

UNIVERSITI UTARA MALAYSIA
NETWORK PERFORMANCE STUDY

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ABSTRAK

Pada awal era 90-an, rangkaian komputer (contoh: LAN, WAN, MAN) telah digunakan dengan meluas dan memberi impak yang besar di dalam pelbagai aspek. Penggunaan rangkaian komputer yang meluas menyebabkan timbulnya kesedaran untuk mengurus rangkaian komputer. Pengurusan prestasi rangkaian komputer merupakan salah satu daripada subkategori di dalam pengurusan rangkaian komputer. Pengurusan prestasi rangkaian komputer perlu dititikberatkan, bermula dari proses rekabentuk logikal, fizikal hingga implementasi dan penggunaan rangkaian. Prestasi rangkaian komputer tidak hanya tamat di atas kertas tetapi sebaliknya rangkaian komputer tersebut perlu dikawalselia dan di analisis pada selang masa tertentu seperti mungkin setiap dua bulan sekali. Projek ini akan mengkaji dan menganalisa prestasi rangkaian komputer di Universiti Utara Malaysia (UUM). Ini adalah kerana pelbagai urusan rasmi dan tidak rasmi di UUM menggunakan kemudahan rangkaian komputer di dalam pelbagai aspek. Projek ini hanya akan menumpukan kepada satu sahaja aspek di dalam pengurusan prestasi rangkaian iaitu *network utilization*. Melalui projek ini, hasilnya *network utilization* bagi rangkaian komputer UUM akan dikenalpasti.

ABSTRACT

Early in 90's, the emergence of computer networks had brought great impact in many aspects. The emergence and rapid growth of the computer networks (LAN, WAN, MAN, etc.) need to be manage, from here, the network management terms evolve and been use widely. Performance management is one of the subclass/subcategory in network management. The network performance needs to be considering start from the logical design of computer networks and when the network is deploy. The network performance itself does not end on the paper when it has been planned but the network performance also need to be monitor and analyze periodically in order to maintain its performance and 'health'. In this paper, network performance study on the UUM network been executed in order to examined and determine that the deployed campus networks are performing at the optimum level periodically. The UUM network plays an important role because the university administration and education use computer widely in every aspects. The study will only emphasize or concentrate onto the network utilization of UUM campus network.

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TABLE OF CONTENTS

PAGE

1.0 INTRODUCTION.....	1
1.1 Problem Statement.....	4
1.2 Project Objective.....	5
1.3 Project Scope.....	8
2.0 LITERATURE REVIEW.....	9
3.0 METHODOLOGY.....	15
3.1 Setting baselines for network performance.....	16
3.2 Studying network traffic performance.....	17
3.3 Documenting performance.....	18
4.0 FINDINGS/RESULTS.....	19
1) Setting baselines for network performance.....	19
2) Studying network traffic performance.....	19
A. Project findings and results for data point at room 2038, Faculty of Public Management & Laws.....	32
i. IP statistics tab.....	32
a) First capture.....	32
b) Second capture.....	33
c) Third capture.....	34
d) Fourth capture.....	35
ii. Packets tab.....	36
a) First capture.....	36
b) Second capture.....	37
c) Third capture.....	38
d) Fourth capture.....	39
iii. Statistics and reports tab.....	40
a) General statistics.....	40
b) IP protocol statistics.....	42
c) IP sub-protocol statistics.....	43
d) Packets sizes.....	44
e) LAN hosts (MAC).....	45
f) LAN hosts (IP).....	46
g) Errors.....	47
h) Report.....	48
B. Project findings and results for data point at Executive Development Centre (previously known as Graduate School).....	49
i. IP statistics tab.....	49
a) First capture.....	49
b) Second capture.....	50
c) Third capture.....	51
d) Fourth capture.....	52
ii. Packets tab.....	53
a) First capture.....	53
b) Second capture.....	54
c) Third capture.....	55
d) Fourth capture.....	56

iii.	Statistics and reports tab.....	57
	a) General statistics.....	57
	b) IP protocol statistics.....	59
	c) IP sub-protocol statistics.....	60
	d) Packets sizes.....	61
	e) LAN hosts (MAC).....	62
	f) LAN hosts (IP).....	63
	g) Errors.....	64
	h) Report.....	65
C.	Project findings and results for data point at MSc IT by Research Laboratory at Faculty of Information Technology.....	66
i.	IP statistics tab.....	66
	a) First capture.....	66
	b) Second capture.....	67
	c) Third capture.....	68
	d) Fourth capture.....	69
ii.	Packets tab.....	70
	a) First capture.....	70
	b) Second capture.....	71
	c) Third capture.....	72
	d) Fourth capture.....	73
iii.	Statistics and reports tab.....	74
	a) General statistics.....	74
	b) IP protocol statistics.....	76
	c) IP sub-protocol statistics.....	77
	d) Packets sizes.....	78
	e) LAN hosts (MAC).....	79
	f) LAN hosts (IP).....	80
	g) Errors.....	81
	h) Report.....	82
D.	Summary of UUM network utilization percentage.....	83
3)	Documenting performance.....	83
4.1	Discussions.....	84
i)	Setting baselines for network performance.....	84
ii)	Studying network traffic performance.....	84
a)	Project findings and results for data point at room 2038, Faculty of Public Management & Laws.....	85
i.	IP statistics tab.....	85
ii.	Packets tab.....	86
iii.	Statistics and reports tab.....	86
b)	Project findings and results for data point at Executive Development Centre (previously known as Graduate School).....	88
i.	IP statistics tab.....	88
ii.	Packets tab.....	88
iii.	Statistics and reports tab.....	88
c)	Project findings and results for data point at MSc IT by Research Laboratory at Faculty of Information Technology.....	90

i.	IP statistics tab.....	90
ii.	Packets tab.....	91
iii.	Statistics and reports tab.....	92
d)	Summary of UUM network utilization percentage.....	92
iii)	Documenting performance.....	93
5.0	CONCLUSION.....	94
6.0	REFERENCES.....	95
7.0	APPENDIX.....	97

List of Tables

Table 1: Schedule of capturing network packets from the UUM network

Table 2: IP Protocol detected in UUM Network

Table 3: Sub-IP Protocol detected in UUM Network

Table 4: Summary of network utilization in UUM network from three different locations in UUM

List of Figures

Figure 1: QoS parameters for networks service (Lee et. all, 2003).

Figure 2: Network performance metrics (Lee et. all, 2003).

Figure 3: First Capturing Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 4: Second Capturing Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 5: Third Capturing Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 6: Fourth Capturing Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 7: First Capturing Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 8: Second Capturing Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 9: Capturing Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 10: Fourth Capturing Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 11: Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 12: Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 13: Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 14: Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 15: Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 16: Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 17: Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 18: Network Data/Packets Captured using TamoSoft CommView at room 2038 data point, Faculty of Public Management & Law.

Figure 19: First Capturing Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 20: Second Capturing Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 21: Third Capturing Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 22: Fourth Capturing Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 23: First Capturing Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 24: Second Capturing Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 25: Third Capturing Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 26: Fourth Capturing Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 27: Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 28: Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 29: Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 30: Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 31: Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 32: Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 33: Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 34: Network Data/Packets Captured using TamoSoft CommView for data point at Executive Development Centre.

Figure 35: First Capturing Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 36: Second Capturing Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 37: Third Capturing Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 38: Fourth Capturing Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 39: First Capturing Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 40: Second Capturing Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 41: Third Capturing Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 42: Fourth Capturing Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 43: Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 44: Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 45: Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 46: Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 47: Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 48: Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 49: Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

Figure 50: Network Data/Packets Captured using TamoSoft CommView for data point at MSc IT by Research Computer Laboratory in Information Technology Faculty.

1.0 INTRODUCTION

Network performance is the ability of continuously monitor certain network statistics to ensure adherence to the Service Level Agreement (SLA) (Wynd, 2000). Also, it is a work involves setting network thresholds to identify anomalies and creating baselines to aid in determining “normal” network performance. However, Castelli (2002) stated that performance management is designed to measure and make available various aspects of network performance so that they can be maintained at respectable threshold. Basically, network performance refers to the overall effectiveness of a network at a given point. Besides that, performance management is used to evaluate the behavior of managed objects and the efficiency of communications activities (Kauffels, 1992).

Generally, performance is examined at all levels of connectivity (LAN, WAN, backbone, end-to-end, application). There are several difference aspects of network performance can be measured and give information that can be use to improve organizational application performance. Basically, a high-performance network is characterized by high bandwidth, small delay, and low packet loss. Nevertheless, the measurements also usually look at one or more of the following aspects:

1. Bandwidth

- How much data can be transferred per unit time is the most obvious.

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