

## TESIS^ APPROVAL STATUS FORM

JUDUL: STUDY ON NETWORK PERFORMANCE AT FTMK

SESI PENGAJIAN: 2004/2005

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(HURUF BESAR)

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**STUDY ON NETWORK PERFORMANCE AT FTMK**

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This report is submitted in partial fulfillment of the requirement for the  
Bachelor of Information and Communication Technology (Computer Network)

**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY KOLEJ  
KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA  
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## ADMISSION

I admitted that this project title name of  
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## **DEDICATION**

Specially dedicated to my beloved parents, family and fellow friends, who had encouraged and supported me in my entire journey of learning, thanks a lot.

## ACKNOWLEDGEMENTS

Assalamualaikum Wbt.

Praise to Allah SWT, the Most Merciful and the Most Benevolent who has given His blessing to complete my tesis that was conducted during semester 7, 21<sup>th</sup> June – 22<sup>th</sup> October 2004.

Firstly I would like to thank my supervisor; En. Othman Bin Mohd, for his guidance and encouragement. I am really appreciated all the cooperation and guidance from his in order to complete my tesis.

This acknowledgement also refers to all the lecturer and staff in Faculty of Information & Communication Technology as well. Their contribution and cooperation in my research was really helpful.

I would also not forget my parents and family who has given me a very supportive morale during my PSM I. This acknowledgement also goes to my previous practical company which is K-Ekonomy Jbtn Ketua Menteri, Melaka. A big thank to my industrial training supervisor; En.Anuar and all the staff for their encouragement and commitment.

Thank you also to my housemates, classmates, members and all people who have supported me. Thanks for all the cooperation, commitment and encouragement during a few months of struggle.

## ABSTRACT

The purpose of this project is to identify the problem of exiting network connection from ICT faculty to the internet through Computer Center. Beside to propose the best alternatif that can be achive to improve the network performnce.

The project also help the faculty monitor their exiting VLAN network and control the usage of network. Beside that, monitor the traffic load on network links at FTMK. This project can help technician at FTMK to know why network at lab in FTMK is slow and try to solve the problem. They can monitor the traffic load on network links which provide a live visual representation.

As for the conclusion, this project is the right solution for those who are having a problem on network performance.

## ABSTRAK

Tujuan projek ini ialah untuk mengenalpasti masalah rangkaian komputer yang sedia ada di antara fakulti ke internet menerusi Pusat Komputer. Selain itu tujuan utama ialah mencari alternative untuk memperbaiki pelaksanaan rangkaian di sini.

.Projek ini juga dapat membantu pihak fakulti memantau rangkaian VLAN yang sediaada serta mengawal penggunaan rangkaian komputer. Selain itu, dapat mengawasi serta memantau muatan trafik pd rangkaian di FTMK. Projek ini juga dapat membantu pekerja teknikal di FTMK, mengapa rangkaian di makmal di FTMK lambat dan cuba untuk menyelesaikan masalah. Mereka dapat megawasi dan memantau perjalanan trafik di rangkaian yang mempersembahkan perjalanan yang sebenar.

Kesimpulannya, projek yang ini merupakan pilihan yang tepat bagi sesiapa jua yang mempunyai masalah dalam sistem rangkaian.

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**LIST OF ACRONYMS AND ABBREVIATIONS**

<b>ACRONYM</b>	<b>DESCRIPTION</b>
SNMP	Simple Network Management Protocol
MRTG	Mutli-Router Traffic Grapher
IIS	Internet Information Services Manager
GUI	Graphical User Intreface
HDML	Handheld Devices Markup Language
HTML	HyperText Markup Language
HTTP	HyperText Transfer Protocol
ICT	Information and Communication Technology
OOAD	Object-Oriented Analysis and Design
PAN	Personal Area Network
PDA	Personal Digital Assistant
RAD	Rapid Application Development
TCP/IP	Transmission Control Protocol/Internet Protocol
UML	Unified Modeling Language
W3C	World Wide Web Consortium
XHTML	Extensible HyperText Markup Language
XML	Extensible Markup Language

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# CHAPTER I

## INTRODUCTION

### 1.1 Project Overview

This project is to study on network performance at FTMK using IP Network Browser and Network Performance Monitor. Network Browser is an interactive network discovery tool. IP Network Browser can scan a subnet and show the details about the devices on that subnet. Network Performance Monitor is a real-time network monitor that can track network latency, packet loss, traffic and bandwidth usage, and many other network statistics. The Network Performance Monitor can also monitor each managed node and interface via SNMP to report when a node reboots or an interface goes down. The Multi Router Traffic Grapher (MRTG) is a tool to monitor the traffic load on network-links. MRTG generates HTML pages containing graphical images, which provide a LIVE visual representation of this traffic.

This project is to know traffic bottlenecks at FTMK and the advanced graphing utility lets to drill into the results real-time. With the customizable summary screen it is easy to quickly identify high traffic nodes or build customized reports. The customizable alerting system lets to configure network Alerts on any of over 150 network properties.

To develop this system I shall use the methodology. The methodology of network includes Project Planning, Systems Analysis, Requirements Definition, Research and Interview, System Design, Implementation.

- Project planning, feasibility study: Establishes a high-level view of the intended project and determines its goals.
- Systems analysis, requirements definition, refines project goals into defined functions and operation of the intended application. Analyzes end -user information needs.
- Systems design: Describes desired features and operations in detail, including screen layouts, business rules, process diagrams, pseudo code and other documentation.
- Implementation: The real network is design.

## 1.2 Problem statement

- Network is slow when surfing internet.
- To capture the problem of network performance at KUTKM. especially at FTMK.

### **1.3 Project Objective.**

The objectives of this project are:

- To capture network packets and display the network problem
- Monitor the traffic load on network links which provide a live visual representation of this traffic
- Monitoring on router and switch on VLAN 65.

### **1.4 Project Scope.**

This project is to know why network at FTMK is slow and capture the problem to improve network performance at FTMK. Beside that, monitor the traffic load on network links at FTMK.

### **1.5 Contributions**

This project can help technician at FTMK to know why network at lab in FTMK is slow and try to solve the problem. They can monitor the traffic load on network links which provide a live visual representation of this traffic on Routers, Switches, and Servers.

## 1.6 Expected output

The expected outputs from this project are can know the problem of network at VLAN 60 and other VLAN (create with own VLAN), monitor traffic analysis at FTMK and capture network packets.

## CHAPTER II

### LITERATURE REVIEW

#### 2.1 Introduction

From the research that be done, IP Network Browser and Network Performance Monitor is the most popular open source performance measuring tool being used around the world today. IP Network Browser and Network Performance Monitor. is open source, it has been widely adopted by major companies everywhere who use it to measure network performance and adherence to SLAs, among other things. IP Network Browser is an interactive network discovery tool. For each responding address, IP Network Browser attempts to gather more information. It does this using SNMP (Simple Network Management Protocol). An SNMP agent must be active on the remote devices in order for IP Network Browser to gather details about the device. Network Performance Monitor is a real-time network monitor that can track network latency, packet loss, traffic and bandwidth usage, and many other network statistics. The Network Performance Monitor can also monitor each managed node and interface via SNMP to report when a node reboots or an interface goes down.

Network Performance Monitor can monitor and collect traffic statistics from any device that supports SNMP. Devices that do not support SNMP can also be monitored. Network Latency and Packet Loss can be monitored for any network device, even those that do not support SNMP. The Multi Router Traffic Grapher (MRTG) is a tool to monitor the traffic load on network-links.

The important of this case study is to get more information about the exiting network at FTMK such as network speed, network traffic and other requirement network need.

## **2.2 Fact and finding**

### **2.2.1 IP Network Browser**

IP Network Browser is an interactive network discovery tool. IP Network Browser can scan a subnet and show the details about the devices on that subnet. Each IP address is sent a PING. For each responding address, IP Network Browser attempts to gather more information. It does this using SNMP (Simple Network Management Protocol). An SNMP agent must be active on the remote devices in order for IP Network Browser to gather details about the device.

To specify the SNMP community string for each device, simply enter a list of community strings used on the network, and IP Network Browser will determine the correct one for each device. IP Address Management can be used to actively monitor which IP addresses are in use on the network. It can also be used to allocate IP addresses before they are used. IP Address Management will automatically monitor the IP addresses within many subnets and report on their usage.