

UNIVERSITI TEKNOLOGI MARA

**MIGRATION OF HARDWARE ALADDIN E-TOKEN
TO SOFT-TOKEN OPENVPN TO INCREASE
THE QUALITY OF SERVICE (QOS)**

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ABSTRACT

Aladdin e-Token for MRSM e-Education has been implemented since 2009 to ensure all critical data are not misusing or hacked by the outsider. Major issues with the administrator of MRSM e-Education project needs to configure and install the token. Secondly, the Aladdin e-Token's password requirement on administrator or site admin before the tunnel is up. Lastly Aladdin e-Token configuration is in reliance to only a specific server. Due to this challenge, it will affect the QoS of the system in term of down time, performance, consistent and delay of data transfer. Therefore the study made to identify weaknesses Aladdin e-Token then build Soft-token and assess the ability of the Soft-token approach. The method is based on the Small RSA (easy-rsa) OpenVPN and all information included in the Soft-token. Based on four tests conducted on these two approach, hence the Soft-token more reliable, consistent response time, independent and time to transfer data faster than the Aladdin e-Token. In conclusion, the Soft-token is appropriate to replace hardware Aladdin e-Token OpenVPN and increase the Quality of Service for MRSM e-Education system.

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CHAPTER 1

INTRODUCTION

1.0 Overview

This chapter explains the overview of the research work starting from introduction of Virtual Private Network (VPN). The next subchapter is the problem statements that will address the current limitation faced by Aladdin e-Token. Subsequently, it will cover the question and answer of the research objectives. The scope of works is involved in the research experimental test. Then, the research significance will explain the benefit of the thesis. And lastly the summary of the thesis.

1.1 Introduction

MRSM e-Education system has been implemented since 2009 and all the servers were hosted in Jaring, Technology Park Malaysia. The MRSM e-Education system is a complete solution to the school online system consist of Campus Management System (CMS), Learning Management System (LMS) and Learning Content Management System (LCMS). This project involves 36 Maktab Rendah Sains MARA (MRSM), MARA Headquarters (HQ) and Internet Data Centre (IDC) Jaring as a data center. The MRSM e-Education system can be accessed via internet cloud. Therefore, all 36 MRSM using 1Gov*Net connectivity meanwhile MARA HQ using Jaring connectivity can access the systems.

Currently, design architecture for MRSM e-Education is distributed system where each MRSM had their own servers (i.e Application, Database, Security, SAN etc) as Primary system meanwhile IDC Jaring become Secondary to replicate all data and information. Each MRSM, MARA HQ and IDC Jaring will have to make their own connection to communicate to each other. To ensure all critical data are not misusing or