

CHAPTER I

PRELIMINARY

1.1 Background

The rapid development of information technology at this time, especially the emergence of internet networks that can provide convenience in exchanging information. By having adequate internet quality, internet access will also be adequate with adequate number of access from users. And another case if the user exceeds the capacity that has been determined by the internet provider such as Indihome which provides a quota on the internet. Quota provided by indihome varies depending on how much internet speed we use.

In this modern era, the author says "if we go to a cafe or 'Internet cafe' and want internet access with the speed and quota that suits our needs, we will be asked to choose a voucher package that suits your needs." With these demands to increase mobility and supported by radio frequency technology, the creation of Wireless Local Area Network (WLAN) technology. Hotspot is a term used for wireless LAN facilities available in certain areas. Applications that are widely used for hotspots, one of which is the Internet. So, with a hotspot, users can share wireless internet connections, wireless printing, and so on. (Source: Journal of Information Management, Volume 8 Number 02 of 2018, 18-24)[1].

The greater the need for network connections of a work unit, the bandwidth quota provided by technicians is also greater. Even this quota bandwidth distribution is also given to students by means of each boarding child can get a user name and password through an IT (Internet Technology) technician. This is done to avoid usage along with the IP-Address provided. (source: Analysis of Service Quality on the Internet Quota System at IAIN Palopo (Rosdiana)[2]).

From this background the writer wants to analyze the problem at hand and make a solution. By making Quality of Internet Access in the Boarding Environment with the Design of Signal Strength and Bandwidth Management Quota-Based in order to provide comfort to every occupant of the boarding house in the beautiful gem of a guesthouse and create a guesthouse scheme to find out the arrangement of the router location in places that can get signals from the router .

1.2 Problem Formulation

Based on the background of the problem, a problem statement can be taken as follows:

How to improve the quality of internet access in the boarding environment with Access Point Layout Arrangement and bandwidth management?

1.3 Issue Limit

To avoid discussing problems that are too broad, the writing of this thesis is given clear limits. Here are the limitations of the problem.

1. Find out the quality of the internet at the beautiful gem of a guesthouse
2. Not discussing the types of attacks carried out on the network in depth.
3. The layout of the router in a beautiful gem guesthouse
4. Giving quota to each room so that internet quota is not used up quickly
5. Limit upload and download bandwidth

1.4 Research purposes

The purpose of this skripsi writer is as one of the requirements for completing education in the undergraduate program in Informatics Engineering at Yogyakarta Amikom University.

1.5 Research methods

The research methods by the author are as follows:

1. System Analysis

The analytical method used to identify problems that occur by asking friends of boarding school children what are the problems that often occur, then the hypothesis is the solution and analysis of system requirements.

2. System design

Perform system modeling concepts such as system overview, topology design, bandwidth limitation, and create a stable quota.

System Configuration

The system configuration process includes:

- Configuring bandwidth restrictions
- Configure the firewall on the proxy version of RB951 series
- Configure wifi on the proxy

3. Data Collection

Observation Method

Observation was carried out with the following stages:

1. Conduct a direct survey to the Wisma Permata Indah to find out the system and network models that are running to find out the problem at hand.
2. Conduct analysis of survey stages.
3. Identifying hardware and software.

Library Method

To support the analysis of signal strength design and bandwidth management, the library method is used as a reference, the library used in the form of books, relevant documents, articles and information from the internet related to the thesis topic.

4. Tools and Materials

The tools used by the author are winbox, packet tracer, laptop, PC, proxy, and LAN cable. To be able to complete the design of this simulation.

5. Implementation

At this stage, a sub-system configuration is performed on the PC Router installed in the RB951 series, which is integrated into the quality of internet access in a boarding environment.

6. System Testing

Testing the system by conducting a simulated attack experiment, whether the system can limit the bandwidth that already exists in the beautiful Permata guesthouse.

7. System Evaluation

System evaluation is carried out to find out whether the system runs in accordance with the research objectives.

8. System Maintenance

The system maintenance phase is carried out with regular monitoring and monitoring by updating the firewall so the system can operate properly.

1.6 Writing system

Writing this skripsi has a systematic writing as follows:

CHAPTER I PRELIMINARY

This chapter is an introduction that explains the background of the problem, problem formulation, problem boundaries, research objectives, research benefits, data collection methods, system development, and systematic writing.

CHAPTER II Theory of Theory

This chapter explains the theoretical foundations used in relation to improving the quality of internet access in the boarding environment by designing signal strength and quota-based bandwidth management.

CHAPTER III RESEARCH METHODS

Contains analysis of the system that will be built design and overview of the system. Discussing the place of research, identifying problem findings, solution hypotheses, system requirements analysis, network topology design, firewall design and system implementation procedures.

CHAPTER IV RESULTS AND DISCUSSION

This chapter contains a discussion of the steps in implementing the system, configuration, network experiments, and testing of the results of research whether it is in accordance with the objectives of the study and discussion of the results that have been achieved.

CHAPTER V CLOSING

This chapter is the final part of the thesis writer which contains conclusions and suggestions obtained from improving the quality of internet access in the boarding environment by designing signal strength and bandwidth management based on quotas.

