

Submit a 1-2 page description of the project you propose to do related to computer security.

You should include WHAT you are doing, HOW you propose to do it, WHY you think it is important, and a partial list of resources you expect to use for it.

1 What I am doing

Creation of a command-line program for hiding files into a greyscale baseline jpeg/jfif. This will either be done through Jsteg, F5, or a created on for this project.

2 How I propose to do it

After the creation of the quantized DCT coefficients and before applying Huffman coding, steganography will be performed on the quantized DCT coefficients depending on the chosen algorithm. This will be done by inserting created steganography encoding/decoding operation between calling Rich Geldreich's public domain code "Jpeg-compression" functions.

3 Why it is important

Sending an encrypted file over the internet or stored on a storage device make it known that it is likely a file containing important, confidential information. This knowledge may encourage attackers to attempt to crack that file or compromise the computer/storage device containing the encrypted file. Hiding such sensitive file in a jpeg with steganography will discourage attacks by looking like a low value target.

Understanding how steganography can be performed on jpegs will informs how to discover steganography in jpeg and other files.

4 Resources

4.1 Document

4.1.1 ISO/IEC 10918-1: 1993(E)

Address: <http://www.w3.org/Graphics/JPEG/itu-t81.pdf>

Purpose: Guidelines and requirements for jpeg.

4.1.2 JPEG

Address: <http://en.wikipedia.org/wiki/JPEG>

Purpose: Simplified explanation of jpeg compression, decompression, and structure.

4.1.3 JPEG File Interchange Format File Format Summary

Address: <http://www.fileformat.info/format/jpeg/egff.htm>

Purpose: Explanation of JFIF structure.

4.1.4 JSteg: steganography and Steganalysis

Address: <http://csis.bits-pilani.ac.in/faculty/murali/netsec-09/seminar/refs/anuroopsrep.pdf>

Purpose: Algorithm for Jseg encoding and how to detect it.

4.1.5 Steganalysis of JPEG Images: Breaking the F5 Algorithm

Address: <http://ws2.binghamton.edu/fridrich/Research/f5.pdf>

Purpose: Algorithm for F5 encoding and how to detect it.

4.2 Code

4.2.1 Jpeg-compressor

Address: <https://code.google.com/p/jpeg-compressor/>

Purpose: Public domain jpeg compression and decompression programs.

4.3 Software

4.3.1 Binary Viewer

Address: <http://www.proxoft.com/BinaryViewer.aspx>

Purpose: A free viewer for reading files in binary. Graphics and histograms of byte

4.3.2 Code::Blocks

Address: <http://www.codeblocks.org/>

Purpose: A free IDE for C++ development.