

**DEVELOPMENT OF WEB BASED IPv4 3COM ROUTER CONFIGURATION
SYSTEM**

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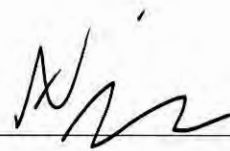
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DEVELOPMENT OF WEB BASED IPV4 3COM ROUTER CONFIGURATION
SYSTEM

MUQIT BINTI ISMAIL

This report is submitted in partial fulfillment of the requirement for the
Bachelor of Computer Science (Computer Networking)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2011

DECLARATION

I hereby declare that this project report entitle
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SYSTEM**

is written by me and is my own effort and that no part has been plagiarized
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DEDICATIONS

To my beloved parents, your love and support are my greatest inspirations. There is no doubt in my mind that without the continued support and motivation, I could not have completed this project. The dedications is also to all of my lecturers and also my supervisor, for being receptive and give challenging to me to be a better student.

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I would also like to thank my beloved parents and all of friends that was giving me support and motivation throughout my project.

ABSTRACT

This project papers is about Development of Web Based IPv4 3Com Router Configuration System for 3Com Router. This system was developing to enhance and provide an easy way for user to configure router compared to current system used. This Web Based IPv4 3Com Router Configuration System will configure router using TCP connection (TELNET). A current system available is the HyperTerminal are not systematic and take a lot of time to configure the router. By developing this system, it can make the configuration of router become easy and take less time for configure a router. The Web Based IPv4 3Com Router Configuration System cover router's basic configuration. This system is especially for the beginner of router's user. One interface used for one router configuration. User will be able to configure the router using the button that include the router configuration command which is totally graphical system router configurations. This system can be running anywhere as long as connected with the server in LAN network environment.

ABSTRAK

Projek ini adalah mengenai Sistem Konfigurasi Router Web IPv4 3Com adalah untuk membuat konfigurasi 3Com Router. Sistem ini dibina adalah untuk menambah baik sistem yang sedia ada dan memudahkan pengguna untuk membuat konfigurasi router berbanding dengan sistem yang sedia ada. Sistem Konfigurasi Router Web IPv4 3Com akan konfigurasi router menggunakan sambungan TCP (TELNET). Sistem yang sedia ada iaitu HyperTerminal adalah kurang sistematik dan memerlukan masa yang agak lama untuk menyudahkan konfigurasi yang ingin dibuat. Dengan adanya sistem ini, ia akan memudahkan konfigurasi yang dibuat dan menjimatkan masa. Sistem Konfigurasi Router Web IPv4 3Com hanyalah merangkumi konfigurasi router yang biasa digunakan untuk mengoperasi router sepenuhnya. Sistem ini dibangunkan untuk memudahkan pengguna yang kurang mahir menggunakan *command* untuk membuat konfigurasi. Pengguna boleh membuat konfigurasi dengan hanya menekan butang menu yang di dalamnya terdapat *command* untuk router yang telah disertakan. Sistem ini boleh diakses di mana - mana selagi ianya bersambung dengan web *server*.

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LIST OF ABBREVIATIONS

PHP	- Personal Home Page
LAN	- Local Area Network
CLI	- Command Line Interface
GUI	- Graphic User Interface
IPv4	- Internet Protocol version 4
HP	- Hewlett Packard
WBUI	- Web Based User Interface
OS	- Operating System
IP	- Internet Protocol
RIPv1	- Routing Information version 1
RIPv2	- Routing Information version 2
	-

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CHAPTER 1

INTRODUCTION

1.1 Project Background

The Prototype of Web Based of IPv4 3Com Router Configuration System develops to help user for configure router in effective way. This system more focuses for students and a beginner network administrators to learn how to configure the router easier and minimize an error. This project include basic router configuration in web-based platform and only support configuration for IPv4 environment.

This system is developing by using Personal Home Page (PHP). Talking about web designing, PHP is one of hottest scripting language into today's technology world. But, the reason behind its popularity is no license cost. PHP is a general-purpose scripting language that is suited especially to server-side web development where PHP generally runs on a web server using its code act as input and web pages as a product. Basically, it comes with PHPMyAdmin which it supported by database languages like MySQL 2.0, SQL and etc to create database table. The core factor by using the PHP is because it is an open source scripting and supports most of operating system (OS). This project also will use Apache as a web server. The Apache Server also an open source.

3Com is a global provider of enterprise and small-business networking solutions, offering networking devices, IP voice systems, and intrusion prevention systems. Router is one of devices that join multiple wired or wireless networks together. Technically, router is a Layer 3 gateway and operates at the network layer of OSI model. The router that will be used in developing system is 3Com Router 5009.

One of the reasons choosing 3com router as a devices for developing this web-based system because nowadays 3com devices is more marketable in Malaysia. From *Bernama – Thursday, June 17 2010* - Hewlett-Packard Pte Ltd (HP) expects to increase sales in Malaysia by two to three times following the acquisition of 3Com Corp, a global leader in the networking industry. HP announced yesterday that it had completed the acquisition of 3Com at US\$7.90 per share or an enterprise value of US\$2.7bil. The acquisition was finalized on April 19. Mitra said HP would integrate 3Com's network switching, routing and security solutions with its existing HP ProCurve solutions to create a comprehensive portfolio for its customers.

By using Web Based of IPv4 3Com Router Configuration System, it will help user to learn router configuration easily. This will also give an interactive web-based user interface (WBUI). This system can be access by using web browser and the code is executed so the user does not need any special browser or plug-ins for using this system, but user only can browse as long as it connected to the main server. In order word, this system only can be access for intranet used only.

1.2 Problem Statement

A Hyper Terminal command line interface is the common router configuration that complex and it is a bit difficult to user especially the beginner. They mostly has problems during configures the router because the configuration involved a lot of command-line. There are a lot of step to configure the router. If the user forgets the command line, then it takes more time for user to search for the command line needed, or even worse, the process of configuring a router might be delayed and affecting the time.

A Hyper Terminal also a standalone version that difficult to make a configuration from other place. It need a direct connection between computer and the router by using console cable for do configure or setup the router performance.

However, even though the routers are becoming widely used, the method of configuring it does not change much. In 3Com, it has provide the services for manage the devices and user can used the trial version but if they need it for long time they must purchase the license.

1.3 Objective

The objectives of this project are:

- a) To implement a web-based user interface or client-server for router monitoring and configuration system in IPv4 environment.
- b) To develop graphic user interface (GUI) that more interesting and less complexity and make router configuration based on web-based user interface easier than existing system and more user friendly to use.

- c) To develop a web-based system router monitoring so monitoring and managing can be done from different place as long as the router is connected to the workstation and web server.

1.4 Scope

The scopes of Web Based IPv4 3Com Router Configuration System are:

- The target users for this project are network administrator, students, beginner user that is unfamiliar with 3com router command line. By using web-based, managing and monitoring the routers easily even though it was the first time for them using this system. When problem occur, by using this system, it much more save the time to solve it.
- The development of web application system is using Personal Home Page (PHP) language.
- The function covered in this project are:
 - Configuration of interfaces for IPv4 addresses
 - Configuration of basic system management
 - Hostname, local-user account and etc
 - Routing protocol
 - Static Routing, RIPv1 and RIPv2
- Limitations are for Local Area Network (LAN) and Wide Area Network (WAN)

1.5 Project Significant

The Prototype of Web Based of IPv4 3Com Router Configuration System has several benefits especially to the fresh user and also for beginner network administrator in router configuration of IPv4 addresses. By using this system, it will make the configuration easier and user does not need to remember all of the command line. Besides, it also allow network administrator troubleshoot and change the configuration of the router from remote without need to go direct to the router.

1.6 Expected Output

The expected outputs of the project are:

- (i) An enhanced prototype of web-based 3Com router configuration will be produced for supporting IPv4 addresses to make the management of router configuration more effective than existing system.
- (ii) This system will be able to become a simple and user friendly system for user to use it and also will help fresh user to easily learn about 3com router configuration.
- (iii) User also will be able to change the basic configuration, for the example (router name, admin password and etc) and also details information like IP addresses, subnet mask and default gateway.