Design and implementation of an Enterprise-Grade Wireless Network with Strong Authentication

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ABSTRACT

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Security is one of the important aspect of today's digital world. There have been numerous breaches by people with malicious intent to either steal confidential data or disrupt daily activities of a corporation. Security implemented at enterprise level still lack in certain design aspects leading to said attacks. Existing security methods are often not implemented to account for various threats and breaches. The most favored target is the end user as the highly vulnerable part of a network is the human factor.

In the present day, poor implementation and design of enterprise networks leads to data breaches and poor user security. Assumption that the network is secure after adding security at layer 2 is an overlooked mistake. Due to having the option to randomize layer data on the user- end for privacy, the layer 2 authentication methods such as MAC based authentication fail to serve their purpose on their own. layer 3 authentication methods while still securing the user at layer 3 quite often ignore the layer 2 verification of the same user.

This project aims at a design, implementation and analysis of various enterprise security and authentication methods to secure and maintain wireless users. We shall implement the security methods to point out how they are flawed when used individually and provide a solution to those issues by combining various authentication and encryption methods to make up for the said flaws.

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