AN ANALYSIS ON SKYPE A VOIP APPLICATION

.

By

NIK MOHD NAZIM BIN NIK ZAHARI 2002611099

A THESIS SUBMITTED IN PARTIAL FULFILLMENT FOR THE BACHELOR OF SCIENCE (HONS) IN DATA COMMUNICATION AND NETWORKING

FACULTY OF INFORMATION TECHNOLOGY AND QUANTITATIVE SCIENCE UNIVERSITI TEKNOLOGI MARA (UiTM) SHAH ALAM APRIL 2005

DECLARATION

I hereby declare that the work in this thesis is on my own work. Materials of work found by other researchers are mentioned by reference. This thesis neither has in whole nor in part between previously submitted by any unspecified sources or persons.

April 2005

NIK MOHD NAZIM BIN NIK ZAHARI 2002611099

TABLE OF CONTENT

ACKNOWLEDGEMENT	ii
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF ABBREVIATIONS	ix
ABSTRACT	x
CHAPTER	

1.0 INTRODUCTION

1.1	Background	1
1.2	Problem Statement	2
1.3	Research Objective	3
1.4	Scope of the Research	3
1.5	Significance of Research	3

2.0 LITERATURE REVIEW

2.1	Introduction		
2.2	What is VolP		
2.3	VoIP Security Issues		
	2.3.1	Issues in Security	5
	2.3.2	Level of Security	6
	2.3.3	VoIP Vulnerabilities	6
	2.3.4	Standard for Security	6
	2.3.5	Network Intrusions	6
	2.3.6	Protection Technology	7
	2.3.7	Staffing for Security	7
2.4	The Strength of VoIP		7
2.5	The Vulnerabilities of VoIP		
2.6	VolP Protocols		

Softphone		
2.7.1	Skype	11
	2.7.1.1 Encryption	11
	2.7.1.2 Skype Function	12
	2.7.1.3 SkypeOut	13
	2.7.1.4 File Transfer	14
	2.7.1.5 Instant Messaging	14
2.7.2	Skype Security	14
	2.7.2.1 Privacy	14
	2.7.2.2 Authenticity	16
	2.7.2.3 Availability	17
	2.7.2.4 Resilience	18
	2.7.2.5 File Transfer Intercept	18
	2.7.2.6 Instant Messaging Intercept	19
	2.7.2.7 Speech Intercept	19
	2.7.1	 2.7.1 Skype 2.7.1.1 Encryption 2.7.1.2 Skype Function 2.7.1.2 Skype Function 2.7.1.3 SkypeOut 2.7.1.4 File Transfer 2.7.1.5 Instant Messaging 2.7.2 Skype Security 2.7.2.1 Privacy 2.7.2.2 Authenticity 2.7.2.3 Availability 2.7.2.4 Resilience 2.7.2.5 File Transfer Intercept 2.7.2.6 Instant Messaging Intercept

3.0 RESEARCH APPROACH AND METHODOLOGY

3.1	Introduction		20
3.2	Data Collection		20
	3.2.1	Planning	21
	3.2.2	Information Gathering	21
3.3	Installation and Configuration		21
	3.3.1	Project Requirement	22
		3.3.1.1 Hardware Requirement	22
		3.3.1.2 Software Requirement	23
	3.3.2	Improving the Sound Quality	23
	3.3.3	Local Area Network Architecture	24
3.4	Testing and Analyzing		25
	3.4.1	Sniffer Pro	25
	3.4.2	Ettercap	26

ABSTRACT

Skype is a peer-to-peer VoIP client developed by KaZaa in 2003. Skype claims that it can work almost seamlessly across NATs and firewalls and has better voice quality than the MSN and Yahoo IM applications. It encrypts calls end-to-end, and stores user information in a decentralized fashion. Skype also supports instant messaging and conferencing. These researches analyze the voice packet in Local Area Network and also analyzing the security method of Skype application between users across the internet while using instant messaging services. This research is using Sniffer Pro to analyze the voice packet and Ettercap to sniff the Skype application while the user is using instant messaging services. After the analyzing has been done the result is that Skype application has a good quality voice and the delay is normal. Compare to other instant messaging services, Skype uses encryption method to encrypt the text to send to other user across the internet.