Universiti Teknologi MARA

Network Security Performance Analysis of Mobile Voice over IP Application (mVoIP): Kakao Talk, Telegram, Facebook Messenger and WhatsApp

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STUDENT DECLARATION

I certify this thesis and the project to which it refers is the analysis of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledgement in accordance with the standard referring practices of the discipline.

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ABSTRACT

Recently, VoIP application usage has increased from time to time and make our daily life more convenient. VoIP application has features to make a phone call, send a text message and share the file through the apps for free. However, most of the users did not seem aware of VoIP security features such as authentication ability, password encryption ability, or voice or audio and text communication encryption ability. It is essential to ensure the VoIP used is secure from password decrypter and eavesdrops the user conversation. Thus, the first objective of this research was to study and investigate VoIP application consist of Kakao Talk, Telegram, Facebook Messenger and WhatsApp for both Android and web application. The second objective was to evaluate the four VoIP application identified based on authentication requirement, password encryption, voice or audio encryption communication, and text encryption communication. There were two mobile phones used. One acts as a client and a personal computer act as an attacker. Wireshark and packet capture were run in personal computer and mobile phone to monitoring and scanning the network traffic while both devices connected in the same WLAN. The experiment implements MITM, interception, and sniffing attacks. As a result, this research project has identified Facebook Messenger and WhatsApp web application do not provide secure password ability.

TABLE OF CONTENTS

CONTENT **PAGE**