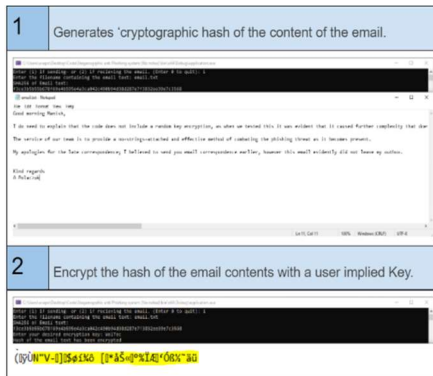# Steganography Against Phishing Emails
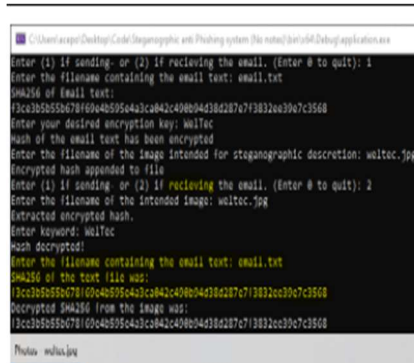
By: Anthony Polaczuk and Pawan Lahotra

Supervisor: Robert Sutcliffe
Advisor: Thi Thu Trang Do

Client: Manish Singh

Hashing the contents of the email

A generated hash of the email

How Phishing works

INTRODUCTION

Because of the vastness of email communication in the business and industrial sectors, many people have turned to exploit the system's flaws, which come from the lack of data supplied in each email.

Our project goal is to deploy a system to all business computers that are used to access. So that all emails sent between staff and executives can be checked for integrity with the least amount of effort possible.

SOLUTION SUMMARY

The solution we designed is written in C++ and runs on a 64-bit Windows operating system using Visual Studio.

It's a two-part system with a sender and receiver on either side. The sender of the email has the ability to generate a SHA256 hash of the email's contents automatically. After that, a user-defined password is used to encrypt the SHA 256. This steganographically inserted SHA256 hash of the email contents is now automatically appended to an image file. They may then attach this image to their email, along with the hashed information, and send it to their intended recipient, who is likewise protected by the steganographic anti-phishing system.

DEVELOPMENT

There are five different stages in the development phase of this project:

1. Phishing Research
   i. Research Steganography and Phishing Emails
   ii. Construct Phishing Email Categories
2. System design
   i. Assess different Technical Systems
   ii. Different Approaches for the categories
3. Code design
   i. Design Codes for testing
   ii. Developing codes for testing
4. Testing and Analysis
   i. Testing Analysis for each system
   ii. Analyze False-Positive
   iii. Analyze False-Negatives
5. Compile into an Article
   i. Finalize Article

CONCLUSION

We've created a proof of concept that will be expanded further into a fully deployable system. We propose hiring a software developer to implement this code into an email client's capabilities. Because the work has already been done, the software developer does not need to specialize in cyber-security.