</td>
</tr>
<tr>
<td></td>
<td>dst</td>
<td></td>
<td>dst (2a-ide)</td>
</tr>
<tr>
<td></td>
<td>other</td>
<td></td>
<td>other (fat)</td>
</tr>
</tbody>
</table>

Log Highlights:

- Destination setup
  490234752 sectors wiped with 2A

  Comparison of original to clone Drive
  Sectors compared: 390721968
  Sectors match: 390721968
  Sectors differ: 0
  Bytes differ: 0
  Diffs range
  Source (390721968) has 99512784 fewer sectors than destination (490234752)
  Zero fill: 0
  Src Byte fill (4C): 0
  Dst Byte fill (2A): 99512784
  Other fill: 0
  Other no fill: 0
  Zero fill range: Src fill range:
  Dst fill range: 390721968-490234751
  Other fill range:
  Other not filled range:
- 0 source read errors, 0 destination read errors

- Start: 04/12/07 12:21:29PM
- Total Sectors: 490,234,752
- Input Hash: D10F765B564CEBA2D131C61F9FB382
- Actual Date:04/03/07 03:50:36PM
- Acquisition Hash: d10f765b564ceba2d131c61f9fb382
- EnCase Version:5.05f
- Error Granularity:64
- Read Errors:0
- Missing Sector Errors:0
- CRC Errors:0
- Total Size:200,049,647,616 bytes (186.3GB)
- Total Sectors:390,721,968
## Test Case DA-14-ATA48 EnCase 5.05f

**Settings:** fill none

### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

### Analysis:

Expected results achieved
## 5.2.31 DA-14-BEST

### Test Case DA-14-BEST EnCase 5.05f

<table>
<thead>
<tr>
<th>Case Summary:</th>
<th>DA-14 Create an unaligned clone from an image file.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assertions:</td>
<td>AM-03 The tool executes in execution environment XE.</td>
</tr>
<tr>
<td></td>
<td>AO-12 If requested, a clone is created from an image file.</td>
</tr>
<tr>
<td></td>
<td>AO-13 A clone is created using access interface DST-AI to write to the clone device.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>AO-17 If requested, any excess sectors on a clone destination device are not modified.</td>
</tr>
<tr>
<td></td>
<td>AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.</td>
</tr>
</tbody>
</table>

**Tester Name:** mrnw  
**Test Host:** Freddy  
**Test Date:** Fri Nov 30 15:59:45 2007  
**Drives:** src(43) dst (7B) other (06-FU)

### Source
- **src hash (SHA1):** < 888E2E7F7AD237DC7A732281DD93F32565E871 >  
- **src hash (MD5):** < BC39C3FEE7A50E77B9BA1E65A5AEEF7 >  
- **Model (0BB-75JHC0):** serial # ( WD-WMANC46588)  
  
<table>
<thead>
<tr>
<th>N</th>
<th>Start LBA</th>
<th>Length</th>
<th>Start C/H/S</th>
<th>End C/H/S</th>
<th>boot</th>
<th>Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>020980827</td>
<td>1023</td>
<td>000/001/01</td>
<td>1023/254/63</td>
<td>0C</td>
<td>Fat32X</td>
</tr>
<tr>
<td>2</td>
<td>000000063</td>
<td>1023</td>
<td>000/001/01</td>
<td>1023/254/63</td>
<td>0F</td>
<td>extended</td>
</tr>
<tr>
<td>3</td>
<td>000032067</td>
<td>1023</td>
<td>000/001/01</td>
<td>1023/254/63</td>
<td>01</td>
<td>Fat12</td>
</tr>
<tr>
<td>4</td>
<td>00032130</td>
<td>1023</td>
<td>000/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>5</td>
<td>000000063</td>
<td>1023</td>
<td>000/001/01</td>
<td>1023/254/63</td>
<td>06</td>
<td>Fat16</td>
</tr>
<tr>
<td>6</td>
<td>002136645</td>
<td>1023</td>
<td>000/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>7</td>
<td>000000063</td>
<td>1023</td>
<td>000/001/01</td>
<td>1023/254/63</td>
<td>16</td>
<td>other</td>
</tr>
<tr>
<td>8</td>
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<td>029431080</td>
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<td>1023/254/63</td>
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<td>16</td>
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<td>1023/254/63</td>
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</tr>
<tr>
<td>17</td>
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<td>1023/254/63</td>
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<td>1023/254/63</td>
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<td>14188575744</td>
<td>000/001/01</td>
<td>1023/254/63</td>
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<td>empty entry</td>
</tr>
</tbody>
</table>

### Log Highlights:
- **78177792 sectors wiped with 7B**
  
<table>
<thead>
<tr>
<th>Destination setup</th>
<th>Comparision of original to clone Drive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sectors compared: 78125000</td>
</tr>
<tr>
<td></td>
<td>Sectors match: 78125000</td>
</tr>
<tr>
<td></td>
<td>Sectors differ: 0</td>
</tr>
<tr>
<td></td>
<td>Bytes differ: 0</td>
</tr>
<tr>
<td></td>
<td>Diffs range</td>
</tr>
<tr>
<td></td>
<td>Source (78125000) has 52792 fewer sectors than destination (78177792)</td>
</tr>
<tr>
<td></td>
<td>Zero fill: 0</td>
</tr>
<tr>
<td></td>
<td>Src Byte fill (43): 0</td>
</tr>
<tr>
<td></td>
<td>Dst Byte fill (7B): 52792</td>
</tr>
<tr>
<td></td>
<td>Other fill: 0</td>
</tr>
<tr>
<td></td>
<td>Other no fill: 0</td>
</tr>
<tr>
<td></td>
<td>Zero fill range:</td>
</tr>
</tbody>
</table>

---

**August 2008**  
**70 of 114**  
**Test Results for EnCase 5.05f June 2008**
Test Case DA-14-BEST EnCase 5.05f

Src fill range: 78125000-78177791
Dst fill range: 78125000-78177791
Other fill range: 0
Other not filled range: 0
0 source read errors, 0 destination read errors

Start: 11/30/07 05:24:05PM
Total Sectors: 78,177,792
Input Hash: BC39C3F7EE7A50E77B9BA1E65A5AEEF7
Actual Date: 11/30/07 02:49:32PM
File Integrity: Completely Verified, 0 Errors
Acquisition Hash: bc39c3f7ee7a50e77b9ba1e65a5aeeef7
Verify Hash: bc39c3f7ee7a50e77b9ba1e65a5aeeef7
EnCase Version: 5.05f
System Version: Windows XP
Error Granularity: 64
Read Errors: 0
Missing Sector Errors: 0
CRC Errors: 0
Total Size: 40,000,000,000 bytes (37.3GB)
Total Sectors: 78,125,000
Settings: fill none

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

Analysis: Expected results achieved
5.2.32 DA-14-CF

Test Case DA-14-CF EnCase 5.05f

Case Summary:
DA-14 Create an unaligned clone from an image file.

Assertions:
AM-03 The tool executes in execution environment XE.
AO-12 If requested, a clone is created from an image file.
AO-13 A clone is created using access interface DST-AI to write to the clone device.
AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
AO-17 If requested, any excess sectors on a clone destination device are not modified.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

Tester Name: mrmw
Test Host: Frank
Test Date: Fri Sep 14 11:06:13 2007
Drives: src(C1-CF) dst (C2-CF) other (01-FU)

Source Setup:
src hash (SHA256): <C7CF0218222DF80D316511D6814266C7FA507C13F795AD3D32BB73C159D080>
src hash (SHA1): <5B8235178DF99FA307430C088F817460638A0B>
src hash (MD5): <776DF8B4D2589E21DEBCF589EDC16D78>
503808 total sectors (257949696 bytes)
Model (CF) serial #()

Table:

<table>
<thead>
<tr>
<th>N</th>
<th>Start LBA Length</th>
<th>Start C/H/S End C/H/S</th>
<th>boot Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>778135908</td>
<td>1141509631</td>
<td>0357/116/40 0357/032/45 Boot 72 other</td>
</tr>
<tr>
<td>2</td>
<td>168689522</td>
<td>1936028240</td>
<td>0288/115/43 0367/114/50 Boot 65 other</td>
</tr>
<tr>
<td>3</td>
<td>1869891465</td>
<td>1936028192</td>
<td>0366/032/33 0357/032/43 Boot 79 other</td>
</tr>
<tr>
<td>4</td>
<td>2885681152</td>
<td>000055499</td>
<td>0372/097/50 0000/010/00 Boot OD other</td>
</tr>
</tbody>
</table>

1 1141509631 sectors 584452931072 bytes
2 193602840 sectors 99124658880 bytes
3 1936028192 sectors 991246434304 bytes
4 000055499 sectors 28415488 bytes

Log Highlights:
503808 sectors wiped with 2
Comparison of original to clone Drive
Sectors compared: 503808
Sectors match: 503808
Sectors differ: 0
Bytes differ: 0
Diffs range
0 source read errors, 0 destination read errors

Actual Date:09/14/07 01:59:26PM
File Integrity:Completely Verified, 0 Errors
Acquisition Hash:776df8b4d2589e21debcf589edc16d78
Verify Hash:776df8b4d2589e21debcf589edc16d78
EnCase Version:5.05f
Error Granularity:64
Read Errors:0
Missing Sector Errors:0
CRC Errors:0
Total Size:257,949,696 bytes (246MB)
Total Sectors:503,808
Settings: size CD (640 MB)
fill none
Write Block: 7 UltraBlock Forensci Card Reader

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM-03 The tool executes in execution environment 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>Test Case DA-14-CF EnCase 5.05f</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>AO-13</strong> Clone created using interface AI.</td>
<td>as expected</td>
</tr>
<tr>
<td><strong>AO-14</strong> An unaligned clone is created.</td>
<td>as expected</td>
</tr>
<tr>
<td><strong>AO-17</strong> Excess sectors are unchanged.</td>
<td>as expected</td>
</tr>
<tr>
<td><strong>AO-23</strong> Logged information is correct.</td>
<td>as expected</td>
</tr>
</tbody>
</table>

**Analysis:** Expected results achieved
## Test Case DA-14-F12

### EnCase 5.05f

**Case Summary:**
DA-14: Create an unaligned clone from an image file.

**Assertions:**
- AM-03: The tool executes in execution environment XE.
- AO-12: If requested, a clone is created from an image file.
- AO-13: A clone is created using access interface DST-AI to write to the clone device.
- AO-14: If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
- AO-17: If requested, any excess sectors on a clone destination device are not modified.
- AO-23: If the tool logs any log significant information, the information is accurately recorded in the log file.

**Tester Name:** mrmw

**Test Host:** Frank

**Test Date:** Thu Jun 21 09:33:44 2007

**Drives:**
- src(01)
- dst (63)
- other (02-FU)

**Source Setup:**
- Model: 0BB-00JHCU serial #: WD-WMAMC74171

<table>
<thead>
<tr>
<th>N</th>
<th>Start LBA</th>
<th>Length</th>
<th>Start C/H/S</th>
<th>End C/H/S</th>
<th>boot</th>
<th>Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0000000063</td>
<td>020980827</td>
<td>0000/001/01</td>
<td>1023/254/63</td>
<td>0C Fat32X</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0000000063</td>
<td>000000063</td>
<td>020980827</td>
<td>1023/254/63</td>
<td>0F extended</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0000000063</td>
<td>000000063</td>
<td>01023/001/01</td>
<td>1023/254/63</td>
<td>01 Fat12</td>
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</tr>
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<td>1023/254/63</td>
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<tr>
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<td>000000063</td>
<td>01023/001/01</td>
<td>1023/254/63</td>
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</tr>
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<td>6</td>
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<td>000000063</td>
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<td>1023/254/63</td>
<td>05 extended</td>
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<td>1023/254/63</td>
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<td>1023/254/63</td>
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</tr>
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<td>000000063</td>
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<td>1023/254/63</td>
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<td>01023/001/01</td>
<td>1023/254/63</td>
<td>08 Linux swap</td>
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<td></td>
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<td>01023/001/01</td>
<td>1023/254/63</td>
<td>07 NTFS</td>
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</tr>
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<td>16</td>
<td>0000000063</td>
<td>000000063</td>
<td>01023/001/01</td>
<td>1023/254/63</td>
<td>00 empty entry</td>
<td></td>
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<td>01023/001/01</td>
<td>1023/254/63</td>
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<td>1023/254/63</td>
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</tr>
<tr>
<td>19</td>
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<td>000000063</td>
<td>01023/001/01</td>
<td>1023/254/63</td>
<td>00 empty entry</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>0000000063</td>
<td>000000063</td>
<td>01023/001/01</td>
<td>1023/254/63</td>
<td>00 empty entry</td>
<td></td>
</tr>
</tbody>
</table>

**Log Highlghts:**
- Destination setup: 12594960 sectors wiped with 63
- Comparison of original to clone Partition
- Sectors compared: 32067
- Sectors match: 32067
- Sectors differ: 0
- Bytes differ: 0
- Diffs range:
  - start Thu Jun 21 16:16:11 2007
  - finish Thu Jun 21 16:16:19 2007
  - elapsed time: 0:0:8
  - Normal exit
- Start: 06/21/07 01:15:49PM
- Total Sectors: 64,197
- Input Hash: E20E3CF680BF6F2D2AA756829C8CD9
- Start: 06/21/07 04:32:04PM
## Test Case DA-14-F12 EnCase 5.05f

| Start Sector: | 0 |
| Stop Sector:  | 32,066 |
| Hash Value:   | E20E3CFEA80BF6F2D2AA75E829CC8CD9 |
| Total Capacity: | 16,384,000 bytes (15.6MB) |
| Total Clusters: | 4,000 |
| Unallocated:  | 16,248,832 bytes (15.5MB) |
| OEM Version:  | MSWIN4.0 |
| Serial Number: | 8AC5-98DE |
| Actual Date:  | 06/20/07 03:01:39PM |
| File Integrity: | Completely Verified, 0 Errors |
| Acquisition Hash: | e20e3cfe80bf6f2d2aa75e829cc8cd9 |
| Verify Hash:   | e20e3cfe80bf6f2d2aa75e829cc8cd9 |
| EnCase Version: | 5.05f |
| Error Granularity: | 64 |
| Read Errors:  | 0 |
| Missing Sector Errors: | 0 |
| CRC Errors:   | 0 |
| Total Size:   | 16,418,304 bytes (15.7MB) |
| Total Sectors: | 32,067 |
| Settings:     | fill none |

### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

### Analysis:

Expected results achieved
### Test Case DA-14-F16 EnCase 5.05f

**Case Summary:**
DA-14 Create an unaligned clone from an image file.

**Assertions:**
- AM-03 The tool executes in execution environment XE.
- AO-12 If requested, a clone is created from an image file.
- AO-13 A clone is created using access interface DST-AI to write to the clone device.
- AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
- AO-17 If requested, any excess sectors on a clone destination device are not modified.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

**Tester Name:** sim
**Test Host:** joe
**Test Date:** Mon Apr 23 14:37:44 2007
**Drives:**
- **src** (43)
  - **dst** (7c)
  - Other (-new log)

#### Source Setup:
- Model (0BB-75JHC0)
- Serial # (WD-WMAMC46588)
- N Start LBA Length Start C/H/S End C/H/S boot Partition type
- 1 P 000000063 020988027 0000/001/01 1023/254/63 OC Fat32X
- 2 X 020980890 057143205 1023/000/01 1023/254/63 0F extended
- 3 S 000000063 000032067 1023/001/01 1023/254/63 06 Fat16
- 4 S 001216645 014192956 1023/001/01 1023/254/63 05 extended
- 5 S 000000063 004192902 1023/001/01 1023/254/63 05 extended
- 6 S 000329610 008401995 1023/001/01 1023/254/63 0B Fat32
- 7 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32
- 8 X 014731605 010490445 1023/000/01 1023/254/63 05 extended
- 9 S 000000063 010490382 1023/001/01 1023/254/63 0F extended
- 10 S 000000063 027712062 1023/001/01 1023/254/63 07 NTFS
- 11 S 000000063 027712125 1023/001/01 1023/254/63 07 NTFS
- 12 S 000000063 027712062 1023/001/01 1023/254/63 07 NTFS
- 13 S 000000063 027712125 1023/001/01 1023/254/63 07 NTFS
- 14 S 000000063 027712062 1023/001/01 1023/254/63 07 NTFS
- 15 S 000000063 027712125 1023/001/01 1023/254/63 07 NTFS

#### Log Highlights:
- Destination setup: 78177792 sectors wiped with 7C
- Comparison of original to clone Partition
- Sectors compared: 2104452
- Sectors match: 2104452
- Sectors differ: 0
- Bytes differ: 0
- Diffs range:
  - Source (2104452) has 160650 fewer sectors than destination (2265102)
  - Zero fill: 0
  - Src Byte fill (43): 0
  - Dat Byte fill (7C): 160650
  - Other fill: 0
  - Other no fill: 0
- Zero fill range:
- Src fill range:
## Test Case DA-14-F16 EnCase 5.05f

- **Dst fill range:** 2104452-2265101
- **Other fill range:**
- **Other not filled range:**
- **run start:** Wed Apr 25 14:37:57 2007
- **run finish:** Wed Apr 25 14:41:00 2007
- **elapsed time:** 0:3:3
- **Normal exit**
- **Start:** 04/25/07 02:58:56PM
- **Total Sectors:** 2,265,102
- **Input Hash:** 37E81FFB31C3CB38AA48B2237500908E

### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

### Analysis:

Expected results achieved
5.2.35 DA-14-F32

**Test Case DA-14-F32 EnCase 5.05f**

**Case Summary:**
DA-14 Create an unaligned clone from an image file.

**Assertions:**
- **AM-03** The tool executes in execution environment XE.
- **AO-12** If requested, a clone is created from an image file.
- **AO-13** A clone is created using access interface DST-AI to write to the clone device.
- **AO-14** If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
- **AO-17** If requested, any excess sectors on a clone destination device are not modified.
- **AO-23** If the tool logs any log significant information, the information is accurately recorded in the log file.

**Tester Name:** slm
**Test Host:** joe
**Test Date:** Mon May 7 14:36:49 2007
**Drives:** src(01-ide) dst (7e) other (ntfs)

**Source Setup:**
- Hash (SHA1): `< A48BB565D6DC57C22DB68E2F723DA9AA8DF82B9 >`
- Hash (MD5): `< F458F673894753FA6A0EC8B8EC63848E >`
- `78165360 total sectors (40020664320 bytes)`

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Start LBA</td>
<td>Length</td>
<td>Start C/H/S</td>
<td>End C/H/S</td>
<td>boot</td>
</tr>
<tr>
<td>1</td>
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<td>020980827</td>
<td>0000/001/01</td>
<td>1023/254/63</td>
<td>0C</td>
</tr>
<tr>
<td>2</td>
<td>X</td>
<td>0020980890</td>
<td>057175335</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>0F</td>
</tr>
<tr>
<td>3</td>
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<td>000000063</td>
<td>000032067</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>01</td>
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<tr>
<td>4</td>
<td>X</td>
<td>000032130</td>
<td>021044551</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
</tr>
<tr>
<td>5</td>
<td>S</td>
<td>000000063</td>
<td>021044452</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>06</td>
</tr>
<tr>
<td>6</td>
<td>X</td>
<td>001366645</td>
<td>04192965</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
</tr>
<tr>
<td>7</td>
<td>S</td>
<td>000000063</td>
<td>041929202</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>16</td>
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<tr>
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<td>X</td>
<td>006329610</td>
<td>08401995</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
</tr>
<tr>
<td>9</td>
<td>S</td>
<td>000000063</td>
<td>08401932</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>0B</td>
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<td>014009445</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
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</tr>
<tr>
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<td>014009382</td>
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<td>002104452</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
</tr>
<tr>
<td>13</td>
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<td>000000063</td>
<td>021048967</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>82</td>
</tr>
<tr>
<td>14</td>
<td>X</td>
<td>029431080</td>
<td>027744255</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
</tr>
<tr>
<td>15</td>
<td>S</td>
<td>000000063</td>
<td>027744192</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>07</td>
</tr>
<tr>
<td>16</td>
<td>S</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
</tr>
<tr>
<td>17</td>
<td>P</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
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<tr>
<td>18</td>
<td>P</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
</tr>
</tbody>
</table>

**Log Highlights:**
- `78177792 sectors wiped with 7E`
- Comparison of original to clone Partition
- Sectors compared: 8401932
- Sectors match: 8401929
- Sectors differ: 3
- Bytes differ: 3
- Diffs range: 1, 36, 8226
- run start Mon May 7 14:53:14 2007
- run finish Mon May 7 15:06:39 2007
- elapsed time 0:13:25
- Normal exit
- Start: 05/07/07 03:42:41PM
- Total Sectors: 8,401,932
- Input Hash: BFF7D9C543390A2A9D7972C076B514
## Test Case DA-14-F32 EnCase 5.05f

### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

### Analysis:

Expected results not achieved
### Test Case DA-14-F32-ALT EnCase 5.05f

**Case Summary:**
DA-14 Create an unaligned clone from an image file.

**Assertions:**
- **AM-03** The tool executes in execution environment XE.
- **AO-12** If requested, a clone is created from an image file.
- **AO-13** A clone is created using access interface DST-AI to write to the clone device.
- **AO-14** If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
- **AO-17** If requested, any excess sectors on a clone destination device are not modified.
- **AO-23** If the tool logs any log significant information, the information is accurately recorded in the log file.

**Tester Name:** slm
**Test Host:** Joe
**Test Date:** Mon May 7 16:14:26 2007

**Drives:**
- **SRC (01-IDE)** dst (7e) other (ntfs)

<table>
<thead>
<tr>
<th>Source</th>
<th>Hash (SHA1)</th>
<th>Hash (MD5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>src</td>
<td>&lt;A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9&gt;</td>
<td>&lt;F458F673894753FA6A0EC0B8EC63848E&gt;</td>
</tr>
<tr>
<td>Setup:</td>
<td>78165360 total sectors (4002664320 bytes)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Serial #</th>
<th>N</th>
<th>Start LBA</th>
<th>Length</th>
<th>Boot</th>
<th>Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BB-00JHC0)</td>
<td>WD-WMAMC74171</td>
<td>1</td>
<td>000000063</td>
<td>020980827</td>
<td>0000/001/01 1023/254/63</td>
<td>0C Fat32X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>0020980890</td>
<td>057175335</td>
<td>1023/000/01 1023/254/63</td>
<td>0F extended</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>000000063</td>
<td>000032067</td>
<td>1023/000/01 1023/254/63</td>
<td>01 Fat12</td>
</tr>
<tr>
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<td></td>
<td>4</td>
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<td>020104515</td>
<td>1023/000/01 1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
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<td></td>
<td>5</td>
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<td>020104452</td>
<td>1023/000/01 1023/254/63</td>
<td>06 Fat16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>002136645</td>
<td>004192965</td>
<td>1023/000/01 1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
<td>000000063</td>
<td>004192902</td>
<td>1023/000/01 1023/254/63</td>
<td>16 other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td>006329610</td>
<td>008401995</td>
<td>1023/000/01 1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9</td>
<td>000000063</td>
<td>008401932</td>
<td>1023/000/01 1023/254/63</td>
<td>0B Fat32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>014731605</td>
<td>010490445</td>
<td>1023/000/01 1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11</td>
<td>000000063</td>
<td>014093082</td>
<td>1023/000/01 1023/254/63</td>
<td>03 Linux</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
<td>025222050</td>
<td>002104515</td>
<td>1023/000/01 1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13</td>
<td>000000063</td>
<td>042088967</td>
<td>1023/000/01 1023/254/63</td>
<td>02 Linux Swap</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14</td>
<td>029431080</td>
<td>027744255</td>
<td>1023/000/01 1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15</td>
<td>000000063</td>
<td>027744192</td>
<td>1023/000/01 1023/254/63</td>
<td>07 NTFS</td>
</tr>
<tr>
<td></td>
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<td>000000000</td>
<td>000000000</td>
<td>0000/000/00 0000/000/00</td>
<td>00 empty entry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00 0000/000/00</td>
<td>00 empty entry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00 0000/000/00</td>
<td>00 empty entry</td>
</tr>
</tbody>
</table>

- 1 020980827 sectors 10742183424 bytes
- 3 000032067 sectors 16418304 bytes
- 5 002104452 sectors 1077479424 bytes
- 7 004192902 sectors 2146765824 bytes
- 9 008401932 sectors 4301789184 bytes
- 11 010490382 sectors 5371075584 bytes
- 13 004008967 sectors 2154991104 bytes
- 15 027744192 sectors 14205026304 bytes

**Log Highlights:**

<table>
<thead>
<tr>
<th>Destination setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>78177792 sectors wiped with 7E</td>
</tr>
</tbody>
</table>

Comparison of original to clone Partition
- Sectors compared: 8401932
- Sectors match: 8401932
- Sectors differ: 0
- Bytes differ: 0
- Diffs range:
  - run start Tue May 8 13:51:30 2007
  - elapsed time 0:30:55
- Normal exit
- Start: 05/08/07 12:37:51PM
- Total Sectors: 8,401,932
- Input Hash: BFF7DC64C543390A2A9D7972C076B514
## Test Case DA-I4-F32-ALT EnCase 5.05f

### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

### Analysis:

Expected results achieved
5.2.37 DA-14-F32X

Test Case DA-14-F32X EnCase 5.05f

Case Summary:
DA-14 Create an unaligned clone from an image file.

Assertions:
AM-03 The tool executes in execution environment XE.
AO-12 If requested, a clone is created from an image file.
AO-13 A clone is created using access interface DST-AI to write to the clone device.
AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
AO-17 If requested, any excess sectors on a clone destination device are not modified.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

Tester Name: slm
Test Host: joe
Test Date: Wed Apr 25 16:08:34 2007
Drives: src(43) dst (7c) other (fat32)

Source
src hash (SHA1): < 888E2E7F7AD237DC97A732281DD93F825065E5871 >
src hash (MD5): < BC39C3FE7E95A8D779BA1665A5AEEF7 >
78125000 total sectors (40000000000 bytes)
Model (0BB-75JHC0 ) serial # ( WD-WMAMC46S88)

<table>
<thead>
<tr>
<th>N</th>
<th>Start LBA</th>
<th>Length</th>
<th>Start C/H/S</th>
<th>End C/H/S</th>
<th>boot</th>
<th>Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>000000063</td>
<td>020980827</td>
<td>0000/001/01</td>
<td>1023/254/63</td>
<td>0C</td>
<td>Fat32X</td>
</tr>
<tr>
<td>2</td>
<td>000000063</td>
<td>00032067</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>01</td>
<td>Fat12</td>
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<tr>
<td>5</td>
<td>000000063</td>
<td>00104452</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>06</td>
<td>Fat16</td>
</tr>
<tr>
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<td>00136645</td>
<td>004192965</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
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<tr>
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<td>000000063</td>
<td>004192902</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>16</td>
<td>other</td>
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<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
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<td>008401932</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
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<td>Fat32</td>
</tr>
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<td>010490445</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>11</td>
<td>000000063</td>
<td>010490382</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>83</td>
<td>Linux</td>
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<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>13</td>
<td>000000063</td>
<td>004208967</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>82</td>
<td>Linux swap</td>
</tr>
<tr>
<td>14</td>
<td>029431080</td>
<td>027712125</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>15</td>
<td>000000063</td>
<td>027712062</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>07</td>
<td>NTFS</td>
</tr>
<tr>
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<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>17</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>18</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
</tbody>
</table>

Log
Highlights:
78177792 sectors wiped with 7C
Comparison of original to clone Partition
Sectors compared: 20980827
Sectors match: 20980824
Sectors differ: 3
Bytes differ: 3
Diffs range: 1, 32, 10268
Source (20980827) has 1558305 fewer sectors than destination (22539132)
Zero fill: 0
Src Byte fill (43): 0
Dat Byte fill (7C): 0
Other fill: 0
Other no fill: 0
Zero fill range:
Src fill range:
## Test Case DA-14-F32X EnCase 5.05f

<table>
<thead>
<tr>
<th>Dst fill range:</th>
<th>20980827-22539131</th>
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</thead>
<tbody>
<tr>
<td>Other fill range:</td>
<td></td>
</tr>
<tr>
<td>Other not filled range:</td>
<td></td>
</tr>
<tr>
<td>run start</td>
<td>Thu Apr 26 15:13:48 2007</td>
</tr>
<tr>
<td>run finish</td>
<td>Thu Apr 26 15:46:43 2007</td>
</tr>
<tr>
<td>elapsed time</td>
<td>0:32:55</td>
</tr>
<tr>
<td>Normal exit</td>
<td></td>
</tr>
<tr>
<td>Start:</td>
<td>04/26/07 03:55:36PM</td>
</tr>
<tr>
<td>Total Sectors:</td>
<td>22,539,132</td>
</tr>
<tr>
<td>Input Hash:</td>
<td>5980CB0FA68E9862C65765DF50F00906</td>
</tr>
</tbody>
</table>

### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

### Analysis:

Expected results not achieved
## 5.2.38 DA-14-F32X-ALT

### Test Case DA-14-F32X-ALT EnCase 5.05f

#### Case Summary:
DA-14 Create an unaligned clone from an image file.

#### Assertions:
- **AM-03** The tool executes in execution environment XE.
- **AO-12** If requested, a clone is created from an image file.
- **AO-13** A clone is created using access interface DST-AI to write to the clone device.
- **AO-14** If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
- **AO-17** If requested, any excess sectors on a clone destination device are not modified.
- **AO-23** If the tool logs any log significant information, the information is accurately recorded in the log file.

#### Tester Name:
sim

#### Test Host:
Joe

#### Test Date:
Fri Apr 27 10:26:04 2007

#### Drives:
- **src** (43): dst (7c) other (fat32)

### Source Setup:
- **Model**: BB-75JHC0
- **Serial #**: WD-WMAW46588

<table>
<thead>
<tr>
<th>N</th>
<th>Start LBA</th>
<th>Length</th>
<th>Start C/H/S</th>
<th>End C/H/S</th>
<th>boot Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>020980827</td>
<td>0000/001/01</td>
<td>1023/254/63</td>
<td>0C Fat32X</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>020980890</td>
<td>0000/001/01</td>
<td>1023/254/63</td>
<td>0F extended</td>
<td></td>
</tr>
<tr>
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<td>000000063</td>
<td>000032067</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>01 Fat12</td>
</tr>
<tr>
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<td>000000063</td>
<td>002104452</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td>5</td>
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<td>1023/254/63</td>
<td>06 Fat16</td>
</tr>
<tr>
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<td>000000063</td>
<td>004192965</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td>7</td>
<td>000000063</td>
<td>00192902</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>16 other</td>
</tr>
<tr>
<td>8</td>
<td>006329610</td>
<td>008401995</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td>9</td>
<td>000000063</td>
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<td>1023/001/01</td>
<td>1023/254/63</td>
<td>08 Fat32</td>
</tr>
<tr>
<td>10</td>
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<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td>11</td>
<td>000000063</td>
<td>01490382</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>03 Linux</td>
</tr>
<tr>
<td>12</td>
<td>025222050</td>
<td>002104515</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td>13</td>
<td>000000063</td>
<td>04208967</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>02 Linux swap</td>
</tr>
<tr>
<td>14</td>
<td>029431080</td>
<td>027712125</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05 extended</td>
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<td>027712062</td>
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<td>07 NTFS</td>
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<tr>
<td>16</td>
<td>000000000</td>
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<td>0000/000/00</td>
<td>00 empty entry</td>
</tr>
<tr>
<td>17</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00 empty entry</td>
</tr>
<tr>
<td>18</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00 empty entry</td>
</tr>
</tbody>
</table>

#### Log Highlights:
- **Destination setup**: 1558305 fewer sectors than destination (22539132)
- **Zero fill**: 0
- **Src Byte fill (43)**: 0
- **Dat Byte fill (7c)**: 0
- **Other fill**: 0
- **Other no fill**: 0
- **Zero fill range**: 0
- **Src fill range**: 0

---

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Test Results for EnCase 5.05f June 2008
**Test Case DA-14-F32X-ALT EnCase 5.05f**

| Dst fill range: | 20980827-22539131 |
| Other fill range: | |
| Other not filled range: | |
| run start | Fri Apr 27 10:31:31 2007 |
| run finish | Fri Apr 27 11:03:56 2007 |
| elapsed time | 0:32:25 |
| Normal exit | |
| Start: | 04/27/07 11:03:14AM |
| Total Sectors: | 22,539,132 |
| Input Hash: | 5980CB0FA68E9862C65765DF50F00906 |

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

Analysis: Expected results achieved
**5.2.39 DA-14-FLOPPY**

<table>
<thead>
<tr>
<th>Case</th>
<th>DA-14 Create an unaligned clone from an image file.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary:</td>
<td></td>
</tr>
</tbody>
</table>
| Assertions: | AM-03 The tool executes in execution environment XE.  
AO-12 If requested, a clone is created from an image file.  
AO-13 A clone is created using access interface DST-AI to write to the clone device.  
AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.  
AO-17 If requested, any excess sectors on a clone destination device are not modified.  
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file. |
| Tester Name: | slm |
| Test Host: | joe |
| Test Date: | Thu Apr 19 17:27:40 2007 |
| Drives: | src(floppy) dst (floppy) other (fat32) |
| Source | src hash (SHA1): <e2863334ac7eaabc7c8a0d62eb0d3b3af29f2c40>  
src hash (MD5): <17f6a5925be2f38eedaf435ff8b6a6f4> |
| Setup: | Floppy disk |
| Log Highlights: | Destination setup  
2880 sectors wiped with 1  
Comparison of original to clone Drive |
| Start: | 04/19/07 06:36:50PM |
| Total Sectors: | 2,880 |
| Input Hash: | 17F6A5925BE2F38EEDAF435FF8B6A6F4 |
| 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 |
### Test Case DA-14-FW EnCase 5.05f

**Case Summary:**
DA-14 Create an unaligned clone from an image file.

**Assertions:**
- AM-03 The tool executes in execution environment XE.
- AO-12 If requested, a clone is created from an image file.
- AO-13 A clone is created using access interface DST-AI to write to the clone device.
- AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
- AO-17 If requested, any excess sectors on a clone destination device are not modified.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

**Tester Name:** mrmw

**Test Host:** Joe

**Test Date:** Tue Dec 11 15:58:29 2007

**Drives:**
- `src(01-IDE)`
- `dst (7B)`
- `other (01-FU)`

### Source Setup

**Model:** (BB=00JHCU )

<table>
<thead>
<tr>
<th>N</th>
<th>Start LBA</th>
<th>Length</th>
<th>Start C/H/S</th>
<th>End C/H/S</th>
<th>boot Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>1023/254/63</td>
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<td>1023/000/01</td>
<td>1023/254/63</td>
<td>0F extended</td>
</tr>
<tr>
<td>3</td>
<td>000000063</td>
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<td>1023/000/01</td>
<td>1023/254/63</td>
<td>01 Fat12</td>
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<tr>
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<td>05 extended</td>
</tr>
<tr>
<td>7</td>
<td>000000063</td>
<td>00192902</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>16 other</td>
</tr>
<tr>
<td>8</td>
<td>006329610</td>
<td>008401995</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td>9</td>
<td>000000063</td>
<td>008401932</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>0B Fat32</td>
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<td>010490445</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td>11</td>
<td>000000063</td>
<td>010490382</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>83 Linux</td>
</tr>
<tr>
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<td>004209030</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
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<td>1023/000/01</td>
<td>1023/254/63</td>
<td>82 Linux swap</td>
</tr>
<tr>
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<td>029431080</td>
<td>027744255</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05 extended</td>
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<td>1023/254/63</td>
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<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00 empty entry</td>
</tr>
<tr>
<td>17</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00 empty entry</td>
</tr>
<tr>
<td>18</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00 empty entry</td>
</tr>
</tbody>
</table>

### Log Highlights

- Destination setup
  - 78177792 sectors wiped with 7B
  - Comparison of original to clone Drive
  - Sectors compared: 78165360
  - Sectors match: 78165360
  - Sectors differ: 0
  - Bytes differ: 0
  - Diffs range
  - Source (78165360) has 12432 fewer sectors than destination (78177792)
  - Zero fill: 0
  - Src Byte fill (ED): 0
  - Dst Byte fill (7B): 12432
  - Other fill: 0
  - Other no fill: 0
  - Zero fill range:
### Test Case DA-14-FW EnCase 5.05f

**Src fill range:**  78165360-78177791  
**Dst fill range:**  78165360-78177791  
**Other fill range:**  
**Other not filled range:**  
0 source read errors, 0 destination read errors

**Start:** 12/11/07 05:15:28PM  
**Total Sectors:** 78,177,792  
**Input Hash:** F458F673894753FA6A0EC8B8EC63848E  
**Actual Date:** 12/06/07 12:53:47PM  
**File Integrity:** Completely Verified, 0 Errors  
**Acquisition Hash:** f458f673894753fa6a0ec8b8ec63848e  
**Verify Hash:** f458f673894753fa6a0ec8b8ec63848e  
**EnCase Version:** 5.05f  
**System Version:** Windows XP  
**Error Granularity:** 64  
**Read Errors:** 0  
**Missing Sector Errors:** 0  
**CRC Errors:** 0  
**Total Size:** 40,020,664,320 bytes (37.3GB)  
**Total Sectors:** 78,165,360  
**Settings:** fill none

### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

### Analysis: Expected results achieved
5.2.41 DA-14-HOT

**Test Case DA-14-HOT EnCase 5.05f**

**Case Summary:** DA-14 Create an unaligned clone from an image file.

**Assertions:**
- AM-03 The tool executes in execution environment XE.
- AO-12 If requested, a clone is created from an image file.
- AO-13 A clone is created using access interface DST-AI to write to the clone device.
- AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
- AO-17 If requested, any excess sectors on a clone destination device are not modified.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

**Tester Name:** mrmw

**Test Host:** Frank

**Test Date:** Wed Jun 13 11:05:41 2007

**Drives:** src(2A) dst (2E) other (01-FU and 01-FU)

**Source Setup:**
- `src hash (SHA256): <AE8E839101661367D92803D5F5D408268635EFD8A05F6EA633838CD3919F5ABA>`
- `src hash (SHA1): <F5F9F2903CA8B95F56E270FB2A722E791812S>`
- `src hash (MD5): <91E0AC905F682ECF6DE4E985889F819>`
- `17783249 total sectors (910523488 bytes)`
- `Model (QM39100TD-SCA) serial # (PCB=20-11671-06 HDAQM39100TD-SCA)`
- `1 P 000000063 017751762 0000/001/01 1023/254/63 Boot 07 NTFS`
- `2 P 000000000 000000000 0000/000/00 0000/000/00 0000/000/00 00 empty entry`
- `3 P 000000000 000000000 0000/000/00 0000/000/00 0000/000/00 00 empty entry`
- `4 P 000000000 000000000 0000/000/00 0000/000/00 0000/000/00 00 empty entry`
- `1 017751762 sectors 9088902144 bytes`

**Log Highlights:**
- Destination setup
- `17783249 sectors wiped with 2E`
- Comparision of original to clone Drive
- Sectors compared: 17783249
- Sectors match: 17783249
- Sectors differ: 0
- Bytes differ: 0
- Diffs range
  - 0 source read errors, 0 destination read errors
- `Actual Date: 06/13/07 10:26:15 AM`
- `File Integrity: Completely Verified, 0 Errors`
- `Acquisition Hash: 91e0ac905f682ecf6de4e985889f819`
- `Verify Hash: 91e0ac905f682ecf6de4e985889f819`
- `EnCase Version: 5.05f`
- `System Version: Windows XP`
- `Error Granularity: 64`
- `Read Errors: 0`
- `Missing Sector Errors: 0`
- `CRC Errors: 0`
- `Total Size: 9,105,023,488 bytes (8.5GB)`
- `Total Sectors: 17,783,249`
- `Settings: fill none`

**Results:**

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
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<tr>
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</tr>
<tr>
<td>AO-14 An unaligned clone is created.</td>
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</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>
<tr>
<td>Test Case DA-I4-HOT EnCase 5.05f</td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td></td>
</tr>
<tr>
<td>Analysis: Expected results achieved</td>
<td></td>
</tr>
</tbody>
</table>
5.2.42 DA-14-NTFS

**Test Case DA-14-NTFS EnCase 5.05f**

**Case Summary:**
DA-14 Create an unaligned clone from an image file.

**Assertions:**
- AM-03 The tool executes in execution environment XE.
- AO-12 If requested, a clone is created from an image file.
- AO-13 A clone is created using access interface DST-AI to write to the clone device.
- AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
- AO-17 If requested, any excess sectors on a clone destination device are not modified.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

**Tester Name:** mrmw

**Test Host:** Max

**Test Date:** Tue Jul 3 07:19:08 2007

**Drives:**
- `src(01)`
- `dst (03)`
- `other (01-FU)`

**Source Setup:**
- `src hash (SHA1): < A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9 >`
- `src hash (MD5): < F458F673894753FA6A0ECB8E63848E >`
- `78165360 total sectors (40020664320 bytes)`

**Model (0BB-00JHC0 ) serial # ( WD-WMAMC74171 )**

<table>
<thead>
<tr>
<th>No</th>
<th>Start LBA</th>
<th>Length</th>
<th>Start C/H/S</th>
<th>End C/H/S</th>
<th>boot Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>000000063</td>
<td>020980827</td>
<td>0000/001/01</td>
<td>1023/254/63</td>
<td>0C Fat32X</td>
</tr>
<tr>
<td>2</td>
<td>000000063</td>
<td>00032067</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>01 Fat12</td>
</tr>
<tr>
<td>4</td>
<td>0000032130</td>
<td>02104452</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>06 Fat16</td>
</tr>
<tr>
<td>6</td>
<td>00136645</td>
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<td>1023/254/63</td>
<td>05 extended</td>
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<tr>
<td>7</td>
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<td>1023/001/01</td>
<td>1023/254/63</td>
<td>16 other</td>
</tr>
<tr>
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<td>006329610</td>
<td>008401995</td>
<td>002104452</td>
<td>1023/001/01</td>
<td>08 extended</td>
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<tr>
<td>9</td>
<td>000000063</td>
<td>008401932</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>08 Fat32</td>
</tr>
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<td>00 empty entry</td>
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</table>

<table>
<thead>
<tr>
<th>No</th>
<th>Start LBA</th>
<th>Length</th>
<th>Start C/H/S</th>
<th>End C/H/S</th>
<th>Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>002104452</td>
<td>1023/001/01</td>
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<td>1023/001/01</td>
<td>05 extended</td>
</tr>
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<td>4</td>
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<td>1216765824</td>
<td>004209030</td>
<td>1023/001/01</td>
<td>05 extended</td>
</tr>
<tr>
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<td>004209030</td>
<td>1216765824</td>
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<td>1023/001/01</td>
<td>05 extended</td>
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<td>1216765824</td>
<td>004209030</td>
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<td>05 extended</td>
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<td>7</td>
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<td>1216765824</td>
<td>004209030</td>
<td>1023/001/01</td>
<td>05 extended</td>
</tr>
<tr>
<td>8</td>
<td>004209030</td>
<td>1216765824</td>
<td>004209030</td>
<td>1023/001/01</td>
<td>05 extended</td>
</tr>
<tr>
<td>9</td>
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<td>004209030</td>
<td>1023/001/01</td>
<td>05 extended</td>
</tr>
<tr>
<td>10</td>
<td>004209030</td>
<td>1216765824</td>
<td>004209030</td>
<td>1023/001/01</td>
<td>05 extended</td>
</tr>
</tbody>
</table>

**Excess destination partition sectors hash:**

```
CMD: /usr/bin/machash.csh da-14-ntfs Max mrmw /dev/sdb5 03 -before -winsize
7102513152 -new_log
SHA1 0 - 7102513151 = BFEBB2ACB8D7233BAFF31527F2D58D5301738656
SHA1 7102513152 - 14205026303 = 9FFDA7EE0AAB3EC807035BEBF2E6EE7CB6564DD74
```

**Log Highlights:**
Comparison of original to clone Partition
Sectors compared: 27744192
Sectors match: 27744152
Sectors differ: 40
Bytes differ: 4434
Diffs range: 610368-610399, 27744184-27744191
run start Tue Jul 3 11:28:38 2007
run finish Tue Jul 3 11:54:46 2007
elapsed time 0:26:8
Normal exit
Start: 07/03/07 10:44:07PM

---

August 2008 91 of 114 Test Results for EnCase 5.05f June 2008
### Test Case DA-14-NTFS EnCase 5.05f

- **Total Sectors:** 27,744,191
- **Input Hash:** 494A6EDB8A27AD9B5403E0CC89379956
- **Write Block:** 44 FastBloc2 FE

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

**Analysis:** Expected results not achieved

August 2008 92 of 114  Test Results for EnCase 5.05f June 2008
**5.2.43 DA-14-NTFS-ALT**

**Test Case DA-14-NTFS-ALT EnCase 5.05f**

**Case Summary:**
DA-14 Create an unaligned clone from an image file.

**Assertions:**
- AM-03 The tool executes in execution environment XE.
- AO-12 If requested, a clone is created from an image file.
- AO-13 A clone is created using access interface DST-AI to write to the clone device.
- AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
- AO-17 If requested, any excess sectors on a clone destination device are not modified.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

**Tester Name:** mrmw  
**Test Host:** Max  
**Test Date:** Tue Jul 3 07:22:01 2007  
**Drives:** src(01) dst (03) other (01-FU)

**Source Setup:**
- src hash (SHA1): <A48BB5665D6DC57C22DB68E2F723DA9AA8DF82B9>  
- src hash (MD5): <F458F673894753FA6ADEC0B8EC6384BE>  
- 78165360 total sectors (40020664320 bytes)

<table>
<thead>
<tr>
<th>N</th>
<th>Start LBA</th>
<th>Length</th>
<th>Start C/H/S</th>
<th>End C/H/S</th>
<th>boot</th>
<th>Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P</td>
<td>000000063</td>
<td>020980827</td>
<td>0000/001/00</td>
<td>1023/254/63</td>
<td>0C Fat32X</td>
</tr>
<tr>
<td>1</td>
<td>X</td>
<td>00000063</td>
<td>0000032067</td>
<td>020980827/0000/001/00</td>
<td>1023/254/63</td>
<td>0F extended</td>
</tr>
<tr>
<td>4</td>
<td>X</td>
<td>0000032130</td>
<td>002104452</td>
<td>1023/000/001/00</td>
<td>1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td>6</td>
<td>X</td>
<td>002136645</td>
<td>04192965</td>
<td>1023/000/001/00</td>
<td>1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td>7</td>
<td>S</td>
<td>00000063</td>
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<td>1023/000/001/00</td>
<td>1023/254/63</td>
<td>16 other</td>
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<tr>
<td>8</td>
<td>S</td>
<td>006329690</td>
<td>008401995</td>
<td>1023/000/001/00</td>
<td>1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td>9</td>
<td>S</td>
<td>00000063</td>
<td>008401932</td>
<td>1023/000/001/00</td>
<td>1023/254/63</td>
<td>0B Fat32</td>
</tr>
<tr>
<td>10</td>
<td>X</td>
<td>014731605</td>
<td>014904044</td>
<td>1023/000/001/00</td>
<td>1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td>11</td>
<td>S</td>
<td>00000063</td>
<td>014903832</td>
<td>1023/000/001/00</td>
<td>1023/254/63</td>
<td>83 Linux</td>
</tr>
<tr>
<td>12</td>
<td>X</td>
<td>025222050</td>
<td>004209030</td>
<td>1023/000/001/00</td>
<td>1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td>13</td>
<td>S</td>
<td>00000063</td>
<td>04208967</td>
<td>1023/000/001/00</td>
<td>1023/254/63</td>
<td>82 Linux swap</td>
</tr>
<tr>
<td>14</td>
<td>X</td>
<td>029431080</td>
<td>027744255</td>
<td>1023/000/001/00</td>
<td>1023/254/63</td>
<td>05 extended</td>
</tr>
<tr>
<td>15</td>
<td>S</td>
<td>00000063</td>
<td>027744192</td>
<td>1023/000/001/00</td>
<td>1023/254/63</td>
<td>07 NTFS</td>
</tr>
<tr>
<td>16</td>
<td>S</td>
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<td>00000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00 empty entry</td>
</tr>
<tr>
<td>17</td>
<td>P</td>
<td>00000000</td>
<td>00000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00 empty entry</td>
</tr>
<tr>
<td>18</td>
<td>P</td>
<td>00000000</td>
<td>00000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00 empty entry</td>
</tr>
</tbody>
</table>

**Excess destination partition sectors hash:**
- CMD: /usr/bin/machash.csh da-14-ntfs-alt Max mrmw /dev/hdb6 03 -before -winsize 7102513152 -new_log
- SHA1 0 - 7102513151 = 14FB4A484DFB46EF7251C044E8822F99DE1C3B1
- SHA1 7102513152 - 14FB4A484DFB46EF7251C044E8822F99DE1C3B1 = 7EB5317D6309F8B2C86BE79E0582192459DB9137A

**Log Highlights:**
- Comparison of original to clone Partition
- Sectors compared: 27744192
- Sectors match: 27744184
- Sectors differ: 8
- Bytes differ: 3501
- Diffs range: 27744184-27744191
- run start Tue Jul 3 09:47:23 2007
- run finish Tue Jul 3 10:13:35 2007
- elapsed time 0:26:12
- Normal exit
- Start: 07/03/07 09:23:45AM
Test Case DA-I4-NTFS-ALT EnCase 5.05f

- Total Sectors: 27,744,191
- Input Hash: 494A6ED8A827AD9B5403E0CC89379956
- Write Block: 44 FastBloc2 FE

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

Analysis: Expected results achieved
# Case Summary:
DA-14 Create an unaligned clone from an image file.

## Assertions:
- **AM-03** The tool executes in execution environment XE.
- **AO-12** If requested, a clone is created from an image file.
- **AO-13** A clone is created using access interface DST-AI to write to the clone device.
- **AO-14** If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
- **AO-17** If requested, any excess sectors on a clone destination device are not modified.
- **AO-23** If the tool logs any log significant information, the information is accurately recorded in the log file.

## Tester Information:
- **Tester Name:** mrmw
- **Test Host:** Frank
- **Test Date:** Fri Jun 22 07:00:33 2007

## Drive Information:
- **Drives:**
  - src (43)
  - dst (85)
  - other (02-fu)

## Source Information:
- **Model (0BB-75JHC0)**
- **serial # (WD-WMA4C46588)**
- **N Start LBA Length Start C/H/S End C/H/S boot Partition type**
  - 1 0 000000063 020988027 0000/001/01 1023/254/63 0C Fat32X
  - 2 0 020980890 057143205 1023/000/01 1023/254/63 0F extended
  - 3 0 000000063 000032067 1023/001/01 1023/254/63 01 Fat12
  - 4 0 00032130 02104515 1023/000/01 1023/254/63 05 extended
  - 5 0 000000063 02104452 1023/001/01 1023/254/63 06 Fat16
  - 6 0 00136645 04192965 1023/001/01 1023/254/63 05 extended
  - 7 0 000000063 04192902 1023/001/01 1023/254/63 16 other
  - 8 0 006329610 00801995 1023/000/01 1023/254/63 05 extended
  - 9 0 000000063 00801932 1023/001/01 1023/254/63 0B Fat32
  - 10 0 014731605 014090445 1023/001/01 1023/254/63 05 extended
  - 11 0 000000063 01409382 1023/001/01 1023/254/63 83 Linux
  - 12 0 025222050 002104515 1023/000/01 1023/254/63 05 extended
  - 13 0 000000063 002104452 1023/001/01 1023/254/63 05 extended
  - 14 0 029431080 027712125 1023/001/01 1023/254/63 05 extended
  - 15 0 000000063 027712062 1023/001/01 1023/254/63 07 NTFS
  - 16 0 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
  - 17 0 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
  - 18 0 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
  - 19 0 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
- **Source (78125000) has 78176488 fewer sectors than destination (156301488)**
- **Zero fill:** 0
- **Src Byte fill (43):** 0
- **Dst Byte fill (85):** 78176488
- **Other fill:** 0
- **Other no fill:** 0

## Destination Information:
- **Destination setup**
  - 156301488 sectors wiped with 85

## Comparison:
- **Comparison of original to clone Drive**
- **Sectors compared:** 78125000
- **Sectors match:** 78125000
- **Sectors differ:** 0
- **Bytes differ:** 0
- **Diffs range:**
- **Source (78125000) has 78176488 fewer sectors than destination (156301488)**
- **Zero fill:** 0
- **Src Byte fill (43):** 0
- **Dst Byte fill (85):** 78176488
- **Other fill:** 0
- **Other no fill:** 0
- **Zero fill range:**
## Test Case DA-14-PASSWORD EnCase 5.05f

<table>
<thead>
<tr>
<th>Src fill range:</th>
<th>78125000-156301487</th>
</tr>
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<tbody>
<tr>
<td>Dst fill range:</td>
<td>78125000-156301487</td>
</tr>
<tr>
<td>Other fill range:</td>
<td>0</td>
</tr>
<tr>
<td>Other not filled range:</td>
<td>0</td>
</tr>
</tbody>
</table>

0 source read errors, 0 destination read errors

Start: 06/22/07 07:10:54AM
Total Sectors: 156,301,488
Input Hash: BC39C3F7EE7A50E77B9BA1E65A5AEEF7
Actual Date: 06/13/07 07:28:22AM
File Integrity: Completely Verified, 0 Errors
Acquisition Hash: bc39c3f7ee7a50e77b9ba1e65a5aeeef7
Verify Hash: bc39c3f7ee7a50e77b9ba1e65a5aeeef7
EnCase Version: 5.05f
System Version: Windows XP
Error Granularity: 64
Read Errors: 0
Missing Sector Errors: 0
CRC Errors: 0
Total Size: 40,000,000,000 bytes (37.3GB)
Total Sectors: 78,125,000
Settings: fill none

## Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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 A1.</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>
</tbody>
</table>

## Analysis:

Expected results achieved
5.2.45 DA-14-SCSI

Test Case DA-14-SCSI EnCase 5.05f

Case Summary: DA-14 Create an unaligned clone from an image file.

Assertions:
- AM-03 The tool executes in execution environment XE.
- AO-12 If requested, a clone is created from an image file.
- AO-13 A clone is created using access interface DST-AI to write to the clone device.
- AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
- AO-17 If requested, any excess sectors on a clone destination device are not modified.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

Tester Name: mrmw
Test Host: Freddy
Test Date: Fri Nov 30 13:01:10 2007
Drives: src(2A) dst (2E) other (06-FU)

Source Setup:
- src hash (SHA256): <AE8E839101661367D92803D5F5D408268635EFD8A05FEA63838C4C39195A8>
- src hash (SHA1): <F5F9F2903DCA885F63E70FB22A722E7918125>
- src hash (MD5): <91E0AC905F682E6F6DE9E98350898B19>
- 17783249 total sectors (9105023488 bytes)
- Model (QM39100TD-SCA) serial # (PCB=20-116711-06 HDAQM39100TD-SCA)

N Start LBA Length Start C/H/S End C/H/S boot Partition type
1 P 0000000063 017751762 0000/001/01 1023/254/63 Boot 07 NTFS
2 P 0000000000 0000000000 0000/000/00 0000/000/00 00 empty entry
3 P 0000000000 0000000000 0000/000/00 0000/000/00 00 empty entry
4 P 0000000000 0000000000 0000/000/00 0000/000/00 00 empty entry
1 017751762 sectors 9088902144 bytes

Log Highlights:
- Destination setup
  - 17783249 sectors wiped with 2A
- Comparision of original to clone Drive
  - Sectors compared: 17783249
  - Sectors match: 17783249
  - Sectors differ: 0
  - Bytes differ: 0
  - Diffs range
    - 0 source read errors, 0 destination read errors

Start: 11/30/07 01:37:24PM
Total Sectors: 17,783,249
Input Hash: 91E0AC905F682E6F6DE4E98350898B19
Actual Date:11/30/07 11:34:50AM
File Integrity: Completely Verified, 0 Errors
Acquisition Hash:91e0ac905f682ecf6e4e9835089b519
Verify Hash:91e0ac905f682ecf6e4e9835089b519
EnCase Version:5.05f
System Version:Windows XP
Error Granularity:64
Read Errors:0
Missing Sector Errors:0
CRC Errors:0
Total Size:9,105,023,488 bytes (8.5GB)
Total Sectors:17,783,249
Settings: fill none

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>Test Case DA-14-SCSI EnCase 5.05f</td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td></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>
</tbody>
</table>

**Analysis:** Expected results achieved
## DA-14-THUMB

**Test Case DA-14-THUMB EnCase 5.05f**

**Case Summary:**
DA-14 Create an unaligned clone from an image file.

**Assertions:**
- **AM-03** The tool executes in execution environment XE.
- **AO-12** If requested, a clone is created from an image file.
- **AO-13** A clone is created using access interface DST-AI to write to the clone device.
- **AO-14** If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
- **AO-17** If requested, any excess sectors on a clone destination device are not modified.
- **AO-23** If the tool logs any log significant information, the information is accurately recorded in the log file.

**Tester Name:** sim
**Test Host:** joe
**Test Date:** Mon Apr 23 13:03:39 2007
**Drives:** src(d5-thumb) dst (d7-thumb) other (-new_log)

### Source Setup:
- src hash (SHA1): `< D68520EF74A336E49DC5F83615B70B8FC53E38A >`
- src hash (MD5): `< C843593624B2B878596D8760B19954 >`
- 505856 total sectors (258998272 bytes)
- Model (usb2.0Flash Disk) serial #: ()

### Log Highlights:
- Destination setup
  - 4001760 sectors wiped with D7
- Comparison of original to clone Drive
  - Sectors compared: 505856
  - Sectors match: 505856
  - Sectors differ: 0
  - Bytes differ: 0
  - Diffs range
    - Source (505856) has 3495904 fewer sectors than destination (4001760)
    - Zero fill: 0
    - Src Byte fill (D5): 0
    - Dst Byte fill (D7): 3495904
    - Other fill: 0
    - Other no fill: 0
    - Zero fill range: 0
    - Src fill range: 505856-4001759
    - Other fill range: 0
    - Other not filled range: 0
    - 0 source read errors, 0 destination read errors
- Start: 04/23/07 02:23:07PM
- Total Sectors: 4,001,760
- Input Hash: C843593624B2B878596D8760B19954

### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>Test Case DA-14-THUMB EnCase 5.05f</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------</td>
<td></td>
</tr>
<tr>
<td>Analysis: Expected results achieved</td>
<td></td>
</tr>
</tbody>
</table>

Test Results for EnCase 5.05f June 2008
Case Summary: DA-14 Create an unaligned clone from an image file.

Assertions:
- AM-03 The tool executes in execution environment XE.
- AO-12 If requested, a clone is created from an image file.
- AO-13 A clone is created using access interface DST-AI to write to the clone device.
- AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
- AO-17 If requested, any excess sectors on a clone destination device are not modified.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

Tester Name: mrmw
Test Host: Freddy
Test Date: Fri Nov 30 17:01:26 2007

Source:
- src hash (SHA1): < 888E2E7F7AD237DC7A732281DD93F325065E5871 >
- src hash (MD5): < BC39C3F7EE7A50B77B9BA1E65A5AEEF7 >

Model (0BB-75JHC0 ) serial # ( WD-WHMAC46588)

N Start LBA Length Start C/H/S End C/H/S boot Partition type
1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X
2 X 000000063 020980827 0000/001/01 1023/254/63 0F extended
3 X 000000063 00032206 0000/001/01 1023/254/63 0F extended
4 X 000000063 001204515 0000/001/01 1023/254/63 05 extended
5 S 000000063 002104452 1023/000/01 1023/254/63 06 Fat16
6 X 000136645 00192965 1023/000/01 1023/254/63 05 extended
7 S 000000063 00192902 1023/000/01 1023/254/63 16 other
8 X 000329610 008401995 1023/000/01 1023/254/63 05 extended
9 S 000000063 008401932 1023/000/01 1023/254/63 0B Fat32
10 X 014731605 014094045 1023/000/01 1023/254/63 05 extended
11 S 000000063 01409382 1023/000/01 1023/254/63 83 Linux
12 X 025222050 002104515 1023/000/01 1023/254/63 05 extended
13 S 000000063 002104452 1023/000/01 1023/254/63 82 Linux swap
14 X 029431080 027712152 1023/000/01 1023/254/63 05 extended
15 S 000000063 027712062 1023/000/01 1023/254/63 07 NTFS
16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
19 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
20 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry

Log Highlights:
- Destination setup 78177792 sectors wiped with 7C
- Comparison of original to clone Drive
- Sectors compared: 78125000
- Sectors match: 78125000
- Sectors differ: 0
- Bytes differ: 0
- Diffs range
- Source (78125000) has 52792 fewer sectors than destination (78177792)
- Zero fill: 0
- Src Byte fill (43): 0
- Dst Byte fill (7C): 52792
- Other fill: 0
- Other no fill: 0
- Zero fill range:
### Test Case DA-I4-UNCOMPRESSED EnCase 5.05f

Test Case Details:
- **Src fill range:**
- **Dst fill range:** 78125000-78177791
- **Other fill range:**
- **Other not filled range:**

- **0 source read errors, 0 destination read errors**

- **Start:** 12/03/07 06:53:12AM
- **Total Sectors:** 78,177,792
- **Input Hash:** BC39C3F7EE7A50E77B9BA1E65A5AEEF7
- **Actual Date:** 11/30/07 04:30:48PM
- **Acquisition Hash:** bc39c3f7ee7a50e77b9ba1e65a5aeeef7
- **EnCase Version:** 5.05f
- **System Version:** Windows 2003 Server
- **Error Granularity:** 64
- **Read Errors:** 0
- **Missing Sector Errors:** 0
- **CRC Errors:** 0
- **Total Size:** 40,000,000,000 bytes (37.3GB)
- **Total Sectors:** 78,125,000
- **Settings:** fill none

### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<tr>
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<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>
</tbody>
</table>

### Analysis:

Expected results achieved
DA-14-USB

Test Case DA-14-USB EnCase 5.05f

Case Summary:
DA-14 Create an unaligned clone from an image file.

Assertions:
AM-03 The tool executes in execution environment XE.
AO-12 If requested, a clone is created from an image file.
AO-13 A clone is created using access interface DST-AI to write to the clone device.
AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
AO-17 If requested, any excess sectors on a clone destination device are not modified.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

Tester Name: sim
Test Host: joe
Test Date: Tue May 8 15:10:28 2007
Drives: src(01-ide) dst (7e) other (none)

Source:
Setup:
Model (BB-00HJCUDA serial # ( WD-9MAC74171))

N Start LBA Length Start C/H/S End C/H/S boot Partition type
1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X
2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended
3 S 000000063 000032067 1023/000/01 1023/254/63 01 Fat12
4 X 0000032130 002104452 1023/000/01 1023/254/63 05 extended
5 S 000000063 002104452 1023/001/01 1023/254/63 06 Fat16
6 X 002136645 004192902 1023/001/01 1023/254/63 05 extended
7 S 000000063 004192902 1023/001/01 1023/254/63 16 other
8 X 006329610 008401932 1023/001/01 1023/254/63 0B Fat32
9 S 000000063 008401932 1023/001/01 1023/254/63 08 Fat32
10 X 014731605 027744192 1023/001/01 1023/254/63 07 NTFS
11 S 000000063 027744192 1023/001/01 1023/254/63 0B Fat32
12 X 029431080 035660000 1023/000/01 1023/254/63 05 extended
13 S 000000063 035660000 1023/000/01 1023/254/63 07 NTFS
14 S 000000063 035660000 1023/000/01 1023/254/63 00 empty entry
15 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
16 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
19 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
20 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry

Log Highlights:
8717792 sectors wiped with 7E

Comparison of original to clone Drive
Sectors compared: 78165360
Sectors match: 78165360
Sectors differ: 0
Bytes differ: 0
Diffs range
Source (78165360) has 12432 fewer sectors than destination (78177792)
Zero fill: 0
Src Byte fill (01): 0
Dst Byte fill (7E): 12432
Other fill: 0
Other no fill: 0
Zero fill range:

August 2008 103 of 114 Test Results for EnCase 5.05f June 2008
**Test Case DA-14-USB EnCase 5.05f**

Src fill range: 78165360-78177791  
Dst fill range: 78165360-78177791  
Other fill range: 0  
Other not filled range: 0  
0 source read errors, 0 destination read errors

Start: 05/09/07 11:16:36AM  
Total Sectors: 78,177,792  
Input Hash: F458F673894753FA6A0EC8B8EC63848E

### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
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<tr>
<td>AM-03 Execution environment is XE.</td>
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<td>AO-12 A clone is created from an image file.</td>
<td>as expected</td>
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<tr>
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</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>
</tbody>
</table>

### Analysis:  
Expected results achieved
Test Case DA-17 EnCase 5.05f

Case Summary: DA-17 Create a truncated clone from an image file.

Assertions:
- AM-03 The tool executes in execution environment XE.
- AO-12 If requested, a clone is created from an image file.
- AO-13 A clone is created using access interface DST-AI to write to the clone device.
- AO-19 If there is insufficient space to create a complete clone, a truncated clone is created using all available sectors of the clone device.
- AO-20 If a truncated clone is created, the tool notifies the user.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

Tester Name: mrmw
Test Host: Freddy
Test Date: Wed May 23 15:04:54 2007
Drives: src(92) dst (65) other (02-fu)

Source Setup:
- src hash (SHA1): < 63E6F7BD3040A8ADA2CF8FBF6A805B76DF10481 >
- src hash (MD5): < E095DD1BD066E603153A3FE1A2F3E >
- 58633344 total sectors (3002072128 bytes)
- 58167/015/63 (max cyl/hd values)
- 58168/016/63 (number of cyl/hd)
- IDE disk: Model (WD WD300BB-00CA0) serial # (WD-WMA8H214350)
- N Start LBA Length Start C/H/S End C/H/S boot Partition type
  1 P 000000063 058605057 0000/001/01 1023/254/63 Boot 07 NTFS
  2 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
  3 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
  4 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
- 1 058605057 sectors 30005789184 bytes

Hashes with DCO in place:
- md5:525963C6789423396FE1F3202A8CBD04
- sha1:55A3CFE75687B0034DCC5E71F7D7A477D8681B781

Log Highlights:
- Destination setup 12594960 sectors wiped with 65
- Comparison of original to clone Drive
- Sectors compared: 12594960
- Sectors match: 12594960
- Bytes differ: 0
- Diffs range 0 source read errors, 0 destination read errors

Actual Date: 05/23/07 03:54:07PM
File Integrity: Completely Verified, 0 Errors
Acquisition Hash: 525963c6789423396fe1f3202a8cbb04
Verify Hash: 525963c6789423396fe1f3202a8cbb04
EnCase Version: 5.05f
System Version: Windows XP
Error Granularity: 64
Read Errors: 0
Missing Sector Errors: 0
CRC Errors: 0
Total Size: 22,018,245,120 bytes (25.2GB)
Total Sectors: 52,770,010
Settings: fill none size cd
Write Block: tableau 32 FW800

Results:

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<th>Assertion &amp; Expected Result</th>
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<tr>
<td>AO-12 A clone is created from an image file.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-13 Clone created using interface AI.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-19 Truncated clone is created.</td>
<td>as expected</td>
</tr>
<tr>
<td>Test Case DA-17 EnCase 5.05f</td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td></td>
</tr>
<tr>
<td>AO-20 User notified that clone is truncated. as expected</td>
<td></td>
</tr>
<tr>
<td>AO-23 Logged information is correct. as expected</td>
<td></td>
</tr>
</tbody>
</table>

Analysis: Expected results achieved
5.2.50 DA-22-ATA28

Test Case DA-22-ATA28 EnCase 5.05f

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.
AO-12 If requested, a clone is created from an image file.
AO-13 A clone is created using access interface DST-AI to write to the clone device.
AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
AO-18 If requested, a benign fill is written to excess sectors of a clone.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

Tester Name: mrmw
Test Host: frank
Test Date: Thu May 24 13:43:22 2007
Drives: src(43) dst (21) other (01-fu)

Source:
src hash (SHA1): < 888E2E7F7AD237DC7A092281DD93F325065E5871 >
src hash (MD5): < BC39C3F7EE7A50E77B9BA1665A5AEEF7 >
78125000 total sectors (40000000000 bytes)
Model (0BB-75JHC0 ) serial # ( WD-WBAMC46588)
N Start C/H/S Length    Start C/H/S End C/H/S   boot Partition type
1 P 000000063 020980827 0000/001/01 1023/254/63      0C Fat32X
2 X 020980890 057143205 1023/000/01 1023/254/63      0F extended
3 S 000000063 000032067 1023/000/01 1023/254/63      01 Fat12
4 X 000032130 000104452 1023/000/01 1023/254/63      05 extended
5 S 000000063 000104452 1023/000/01 1023/254/63      06 Fat16
6 X 000135645 001929365 1023/000/01 1023/254/63      05 extended
7 S 000000063 001929365 1023/000/01 1023/254/63      05 extended
8 x 0006329610 008401995 1023/000/01 1023/254/63      05 extended
9 S 000000063 008401932 1023/000/01 1023/254/63      08 Fat32
10 x 014731605 010490445 1023/000/01 1023/254/63      05 extended
11 S 000000063 010490382 1023/000/01 1023/254/63      83 Linux
12 x 025222050 004209030 1023/000/01 1023/254/63      05 extended
13 S 000000063 004208967 1023/000/01 1023/254/63      82 Linux swap
14 x 029431080 027712125 1023/000/01 1023/254/63      05 extended
15 S 000000063 027712062 1023/000/01 1023/254/63      07 NTFS
16 S 000000000 000000000 0000/000/00 0000/000/00      00 empty entry
17 P 000000000 000000000 0000/000/00 0000/000/00      00 empty entry
18 P 000000000 000000000 0000/000/00 0000/000/00      00 empty entry
1 020980827 sectors 10742183424 bytes
3 000032067 sectors 16418304 bytes
5 000104452 sectors 1077479424 bytes
7 0004192902 sectors 2146765824 bytes
9 008401932 sectors 4301789184 bytes
11 010490382 sectors 5371075584 bytes
13 004208967 sectors 2154991104 bytes
15 027712062 sectors 14188575744 bytes

Log Highlights:
195813072 sectors wiped with 21

Comparison of original to clone Drive
Sectors compared: 78125000
Sectors match: 78125000
Sectors differ: 0
Bytes differ: 0
Diffs range
Source (78125000) has 117688072 fewer sectors than destination (195813072)
Zero fill: 117688072
Src Byte fill (43): 0
Dat Byte fill (21): 0
Other fill: 0
Other no fill: 0
Zero fill range: 78125000-195813071
Src fill range: 0-0

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107 of 114  Test Results for EnCase 5.05f June 2008
### Test Case DA-22-ATA28 EnCase 5.05f

- Dst fill range:
- Other fill range:
- Other not filled range:
- 0 source read errors, 0 destination read errors

- Actual Date: 05/25/07 02:14:22PM
- File Integrity: Completely Verified, 0 Errors
- Acquisition Hash: bc39c3f7ee7a50e77b9ba1e65a5aeef7
- Verify Hash: bc39c3f7ee7a50e77b9ba1e65a5aeef7
- EnCase Version: 5.05f
- Error Granularity: 64
- Read Errors: 0
- Missing Sector Errors: 0
- CRC Errors: 0
- Total Size: 40,000,000,000 bytes (37.3GB)
- Total Sectors: 78,125,000
- Settings: fill 00 size cd

### Results:

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<thead>
<tr>
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</thead>
<tbody>
<tr>
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<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>
</tbody>
</table>

### Analysis:
- Expected results achieved
5.2.51 DA-22-F16

Test Case DA-22-F16 EnCase 5.05f

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.
- AO-12 If requested, a clone is created from an image file.
- AO-13 A clone is created using access interface DST-AI to write to the clone device.
- AO-14 If an unaligned clone is created, each sector written to the clone is accurately written to the same disk address on the clone that the sector occupied on the digital source.
- AO-18 If requested, a benign fill is written to excess sectors of a clone.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

Tester Name: mrmw
Test Host: Frank
Test Date: Wed Oct 31 17:33:34 2007
Drives: src(43) dst (09-IDE) other (01-FU)

Source
- src hash (SHA1): < 888E2E7F7AD237DC7A732281DD93F325065E5871 >
- src hash (MD5): < BC39C3F7EE7A50E77B9BA1E65A5AAEF7 >
- 78125000 total sectors (40000000000 bytes)

Model (0BB-75JHC0) serial # (WD-WMANC46588)

<table>
<thead>
<tr>
<th>N</th>
<th>Start LBA</th>
<th>Length</th>
<th>Start C/H/S</th>
<th>End C/H/S</th>
<th>boot</th>
<th>Partition type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>020980890</td>
<td>057143205</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>0C</td>
<td>Fat32X</td>
</tr>
<tr>
<td>2</td>
<td>000000063</td>
<td>000032067</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>01</td>
<td>Fat12</td>
</tr>
<tr>
<td>4</td>
<td>000032130</td>
<td>002104515</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>5</td>
<td>000000063</td>
<td>002104452</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>06</td>
<td>Fat16</td>
</tr>
<tr>
<td>6</td>
<td>002136645</td>
<td>004192965</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>7</td>
<td>000000063</td>
<td>004192902</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>16</td>
<td>other</td>
</tr>
<tr>
<td>8</td>
<td>006329610</td>
<td>008401995</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
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<tr>
<td>9</td>
<td>000000063</td>
<td>008401932</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>0B</td>
<td>Fat32</td>
</tr>
<tr>
<td>10</td>
<td>014731605</td>
<td>010490445</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>11</td>
<td>000000063</td>
<td>010490382</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>83</td>
<td>Linux</td>
</tr>
<tr>
<td>12</td>
<td>025222050</td>
<td>004209030</td>
<td>1023/000/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>13</td>
<td>000000063</td>
<td>004208967</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>82</td>
<td>Linux swap</td>
</tr>
<tr>
<td>14</td>
<td>029431080</td>
<td>027712125</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>15</td>
<td>000000063</td>
<td>027712062</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>07</td>
<td>NTFS</td>
</tr>
<tr>
<td>16</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>17</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>18</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>19</td>
<td>020980827</td>
<td>1074218344</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>20</td>
<td>029431080</td>
<td>027712125</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>05</td>
<td>extended</td>
</tr>
<tr>
<td>21</td>
<td>000000063</td>
<td>027712062</td>
<td>1023/001/01</td>
<td>1023/254/63</td>
<td>07</td>
<td>NTFS</td>
</tr>
<tr>
<td>22</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
<tr>
<td>23</td>
<td>000000000</td>
<td>000000000</td>
<td>0000/000/00</td>
<td>0000/000/00</td>
<td>00</td>
<td>empty entry</td>
</tr>
</tbody>
</table>

Log

Destination setup

23444165 sectors wiped with 9
Comparison of original to clone Partition

Sectors compared: 2104452
Sectors match: 2104452
Sectors differ: 0
Bytes differ: 0
Diffs range:
Source (2104452) has 2506140 fewer sectors than destination (4610592)
Zero fill: 0
Src Byte fill (43): 0
Dst Byte fill (09): 0
Other fill: 2506140
Other no fill: 0
Zero fill range: Src fill range:
### Test Case DA-22-F16 EnCase 5.05f

<table>
<thead>
<tr>
<th>Dst fill range: 2104452-4610591</th>
<th>Other fill range: 2104452-4610591</th>
</tr>
</thead>
<tbody>
<tr>
<td>run start Thu Nov 1 13:56:52 2007</td>
<td>run finish Thu Nov 1 14:00:26 2007</td>
</tr>
<tr>
<td>elapsed time 0:3:34</td>
<td>Normal exit</td>
</tr>
<tr>
<td>Total Capacity: 1,077,479,424 bytes (1GB)</td>
<td>Total Clusters: 2,104,452</td>
</tr>
<tr>
<td>Unallocated: 1,077,479,424 bytes (1GB)</td>
<td>Actual Date: 09/25/07 03:08:01PM</td>
</tr>
<tr>
<td>File Integrity: Completely Verified, 0 Errors</td>
<td>Acquisition Hash: 37e81ff31c3cb38aa48b2237500908e</td>
</tr>
<tr>
<td>Verify Hash: 37e81ff31c3cb38aa48b2237500908e</td>
<td>EnCase Version: 5.05f</td>
</tr>
<tr>
<td>Read Errors: 0</td>
<td>Missing Sector Errors: 0</td>
</tr>
<tr>
<td>CRC Errors: 0</td>
<td>Total Size: 1,077,479,424 bytes (1GB)</td>
</tr>
<tr>
<td>Total Sectors: 2,104,452</td>
<td>Settings: fill 5A</td>
</tr>
</tbody>
</table>

### Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

### Analysis:
Expected results achieved
5.2.52 DA-24

Test Case DA-24 EnCase 5.05f

Case Summary: DA-24 Verify a valid image.

Assertions:
- AM-03 The tool executes in execution environment XE.
- AO-06 If the tool performs an image file integrity check on an image file that has not been changed since the file was created, the tool shall notify the user that the image file has not been changed.
- AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

Tester Name: mrmw

Test Host: Freddy

Test Date: Fri May 25 17:51:24 2007

Drives:
- src(01) dst (none) other (02-fu)

Source Setup:
- src hash (SHA1): <A48BB56656DC57C22DB668E2BF723DA9AA8DF82B9>
- src hash (MD5): <F458F673894753FA6A0EC8B0BEC6584BE>
- 78165360 total sectors (40020664320 bytes)
- Model (0BB-00JHC0) serial # (WD-WMAMC74171)

N   Start LBA Length    Start C/H/S End C/H/S   boot Partition type
1 P 000000063 020980827 0000/001/01 1023/254/63 0C Fat32X
2 X 020980890 057175335 1023/000/01 1023/254/63 0F extended
3 S 000000063 000032067 1023/001/01 1023/254/63 01 Fat12
4 x 000032130 002104515 1023/000/01 1023/254/63 05 extended
5 S 000000063 02104452 1023/001/01 1023/254/63 06 Fat16
6 x 02136645 04192965 1023/000/01 1023/254/63 05 extended
7 S 000000063 04192902 1023/001/01 1023/254/63 16 other
8 x 006329610 008401995 1023/000/01 1023/254/63 05 extended
9 S 000000063 008401932 1023/001/01 1023/254/63 0B Fat32
10 x 014731605 010490445 1023/000/01 1023/254/63 05 extended
11 S 000000063 010490382 1023/001/01 1023/254/63 83 Linux
12 x 025222050 004209030 1023/000/01 1023/254/63 05 extended
13 S 000000063 004208967 1023/001/01 1023/254/63 82 Linux swap
14 x 029431080 027744255 1023/000/01 1023/254/63 05 extended
15 S 000000063 027744192 1023/001/01 1023/254/63 07 NTFS
16 S 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
17 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
18 P 000000000 000000000 0000/000/00 0000/000/00 00 empty entry
1 020980827 sectors 10742183424 bytes
3 000032067 sectors 16418304 bytes
5 002104515 sectors 10742183424 bytes
7 004208967 sectors 10742183424 bytes
9 008401932 sectors 10742183424 bytes
11 010490382 sectors 10742183424 bytes
13 004209030 sectors 10742183424 bytes
15 027744255 sectors 10742183424 bytes

Log Highlights:
- Actual Date:04/06/07 12:38:27PM
- File Integrity:Completely Verified, 0 Errors
- Acquisition Hash:f458f673894753fa6a0ec8b0b06c63848e
- Verify Hash:f458f673894753fa6a0ec8b0b06c63848e
- EnCase Version:5.05f
- Error Granularity:64
- Read Errors:0
- Missing Sector Errors:0
- CRC Errors:0
- Total Size:40,020,664,320 bytes (37.3GB)
- Total Sectors:78,165,360

Results:

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM-03 Execution environment is XE.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-06 Tool verifies image file unchanged.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
<tr>
<td>Test Case DA-24 EnCase 5.05f</td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td></td>
</tr>
<tr>
<td>Analysis: Expected results achieved</td>
<td></td>
</tr>
</tbody>
</table>
Test Case DA-25 EnCase 5.05f

Case Summary: DA-25 Detect a corrupted image.

Assertions:
AM-03 The tool executes in execution environment XE.
AO-07 If the tool performs an image file integrity check on an image file that has been changed since the file was created, the tool shall notify the user that the image file has been changed.
AO-08 If the tool performs an image file integrity check on an image file that has been changed since the file was created, the tool shall notify the user of the affected locations.
AO-23 If the tool logs any log significant information, the information is accurately recorded in the log file.

Tester Name: mrmw
Test Host: Max
Test Date: Tue Jul 3 13:29:19 2007
Drives: src(01) dst (none) other (04-fu)

Source Setup:
src hash (SHA1): < A48B5665D6DC57C22DB68E2F723DA9A8DF82B9 >
src hash (MD5): < F458F673894753FA6A0EC8B8EC63848E >
78165360 total sectors (40020664320 bytes)
Model (0BB-00JHC0 ) serial # ( WD-WMAC74171)

Log Highlights:
Image file corrupted for test run:
Change byte 11370496 of file /tmp/da-10-uncompressed.E02 from 0x33 to 0x94
Starting Extent:0x0
Actual Date:06/30/07 01:36:26AM
File Integrity:Completely Verified, 1 Errors
Acquisition Hash:bc39c3f7ee7a50e7b9bale6a5aeeef7
Verify Hash:7136e55fa3f5f761d7c938510c042c26
EnCase Version:5.05f
Error Granularity:64
Read Errors:0
Missing Sector Errors:0
CRC Errors:1
Total Size:40,000,000,000 bytes (37.3GB)
Total Sectors:78,125,000
## Test Case DA-25 EnCase 5.05f

<table>
<thead>
<tr>
<th>Assertion &amp; Expected Result</th>
<th>Actual Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM-03 Execution environment is XE.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-07 User notified if image file has changed.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-08 User notified of changed locations.</td>
<td>as expected</td>
</tr>
<tr>
<td>AO-23 Logged information is correct.</td>
<td>as expected</td>
</tr>
</tbody>
</table>

**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.