

RedLight (Beta) Software Version 0.1.0.0

EVALUATION REPORT

January 2011





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Introduction

The National Institute of Justice (NIJ) Electronic Crime Technology Center of Excellence (ECTCoE) has been assigned the responsibility of conducting electronic crime and digital evidence tool, technology and training testing and evaluations in support of the NIJ research, development, testing and evaluation (RDT&E) process.

The NIJ RDT&E process helps ensure that NIJ's research portfolios are aligned to best address the technology needs of the criminal justice community. This rigorous process has five phases:

- **Phase I: Determine technology needs, principally in partnership with the Law Enforcement and Corrections Technology Advisory Council (LECTAC) and the appropriate Technology Working Group (TWG).** NIJ identifies criminal justice practitioners' functional requirements for new tools and technologies. (For more information on LECTAC and the TWGs, visit <http://www.justnet.org/>.)
- **Phase II: Develop technology program plans to address those needs.** NIJ creates a multi-year research program to address the needs identified in Phase I. One of the first steps is to determine whether products that meet those needs currently exist or whether they must be developed. If a solution is already available, Phases II and III are not necessary and NIJ moves directly to demonstration, testing and evaluation in Phase IV. If solutions do not currently exist, they are solicited through annual, competitively awarded science and technology solicitations and TWG members help review the applications.
- **Phase III: Develop solutions.** Appropriate solicitations are developed and grantees are selected

through an open, competitive, peer-reviewed process. After grants are awarded, the grantee and the NIJ program manager then work collaboratively to develop solutions.

- **Phase IV: Demonstrate, test, evaluate and adopt potential solutions into practice.** A potential solution is tested to determine how well it addresses the intended functional requirement. NIJ then works with first-adopting agencies to facilitate the introduction of the solution into practice. During the testing and evaluation process, performance standards and guides are developed (as appropriate) to ensure safety and effectiveness; not all new solutions will require the publication of new standards or guides. After adoption, the solution's impact on practice is evaluated.
- **Phase V: Build capacity and conduct outreach to ensure that the new tool or technology benefits practitioners.** NIJ publishes guides and standards and provides technology assistance to second adopters.¹

NIJ's High-Priority Criminal Justice Technology Needs are organized into five functional areas:

- Protecting the Public.
- Ensuring Officer Safety.
- Confirming the Guilty and Protecting the Innocent.
- Improving the Efficiency of Justice.
- Enabling Informed Decision-Making

These NIJ ECTCoE tool, technology and training evaluation and testing reports support the NIJ RDT&E process, which addresses high-priority needs for criminal justice technology.

¹ *National Institute of Justice High-Priority Criminal Justice Technology Needs*, March 2009, NCJ 225375.

Overview

Cases involving child pornography typically require a forensics examiner to search through thousands of images on a hard drive. Whereas pornography may be easy to spot for a trained examiner, the majority of these images are often irrelevant to the case. Even systems free of pornography contain thousands of images for operating system and program displays, Internet browsing history and anything else that displays graphics to the user. A tool that can reduce the amount of images that a forensics examiner needs to process would expedite the successful prosecution of cases involving child pornography.

RedLight is an application designed to detect pornographic image content within a computer file system. RedLight provides for the quick detection and viewing of any pornographic content on suspect storage media. Reports can then be generated of the suspected content in HTML or CSV form for later analysis, or as a file containing the Hash values of the suspected images for import into forensic analysis tools.

Product Information

RedLight (Beta Version) 0.1.0.0 is software developed by the University of Rhode Island's Digital Forensics Center Research Program.

The following information is from the University of Rhode Island's website²:

“RedLight is the fastest law enforcement pornography scanner available. RedLight detects pornography based on how law enforcement investigates a case—by finding likely pornography in images (and soon in video) very quickly, allowing visual

²<http://www.dfc.cs.uri.edu/RedLight.php>

³<http://encyclopedia2.thefreedictionary.com/beta+version>

⁴<http://www.dfc.cs.uri.edu/rlHelp/main.htm>

confirmation by the investigator through a display of thumbnails, and then exporting selected videos, images, reports, and hash sets (suitable for importing into powerful analysis tools such as EnCase, FTK, and X-Ways). It uses sophisticated image analysis techniques to detect pornography through characteristics such as high concentrations of skin tone, and edges indicative of humans. RedLight achieves very good accuracy while being by far the fastest detection tool of its kind—finding images quickly and showing them in real-time as it finds them.”

A beta version is a pre-shipping release of hardware or software that has gone through alpha testing. A beta version of software is supposed to be very close to the final product; however, in practice it is more a way of getting users to test the software under real conditions. Given the complexity and ambiguous standards in the personal computer industry, it is impossible to duplicate the myriad of configurations that exist in the real world.³

Product Description

The following information is from the RedLight User's Guide⁴:

“RedLight is an application designed to detect pornographic image content within a computer file system. RedLight will only run on Windows XP or later. RedLight provides for the quick detection and viewing of any pornographic content on suspect storage media. Reports can then be generated of the suspected content in HTML or CSV form for later analysis, or as a file containing the hash values of the suspected images for import into forensic analysis tools.

- **Simple:** RedLight is a simple Windows GUI interface that allows the user to search a storage device or devices by specifying a search location and clicking a single button. Either entire logical drives or specified folders can be searched.
- **Customizable Searching:** Basic and advanced options are available to fine tune searches such as file size and timestamp limitations, among others.
- **File System Independent:** RedLight is file system independent in that if a file system is interpretable by the Operating System, the images can be scanned.
- **Faster Than Other Similar Products:** RedLight has been tested to run significantly faster than other suspect content image scanners.
- **Accurate:** RedLight has proven to be 80% accurate or better when scanning systems.”

Special Features

The following is a list of RedLight’s features from RedLight’s website⁵:

- **“Detection of Likely Pornographic Images.** RedLight uses sophisticated techniques to detect pornography based on characteristics, such as high concentrations of skin tone and edges indicative of human form(s). Testing results consistently show accuracies in the 80% range - where it finds a vast majority of pornographic images with very few false positive identifications.
- **Fast.** RedLight is typically 5 to 10 times faster at scanning drives than other tools such as LTU⁶ and FTK⁷. Furthermore, since RedLight can be run without having to process a case in a tool like EnCase⁸ or FTK, it is much better suited for a quick examination (and then later import into the analysis tool). For

an investigator who needs to determine if there are pornographic images, this significantly faster search will save a great deal of valuable time and effort.

- **Works With Forensic Analysis Tools.** RedLight exports hash sets of the pornographic images in the formats of each EnCase, FTK and X-Ways⁹ analysis tools. These hash sets can then be easily imported into the investigator’s analysis tool, quickly reproducing the identified pornographic images in the investigator’s favorite analysis environment.
- **Extensive Search Criteria.** RedLight allows the investigator to restrict searches based on characteristics such as minimum and maximum file size, created/modified/accessed times of files, directories to search and whether to search file headers or to trust the file name type (which is faster).
- **Immediate Investigator Feedback.** RedLight displays images identified as pornography as thumbnails immediately upon encountering them. This allows the investigator to start their visual examination immediately and to stop the search when enough evidence has been found. The investigator can also sort images by modified/accessed/created times, with time zone specification and adjustment.
- **Case Exporting and Reporting.** RedLight exports professional reports in HTML format, text comma separated files for import into spreadsheets and databases, and hash sets for import into forensic analysis tools (described above). Furthermore, RedLight copies selected images from the result set to a specified disk/location as either full images or thumbnails.
- **Easy Upgrades.** RedLight is designed to accommodate easy upgrades of its scanning “engine” that improve the speed and/or accuracy by using techniques we currently have in development. It is also designed to easily include the child detection

⁵http://www.dfc.cs.uri.edu/RedLight_features.php

⁶<http://www.ltutech.com/>

⁷<http://accessdata.com/products/forensic-investigation/ftk>

⁸<http://guidancesoftware.com/>

⁹<http://www.x-ways.net/>

engine that is in development, which will further refine the pornographic images results to those that likely contain children.”

Target Customers

The target customers for the RedLight software are state and local law enforcement organizations that maintain a separate unit for forensic examinations of digital media. RedLight expedites the examination process to ensure a suspect in a child pornography exploitation case is dealt with in a speedy and efficient manner.

Law Enforcement Applications

RedLight is designed to assist an examiner in identifying potential evidence in a child pornography case by minimizing the amount of graphic files that need to be reviewed. Once RedLight identifies potential pornography, a more in-depth examination can be conducted. Minimal configuration is needed to use RedLight. RedLight enables the user to narrow its search for date and time blocks or files of a certain size, which can be useful if a rough estimate of the date and time a suspect may have been downloading files is known.

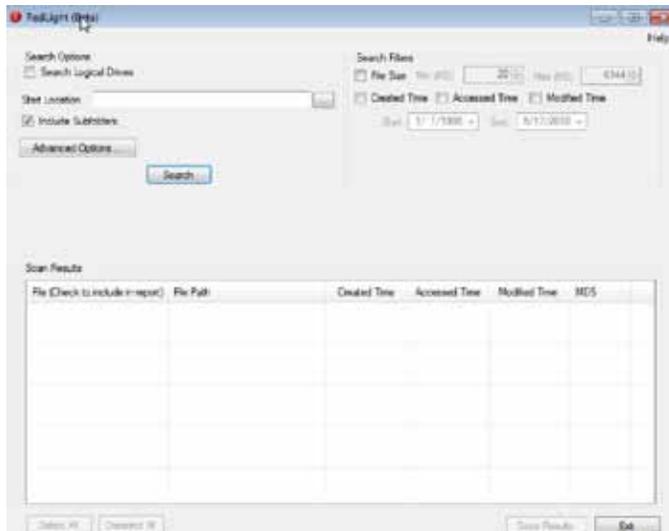
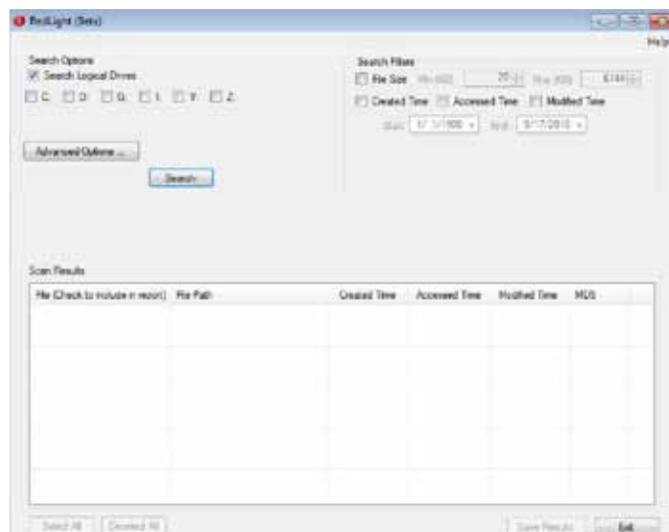
Evaluation and Testing of RedLight (Beta) Software

Prior to downloading the RedLight program, the online user manual was reviewed. The manual is very informative and contains screen shots of the installation, configuration and use of the program. A detailed explanation of each type of report that can be generated is provided in the online user manual.

Download and Installation of RedLight

The RedLight software was downloaded from the University of Rhode Island website at <http://www.dfc.cs.uri.edu/index.php> by NIJ ECTCoE staff, along with a trial license to activate the product. RedLight was installed using the following steps:

1. The file "RLBeta.zip" and "license.dat" were downloaded to a folder named "Red Light" created on the desktop of the test machine. The "RLBeta.zip" file took less than 30 seconds to download and the "license.dat" file downloaded in less than five seconds. Both downloads reported they were successful.
2. Using WinZip version 10.0, the file "RLBeta.zip" was extracted within the "Red Light" folder into a default folder named "RLBeta" by WinZip. There was one file contained in the "Red Light" folder named "RedLight setup.exe."
3. The RedLight program was installed on a new laptop with a fresh Windows 7 Starter Version. The laptop is an Asus Eee PC Model 1005PEB and did not contain any pornographic images.
4. On executing "RedLight Setup.exe," the first screen that appeared was titled "Welcome to the RedLight Setup Wizard." It indicated that it will install RedLight 1.0 and to close all open programs.
5. After clicking on "Next," the second screen titled "Agreement Terms Screen" included two choices, "Agree" or "Disagree." After choosing "Agree" and clicking on "Next," the third screen was displayed.
6. Screen three allowed the user to select the location of the "license.dat" file that was previously downloaded. The two choices here are "I have one" or "I need to get one." Since the "license.dat" file was previously downloaded, "I have one" was selected and screen four was displayed.
7. Screen four chose the default location where RedLight was being installed from, "Desktop\Red Light\RLBeta\." The user also had the option to "browse" to a different location. The "license.dat" file was located in the "Desktop\Red Light\" folder. After selecting the correct folder, clicking on "Next" displayed screen five.
8. Screen five displayed the default location for the program of the program installation, "C:\Program Files\RedLight\." The user could also select another location using the "Browse" button. This screen also notified the user that the program needs 21.1 Mb of disk space to install. The default was accepted by clicking on the "Next" button.
9. Screen six notified that the setup program will add shortcuts in the Program Start menu and provided a "Browse" button to change the default location of "Red Light." This screen also provided check boxes to add shortcuts to the desktop and task bar. Both were left checked. Screen seven was

FIGURE 1: RedLight Startup Screen**FIGURE 2: RedLight Search Options**

a review of the installation configuration that had been selected. Every screen included a “Back,” “Next” and “Cancel” button. This enabled the user to go back and change settings or to choose not to continue installing the program. The configuration was accepted and the “Next” button was clicked. Screen eight was the installation progress bar screen. This let the user know the program was installing. After the installation was complete, the final screen was displayed and the program inquired whether the user would like to launch the RedLight program via a checkbox. (The checkbox is checked by default.) The checkbox was deselected and the “Finish” button was clicked.

At this point, RedLight is ready to be used; there is no reboot required to launch the program.

Configuration of RedLight

The RedLight program started with the screen as seen in Figure 1. This initial screen provided search option choices including an option to browse to the start location of the search, a check box option to include subfolders in the search and search filters for minimum and maximum file size, creation time, accessed time and modified time. There was also a check box to search logical drives.

The Search Logical Drives option enables selection of which logical drive the user would like include within the search (Figure 2). Searches can be based on start time and end time to allow the user to focus on a known time frame the suspect could have been using the computer based on work schedules or witness statements.

The advanced options button opened another window as seen in Figure 3. With this option, a search can be performed by searching for file names, which is faster, or by searching by file headers, which is longer and more thorough. This screen also gave the option of what color to have the results displayed for faster

reference. The two choices were for pornographic or non-pornographic images. There was also a configurable time zone choice.

Test 1 – RedLight on a Fresh Install of Windows

This test was performed to examine the behavior of RedLight on a known clean system containing no pornographic images. The system was a fresh install of Windows. The following steps were performed:

1. RedLight version 0.1.0.0 was installed on a laptop computer.
2. “Search logical drives” was unchecked and “Drive C:” was chosen instead. Default settings were used for the rest of the search options.
3. The time zone was set for UTC -5.00 Eastern time United States and Canada.
4. The test took 15 minutes to complete.
5. The RedLight program reported finding 13,736 images, scanning 13,736 images and identifying 314 images as suspect.

A review of the images found RedLight identified jpg, bmp and png files. Most of the images are used in games, programs and backgrounds for the computer that come with installation of the operating system or other programs.

After the scan was complete, RedLight gave the user the option of viewing the results or saving the results to either a CSV file (comma separated value) or an html report. The CSV file can easily be imported into a spreadsheet program such as Microsoft Excel or Open Office. Another feature is “Save Hash File for Import.” The Hash values can be imported into Encase, FTK and X-Ways. The user can also check off which columns are displayed in the report and also what times are displayed. A choice is also included to either display the original image, thumbnails or no images at all (Figure 4).

FIGURE 3: Advanced Search Options

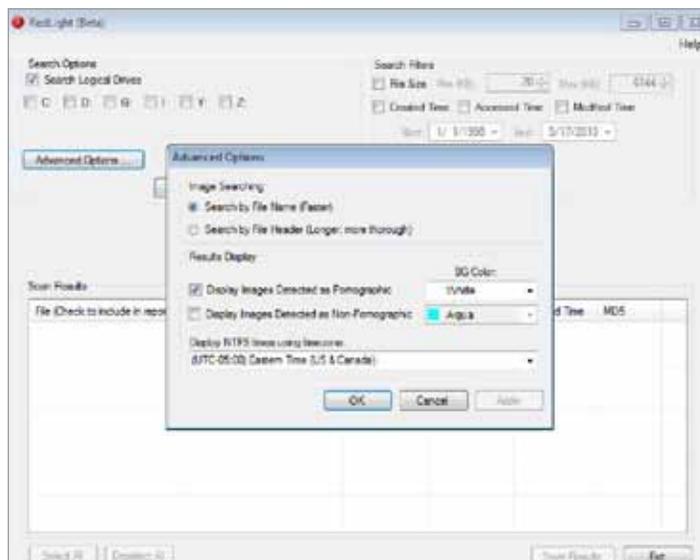


FIGURE 4: RedLight Report Options

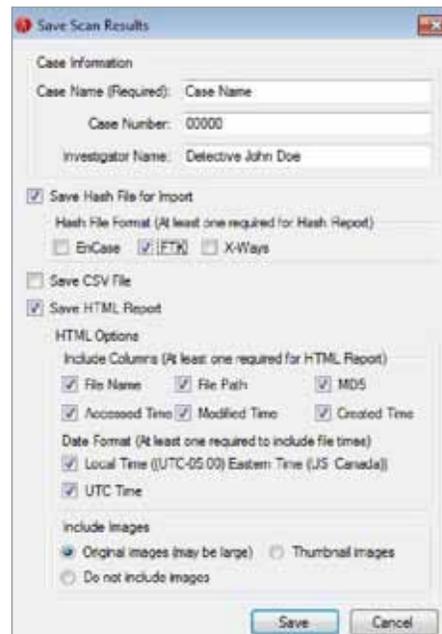
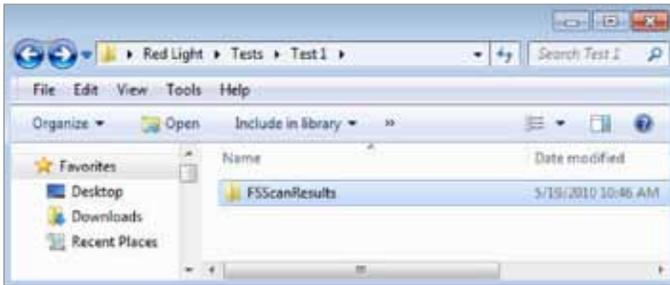
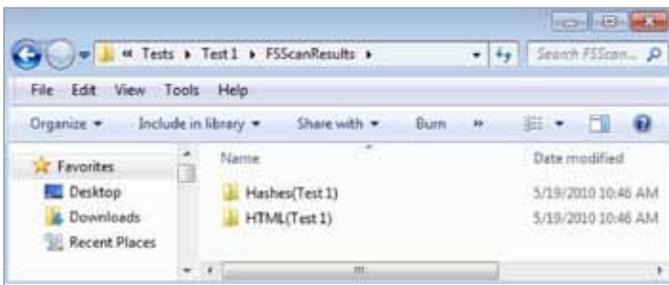


FIGURE 5: RedLight Results Folder**FIGURE 6: Results Folders Contents**

After clicking “Save,” RedLight created a “FSScanResults” folder (Figure 5). Within this folder are two more folders. The “Hashes” folder contains a text file with all the hashes and a text file with the case information. The other folder is an HTML folder that contained all the components necessary for the HTML report (Figure 6).

Test 2 – Using File Headers to Search

This test was performed to determine RedLight’s behavior with the File Header search option enabled. The test was also performed on the clean install of Windows using the following steps:

1. “Search logical drives” was unchecked and “Drive C:” was chosen instead.
2. The default settings were changed using the Advance Options button to search and scan by file header. RedLight indicated this would take longer.

3. The time zone was set for UTC -5.00 Eastern time United States and Canada.
4. The test took 15 minutes to complete.
5. The RedLight program reported finding 14,932 images, scanning 14,932 images and identifying 359 images as suspect.
6. A review of the images found RedLight identified jpg, bmp and png files. Most of the images are used in games, programs and backgrounds for the computer that usually come with installation of the operating system or other programs.

Both reports for Test 1 and Test 2 were saved and the first four pages were printed for review.

An example of the first four pages of the report can be found in Appendix A. The report header contained the following fields:

- Case information.
- Case name.
- Case number.
- Investigator.
- Scan information.
- Start path.
- Subfolders true or false.
- Scan time (actually found to be the time the report was created).
- Found (totals).
- Scanned (totals).
- Suspect (totals).

The results in the body of the report contained the information as selected by the user in the report generation screen, including:

- Created date and time using the current time zone settings.
- Created date and time using UTC.

- Accessed date and time using the current time settings.
- Accessed date and time using UTC.
- Modified date and time using the current time settings.
- Modified date and time using UTC.
- MD5 Hash.

Test 3 – RedLight on a Computer With Unknown Contents

This test was performed to evaluate RedLight on a computer where the contents were unknown. The computer, LAB1, was a computer acquired by ECTCoE. The following steps were performed:

1. RedLight version 0.1.0.0 was installed on a desktop computer, LAB1.
2. “Search logical drives” was unchecked and “Drive C:” was chosen instead. Default settings were used for the rest of the search options.
3. The time zone was set for UTC -5.00 Eastern time United States and Canada.
4. The test took 14 minutes to complete.
5. The RedLight program reported finding 25,786 images, scanning 27,786 images and identifying 342 images as suspect.

A review of the images revealed all were non-pornographic in nature. Most were either system files or from programs installed on the computer’s hard drive.

Test 4 – RedLight on E01 Images

The test was performed to evaluate if RedLight can read an E01 image typically used by EnCase. EnCase is a forensic tool used to forensically image a hard drive and to examine the contents of those images from the hard drive. The following steps were taken:

1. An 80 GB hard drive was wiped and formatted using a Tableau TD1 disk duplicator. This was done

to ensure there was no data on the drive. This drive was used as the destination drive for the rest of this test.

2. The hard drive from LAB1 was then connected as the source drive to the Tableau TD1 disk duplicator.
3. The menu option to duplicate the source disk was chosen and the option disk to file was chosen.
4. The format chosen was E01 image in 2GB segments.
5. The process was started. This created an image of the source drive on the destination drive.
6. After the E01 image was created, the log was copied to a memory stick to include with this test.
7. Both the source drive and destination drive were now disconnected from the Tableau TD1 disk duplicator.
8. The source hard disk was reconnected to the LAB1 computer and the destination hard disk was connected to LAB1 as a slave drive.
9. LAB1 was booted normally and it was noted that the slave drive containing the image files could be viewed with Windows Explorer.
10. The RedLight program was started.
11. On the initial menu, the search option to search logical drives was unchecked. Using the Browse feature, the path to the E01 image on the slave drive was selected.
12. The search was started and immediately stopped.

It was determined that RedLight cannot be used to search for an image within an E01 file.

Test 5 – Testing RedLight on a Forensic Tool Kit Processed Case

This test was performed using Forensic Tool Kit (FTK) v1.71 to see what the results would be if RedLight was used to scan a FTK case after it was created and indexed. The computer used was LAB 1 from tests 3 and 4. Using the E01 image created for Test 4, a

new case was created in FTK and indexed. After FTK completed its processing, the following steps were performed:

1. RedLight was started and the option to browse was selected. The case folder that FTK created, "Test 5," was selected.
2. The search was started using the search by filename choice.
3. The search and scan took 12 minutes.
4. RedLight found and scanned 29,721 images and identified 358 as possible pornographic images.

A review of the images revealed all were non-pornographic in nature. Most were either system files or from programs installed on the computer's hard drive.

A second test was started using the same FTK case folder, but this time, the "Search by File Header" was selected. FTK can identify image files with bad extensions using the File header. This scan took 15 minutes. RedLight found and scanned 29,721 images and identified 358 as possible pornographic images. It was concluded that there were no files with bad extensions within the case.

Conclusion

RedLight would be a great asset to the investigative tool box. For example, in Test 5, out of 29,721 images, RedLight identified 358 as possible pornographic images. Although those images were not pornographic, the images found met

RedLight's criteria for skin tone and shapes. In this example, the forensics examiner would be saved the time of searching through 29,721 images for pornography. RedLight could greatly expedite cases where an examiner is looking for pornography.

Appendix A – First Four Pages of a Sample Report

Scan Results Page 1 of 33



Case Information
 Case Name: Test 1
 Case Number: 1
 Investigator: Stewart

Scan Information
 Start Path: C:
 Subfolders: True
 Scan Time: 5/19/2010 8:13 AM
 Found: 13736
 Scanned: 13736
 Suspect: 314

Scan Results

Image	Created Time EST	Created Time UTC	Accessed Time EST	Accessed Time UTC	Modified Time EST	Modified Time UTC	NDS Hash
	3/29/2010 7:15 AM	3/29/2010 12:15 PM	3/29/2010 7:15 AM	3/29/2010 12:15 PM	5/9/2007 6:04 PM	5/9/2007 11:04 PM	B270807BA7D35FE6FC05F0557
\\Program Files\ArcSoft\Print Creations\Help\en\images\add_picture.jpg							
	3/29/2010 7:15 AM	3/29/2010 12:15 PM	3/29/2010 7:15 AM	3/29/2010 12:15 PM	5/9/2007 6:04 PM	5/9/2007 11:04 PM	FAE63890715D6929EC792F7D
\\Program Files\ArcSoft\Print Creations\Help\en\images\delete.jpg							
	3/29/2010 7:15 AM	3/29/2010 12:15 PM	3/29/2010 7:15 AM	3/29/2010 12:15 PM	4/1/2008 11:50 AM	4/1/2008 4:50 PM	2194843A86D359E269FD8058A
\\Program Files\ArcSoft\Print Creations\Help\en\images\Eraser.jpg							
	3/29/2010 7:15 AM	3/29/2010 12:15 PM	3/29/2010 7:15 AM	3/29/2010 12:15 PM	2/25/2008 2:52 PM	2/25/2008 7:52 PM	52809220855C249952504883AI
\\Program Files\ArcSoft\Print Creations\Help\en\images\New Project.bmp							
	3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	07A3A82F7F8BFEC39B068F578:
\\Program Files\ASUS\Eee Docking\Cuts\Docklets\boot_highlighter_arena.png							
	3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	8B5E089FFA6282B10E3CDC547:
\\Program Files\ASUS\Eee Docking\Cuts\Docklets\boot_highlighter_sharing.png							
	3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	B94E5666C2AAA19968AEA5184
\\Program Files\ASUS\Eee Docking\Cuts\Docklets\icon_arena_b.png							
	3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	E605194B88841EFDEB269252C:
\\Program Files\ASUS\Eee Docking\Cuts\Docklets\icon_arena_b.png							

file://C:\Users\Don\Desktop\Red Light\Tests\Test 1\FSScanResults\HTML(Test 1)\Scan R... 5/19/2010

Scan Results

Page 2 of 33

\\Program Files\ASUS\Eee Docking\Cuts\Docklets\icon_shaeing_b.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	BAB47A835ECA1ED3D14AFED41
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\\Program Files\ASUS\Eee Docking\Cuts\Docklets\left_highlighter_aren copy.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	F3C2CC5466C9F1AC8CB570CD3
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\\Program Files\ASUS\Eee Docking\Cuts\Docklets\left_highlighter_sharing copy.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	40A9B2270FF22006CBDF8991A
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\\Program Files\ASUS\Eee Docking\Cuts\Docklets\list_highlighter_sharing.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	A0FE28FD1733189D258959992
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\\Program Files\ASUS\Eee Docking\Cuts\Docklets\list_highlighter_tool.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	30C9A5A69A09B5E1F7C6FB5B
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\\Program Files\ASUS\Eee Docking\Cuts\Docklets\right_highlighter_aren copy.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	E7A081C82882FFF9E5E86905
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\\Program Files\ASUS\Eee Docking\Cuts\Docklets\right_highlighter_sharing copy.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	07A3A82F7F8BFEC39B06BF57B
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\\Program Files\ASUS\Eee Docking\Cuts\Docklets\top_highlighter_arena.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	8B5E089FFA6282810E3CDC547
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\\Program Files\ASUS\Eee Docking\Cuts\Docklets\top_highlighter_sharing.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	4E03B3D3BABC60D2EBFCDA50
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\\Program Files\ASUS\Eee Docking\Cuts\toolbox\Boingo.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	D3A62CD0E78C23E6CF89A3E87
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file://C:\Users\Don\Desktop\Red Light\Tests\Test 1\FSScanResults\HTML(Test 1)\Scan R... 5/19/2010

Scan Results

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\Program Files\ASUS\Eee Docking\Cuts\toolbox\data-sync.png							
	3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	358CF4F318A90EDCB8D4A0D5
\Program Files\ASUS\Eee Docking\Cuts\toolbox\dock-item_sharing.png							
	3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	3CA492478ADC7702F4B3D71B
\Program Files\ASUS\Eee Docking\Cuts\toolbox\dock-item_tool.png							
	3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	3F54F2308E6D5ECS4F60A5E28E
\Program Files\ASUS\Eee Docking\Cuts\toolbox\eee storage.png							
	3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	0073CF693C82C02097929B81B
\Program Files\ASUS\Eee Docking\Cuts\toolbox\Ezmassanger.png							
	3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	869D7E417773DE2B751293E71
\Program Files\ASUS\Eee Docking\Cuts\toolbox\ezmode.png							
	3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	1BC3C74AC2822F0E2938A3EFB
\Program Files\ASUS\Eee Docking\Cuts\toolbox\font-resizer.png							
	3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	EB261353F793EFB57E2D19B61
\Program Files\ASUS\Eee Docking\Cuts\toolbox\icon-contact.png							
	3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	A398F2532CEB592DFAEBDC805
\Program Files\ASUS\Eee Docking\Cuts\toolbox\live-update.png							
	3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	1FB6DA82F2CF5164A680A5AC4
\Program Files\ASUS\Eee Docking\Cuts\toolbox\locale me.png							
	3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	A33CD7D94D0892179F2AD7EB

file://C:\Users\Don\Desktop\Red Light\Tests\Test 1\FSScanResults\HTML(Test 1)\Scan R... 5/19/2010

Scan Results

\\Program Files\ASUS\Eee Docking\Cuts\toolbox\parental-ctrl.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:38 PM	3/27/2010 6:38 PM	11/6/2009 10:20 AM	11/6/2009 3:20 PM	2AA8B30F6365C25C5ECDBA909
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\\Program Files\ASUS\Eee Docking\Cuts\toolbox\PowerRecover.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	10/12/2009 11:19 AM	10/12/2009 4:19 PM	F42E929CB8C6302B2E76B6BD
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\\Program Files\ASUS\Eee Docking\Cuts\toolbox\sensor setting.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	39A66586F6B0E65EE8B428FR02
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\\Program Files\ASUS\Eee Docking\Cuts\toolbox\sharing icon_n.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	3A96D5622E848F42AD291DA37
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\\Program Files\ASUS\Eee Docking\Cuts\toolbox\system setting.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	36A5D292D725537B4B2EEF08C
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\\Program Files\ASUS\Eee Docking\Cuts\toolbox\task bar setting.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	9CF66275661960AD3386E655E
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\\Program Files\ASUS\Eee Docking\Cuts\toolbox\tool icon_n.png



3/27/2010 1:38 PM	3/27/2010 6:38 PM	3/27/2010 1:15 PM	3/27/2010 6:15 PM	9/24/2009 3:05 PM	9/24/2009 8:05 PM	4A3FAF5C392C48B6EB90A199B
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\\Program Files\ASUS\Eee Docking\Cuts\toolbox\virtual_keyboard.png



3/27/2010 1:18 PM	3/27/2010 6:18 PM	3/27/2010 1:18 PM	3/27/2010 6:18 PM	9/26/2008 4:31 PM	9/26/2008 9:31 PM	4013A6CF4919B2E49AA754365
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\\Program Files\ASUS\EPC\EeeSplendid\samples\sample3.jpg



3/27/2010 1:18 PM	3/27/2010 6:18 PM	3/27/2010 1:18 PM	3/27/2010 6:18 PM	9/26/2008 4:30 PM	9/26/2008 9:30 PM	2A9589E0274B8CB74516E88B7
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\\Program Files\ASUS\EPC\EeeSplendid\samples\sample4.jpg



3/27/2010 1:18 PM	3/27/2010 6:18 PM	3/27/2010 1:18 PM	3/27/2010 6:18 PM	10/8/2008 4:46 PM	10/8/2008 9:46 PM	EFF3A1CE9079C30318BDA31A8
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file://C:\Users\Don\Desktop\Red Light\Tests\Test 1\FSScanResults\HTML(Test 1)\Scan R... 5/19/2010