UNIVERSITI UTARA MALAYSIA
NETWORK PERFORMANCE STUDY

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By
Shariful Hafizi Bin Md Hanafiah

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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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SHARIFUL HAFIZI BIN MD HANAFIAH
Faculty of Information Technology
Universiti Utara Malaysia
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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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