UNIVERSITI TEKNOLOGI MARA

LEVERAGING AN OPENVPN TECHNOLOGY TO END USER

MD IKHWAN BIN HAMDAN

Thesis submitted in fulfillment of the requirements
for the degree of
Master of Science

**Faculty of Computer and Mathematical Sciences**

June 2010

CANDIDATE'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of University Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This topic has not been submitted to any other academic institution or non-academic institution for any other degree or qualification.

In the event that my thesis be found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree and agree to be subjected to the disciplinary rules and regulations of University Teknologi Mara (UiTM).

Name of Candidate	Md Ikhwan Bin Hamdan
Candidate's ID No.	2007131549
Programme	Master of Science in Information Technology
Faculty	Faculty of Computer and Mathematical Sciences
Thesis Title	Leveraging An OpenVPN Technology To End User

Signature of Candidate: …………………………………………....

Date: June 2010

ABSTRACT

The vital part of internet to end user is file-sharing. This activity has been active ever since the beginning of the evolution of internet. Significantly during 1999 to 2003 era many P2P authors began to enhance the technology which has attained four generations in that period. Incidentally the latest P2P technology involves "many to one" model which predominantly exists in BitTorrent and its clones. This has been a very innovative approach.

Meanwhile in 2001 Streamyx began to bring broadband to Malaysia. This quickly attracted many waiting users which gradually boost up its one millionth subscribers around 2007. However sometimes in 2006 Streamyx began to impose packet filtering without notice in trend with most world ISPs. During that time most users began to express their grouse. The issue has been also vigorously highlighted by a couple of local press. Meanwhile the ISP alleges that the international lines are at fault which coincidentally coincides with the Taiwan earthquake in 2006 and another incident of cable fault in Middle East in 2008.

However according to Cisco Systems the issue of slow internet connection to end user which deprived its user to enjoy its prescribed capacity as promised is not an issue unless ISP has abide to the procedure of good network infrastructure.

Apparently for ISP to impose packet filtering there are various methods available. Currently the Deep Packet Inspection (DPI) method is the most advanced option up-to-date to prevent rampant P2P activities. Realizing the method used many P2P authors began to include an encrypted technology in their products. However it has not given much effect to counter DPI.

Hence with the issue of limited capacity to broadband service for end user this paper is undertaking a task to address it.

After much thought one of the most promising technology in focus is Virtual Private Network (VPN). This technology has been mainly adopted by most corporate users and has the capability of a powerful encrypted traffic and secured network environment.

Thus this paper is basically to show that by leveraging on the strength of VPN the end user has now an option to circumvent and address the stated issue indefinitely. In this context there are two VPN options available. They are the Propriety and an Open Source VPN. However to keep the cost low an Open Source VPN plus a couple of other software are implemented. The result is shown in this paper with success to benefit the end users in general.

TABLE OF CONTENTS

CHAPTER 1:   INTRODUCTION

CHAPTER 2:   LITERATURE REVIEW

1.0 Introduction

Internet is an open network, see Figure 1.1 below.
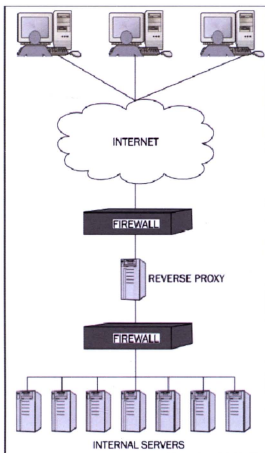
Figure 1.1: Internet Concept

(Source: Joseph Steinberg, Tim Speed and Simon Jenner, 2006)

The Figure 1.1 above shows typical users and servers' network scenario which are linked to a global internet network. At anytime the server is accessible to each user irrespective of their locations. When connected users are able to use services allowable to them.

Through the years internet has become a powerful medium. It has the ability to find, manage, and share information. By sharing it means one is able to share information,