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CPE 400
Feb. 8th, 2024

Final Project Abstract

Project Title: Is iPhone Communication Truly Secure?

Topics: Network Traffic Data Collection & Analysis, Mobile App Data and Privacy

1. What type of device or mobile application you will focus

a) iPhone 13
b) iPhone SE2 (2020)
c) Communication app (ex. iMessage, FaceTime, Phone Call, WhatsApp)

2. What kind of platforms and tools you will use

a) Wireshark
b) Visual Studio Code
c) Python 3

3. What kind of data you will collect

a) Communication data between the two devices (Messages, Phone Calls)

4. What kind of analysis you will perform

a) I will use Wireshark to look for surefire ways that data is not encrypted, such as analyzing packets for HTTP/HTTPS headers, and checking that the data cannot be pulled easily via Wireshark (like how you can examine the source code of an HTTP packet)

5. Do you have resources available (device etc.)

a) I already have both an iPhone 13 and an iPhone SE2, as well as Visual Studio Code and Wireshark available to me

6. Do you plan to use any library

a) Yes, Python mitmproxy library. https://mitmproxy.org/

7. Where you will share your code and data

a) Github

I have an iPhone 13 and an iPhone SE2. Apple is always proud of their “secure” communication methods. I want to see if that is true, and if not, find any vulnerabilities. To analyze Apple’s claim, I want to analyze the traffic coming from my iPhone 13 to my iPhone SE while using a communication application, such as FaceTime, WhatsApp, or iMessage, while checking for encryption or unencrypted data. I also want to analyze the data being received by my iPhone 13 while it is idle. I plan to use Wireshark and Python 3 programming to achieve this, along with the mitmproxy library available to Python 3. I plan to share my results and code via GitHub to the class and to my close friends.

Expected Results:
Having zero networking experience, I expect at least 90 percent of the data to be properly encrypted. In addition, due to one phone running hardware, and operating system version, I expect there to be some discrepancies between the security transferred from the iPhone SE when compared to the iPhone 13, as I believe that updates made to the iPhone enhance the security of the data transferred to and from the device.