

Universiti Teknologi MARA

**Realtime Android-based Firewall
Management System**

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ABSTRACT

This project is about the effectiveness and practicality of remote connection for firewall management system using android platform. It has been long known that firewall is the most important device that acts as a first layer of defence for the network but not many firewalls provides remote connection and monitoring via a mobile phone. All there is just a web-based management system for users to implies policies and rules This project will use the android-based platform to create an application or software that uses a remote connection and monitoring of a firewall. This project will enable users and admins to connect and monitor firewall remotely if it is in the same network. The method used is by implementing an already existing application template and system and combines multiple methods to make the functionality more efficient. The system is then translated into android-based software which uses flutter to run. The system will be tested via mobile phone that is connected to the same Wi-Fi network and then will try to connect to the firewall and execute functions. The recent findings are that many of the firewall existed nowadays have the potential threat towards evolving cybersecurity attacks which may lead to network intrusion, data leaks, and personal data theft. To prevent from such things from happening, the firewall must be at the most efficient and high in terms of security and manageability.

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CHAPTER 1

INTRODUCTION

This chapter will provide the background and reasons for the project. It also gives the details of the significance of android based real-time firewall management system, the issues and problems that led to this research of the project.

1.1 Background of Study

Today, mobile phone is a crucial technology. Users rely on mobile phone more than anything. This includes payment method which uses mobile phone and many more. Mobile phone is a very handy gadget that helps people to live easily. This includes with job scope where if possible, users want to use mobile phone to create all the presentation and all the work without using the laptop or computer. Because of this, there are many companies that develops software that meets with the requirements. In fact, there are several organizations and companies made their own policies of Bring Your own Devices (BYoD) and Bring Your own Technology (BYoT) which motivate employees to use devices and technology to access company's private data and network (Kumar.N, 2017)This leads to a vulnerability towards the already established network in the organization of company as we bring our personal device to do work and connect with the private data and network.

Android is the most popular mobile Operating System (OS) nowadays. It is a customized Linux-based open source mobile operating system for mobile device (Kumar.N, 2017)Because of this, many developers decide to use android as a medium for certain application to manage or modify system. There are many types of android application that enable users to control the system just by using the phone. This will provide ease of access to any system that administrators need to monitor or control.

For firewall technology, almost every firewall that existed nowadays can only be configured with a direct console connection or with SSH terminal from a web-based software. The software provides a real-time monitoring of the passing packets that goes through the network and administrators can configure the firewall on the software. But not many software can give opinion on updating the policy or any expiration of the key used. This will provide vulnerabilities towards hackers to do scanning to the network where the