

CHAPTER I INTRODUCTION

1.1 Background

Network performance will certainly harm a loss for a company or institution when the network performance used by the company turns out to be slow, it must be very influential on the company's performance itself, especially if a company always relies on the internet for the smooth running of its business. More and more companies need good network performance, fast and safe network performance is needed. now the exchange of data through public networks or we often call the internet has become commonplace and is often done. However, problems arise where the quality and security of vulnerable networks and need to be considered in public networks such as to obtain or provide information is very possible to have its risks because the internet is open to the public. Then the problem and confidentiality of the information sent and received will also be open. There are often attacks from inside and outside the network. These attacks can damage the network and steal information data that is on the network.

To overcome the above problems, several methods can be used to overcome these problems, in network security, security sharing is applied such as data encryption and firewalls. Firewalls help with security, but with the development of current technology only with a security firewall is not fully guaranteed. Then added additional network security including using VPN. VPN is a private virtual network that is not physically visible where only certain clients

can use this service. By applying this point to point network method to its destination in real-time it becomes a reliable technology to deal with attacks from inside and outside. VPN also features tunnel methods that can be combined.

Tunneling is the basis of VPN to create a private network through the internet network. Tunneling is also an encapsulation or packaging of a protocol into another protocol packet. Packing a data packet can be used to share protocols that are designed for tunneling. Tunnel protocols that can be used such as PPTP, PPPOE, L2TP, IPSEC, SSTP, and OpenVPN. From the various protocols, the authors chose BCP OVER PPTP and PPPOE to use in this study. Where PPPOE has been integrated throughout the new operating system, while PPTP has an abundance that has been integrated into the Windows operating system. PPTP tunnel that will be integrated with the BCP protocol. The bridge control protocol (BCP), a protocol that allows forwarding ethernet packets via a PPTP link. Where PPTP as encryption tunnel and BCP to forward Ethernet packets. This makes the testers choose the two protocols through testing.

Besides having to pay attention to failures in the system, security of scalability, a good network must also be considered the quality of the services that will be provided to users. If the computer network is not able to provide maximum service to the user, then make sure the user will not be comfortable using the network. To build a network, it must take into account the quality of network services usually referred to as Quality of Service.

In analyzing QOS testing is done by streaming youtube, downloading files and uploading files, knowing the results of the package, then analyzed to obtain the value of throughput, delay jitter, and packet loss. The research was carried out using two pc clients connected to 2 routers.

In the description of the problem above, the researcher includes a topic entitled "**Comparison of BCP Over PPTP and PPPOE Based on Mikrotik**" with this the researcher is expected to provide a conclusion comparing the protocol performance.

1.2 Statement of the Problem

Based on the background that has been stated, the formulation of the problem in this research is "Comparing the quality of BCP Over PPTP and PPPOE network performance results using the QOS method".

1.3 Objectives of the Research

Limitation of the problems used in this research are:

1. Using Mikrotik series RB941-2nD
2. Just focus on the difference in network performance results
3. Testing is carried out on IndiHome's ISP public network with certain bandwidth
4. Testing network performance measured is throughput, delay jitter and packet loss.

5. Configuration is on Winbox.

1.4 Purpose and Objective

The purpose of the research conducted by the author is as follows:

1. Analyze the BCP Over PPTP and PPPOE network performance capabilities.
2. Knowing the Comparison of network performance with the parameters of Quality of Service.

1.5 Benefits of Research

The research benefits are as follows.

1. Can find out the magnitude of the difference in the comparative results of network performance between PPTP and PPPOE BCP OVER methods.
2. Can be a reference for other researchers who do researchers

1.6 Research Methods

Research methods conducted by researchers to obtain data problems from this study are:

1.6.1 Method of Literature study

Data collection by reading and understanding concept theories according to experts in the form of national and international scientific journals, books or internet sources relating to the topic of research understudy, henceforth will be

used as a theoretical basis for solving problems and thesis preparation testing is carried out on IndiHome's ISP public

1.6.2 Testing Method

In the trial method, the researcher will test the BCP Over PPTP and PPPOE methods on the proxy route device as a network provider. The test method is to configure 2 routers with each different method, the first router uses the BCP PPT method, the second router uses PPPOE. The results of trials conducted by researchers to compare one method with another which is the best using the Wireshark application system.

1.6.3 Design Method

Determination of network topology and the needs and testing required to carry out research.

1.7 Outline

The systematic writing of this thesis is divided into several parts.

CHAPTER I INTRODUCTION

This chapter contains background Issues, Limitation of Problems, Purpose and Research Objectives, Research Benefits and systematic Writing of thesis.

CHAPTER II THEORETICAL BASIS

This chapter discusses references that support the thesis analysis process.

CHAPTER III RESEARCH METHOD

This chapter is about what methods will be used in research and make comparisons to be used as material and knowledge base.

CHAPTER IV RESULTS AND DISCUSSION

This chapter contains the system requirements design and method implementation, method testing and BCP OVER PPTP AND PPPOE performance comparison

CHAPTER V CLOSING

Contains conclusions and suggestions. The conclusion contains answers to problems that occur, while the suggestion contains the thoughts of the author for the development plan for further research

