TEST PERFORMANCE ROUTEROS ON BOARD WITCH ROUTERO ON PC

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Abstract

In the current technological developments aplenty RouterOS on Board that offers multiple features and functions to the needs of the network. In the development of on-board RouterOS be preferred due to the more simple and more efficient, in terms of price is also not too relatively expensive no wonder a lot of interest and preferred. RouterOS on Board is widely used in several companies and the education community.

Mikrotik is a common tool used to connect networks, Mikrotik do some breakthrough hardware that is making the hardware and software associated with the computer network system. As we know MikroTik RouterOS ™ is an operating system that can be used on personal computers widened router reliable network is among others includes many features that are made by proxy, such as Routing - Static Routing, Hotspot, Simple Tunnels, Web Proxy, DHCP, VRRP, NTP , SNMP, mndp, Firewall and NAT and others. It had been the cornerstone of this research on the endurance test RouterOS on Board same RouterOS Base on PC and this study using MikroTik RouterOS ™ as test equipment, later to be tested from the component keudua to see to what extent the network deal with activating existing features. From the experimental results are later expected gain new knowledge that the tool which is suitable for use in handling the network.

Keywords:*MikroTik RouterOS™, RouterOS Base on PC, Network, Test Bad, Router Mikrotik*

1. INTRODUCTION

In the current technological developments aplenty RouterOS on Board that offers multiple features and functions to the needs of the network. In the development of on-board RouterOS be preferred due to the more simple and more efficient, in terms of price is also not too relatively expensive no wonder a lot of interest and preferred. RouterOS on Board is widely used in several companies and the education community.

But such people are talking about that in the application field aplenty obtained several problems that are not optimal performance if arbitrarily used features, one of which is Mikrotik RouterOS on Board.

Mikrotik is a common tool used to connect to the network, the development mikrotik do some breakthroughs, namely the manufacture of hardware and software associated with the computer network system.

As we know Mikrotik RouterOS[TM] is an operating system that can be used to change the computer even become a router reliable network is among others includes many features that are made by proxy, such as Routing - Static Routing, Hotspot, Simple Tunnels, Web Proxy, DHCP, VRRP, NTP, SNMP, MNDP, Firewall and NAT and others.

When viewed from some of the existing features in RouterOS[TM] Mikrotik is clear that it is suitable to do anything much to do with the network, but the extent to which the system is able to handle the problems that exist if all features are used or the system is running continuously without stopping.

It had been the cornerstone of this research on the endurance test RouterOS on Board with RouterOS Base on PC and this study using Mikrotik RouterOS[TM] as test equipment, later to be tested from these two components to see how far in addressing the network.

2. LITERATURE

A router is a device that will pass IP packets from one network to another, using the methods and protocols addressing certain to pass the packet data [2].Router serves as a liaison between two or more networks and duty to provide access rights, routers are very widely used in technology-based network is among others the ProtocolICP / IP.

Figure 1. Device Router
(*Source: Device LAN, Router Dwi Febrian Handriyanto, Jurnal Universitas Sriwijaya*)

MikroTik Router OS is the operating system and software that can be used to make computers as reliable network router, includes a variety of features that are made for IP networks and wireless networks, suitable for use by ISPs and hotspot providers (Mikrotik Indonesia).

Besides the installation can be done on a Standard PC (Personal Computer). PC which will be used as proxy router also does not require resource large enough to use standard, for example, only as a gateway. For the purposes of a large load (network complex, complicated routing) are advised to consider the selection of adequate resource PC.Type of Mikrotik :

a. MikroTik RouterOS form of software that can be downloaded in www.mikrotik.com. Can be installed in home computers (PC).
b. BUILT-IN Hardware MikroTik in the form of special hardware is packaged in a board that includes routers already installed MikroTik RouterOS.

3. RESEARCH METHOD

In doing this research, carried out in ways such data collection techniques Library Studies and Observation. The reason researchers performing this method is to present a realistic picture of behavior or events, to answer questions, and to evaluate that take measurements of certain aspects of the conduct feedback on these measurements. as follows:

3.1 Studi Library

Data collection is done by searching, reading and collecting documents as references such as books, articles and literature and browsing on the internet relating to Mikrotik.

3.2 Observation

a. Observation partisipatif

Data collection methods used to collect research data through observation and sensing where the observer or investigator actually involved in everyday respondents.

b. Observation overtly or covertly

In this case, researchers in data collection expressed frankly to the data source, that he will do the research, so they studied to know from the beginning to the end of the activity Researcher

c. Observation unstructured

Observations made without the use of your observation. In this observation the researcher or observer should be able to develop the power of observation in observing an object.

3.3 Network Topology

The network topology used in this study are as follows:
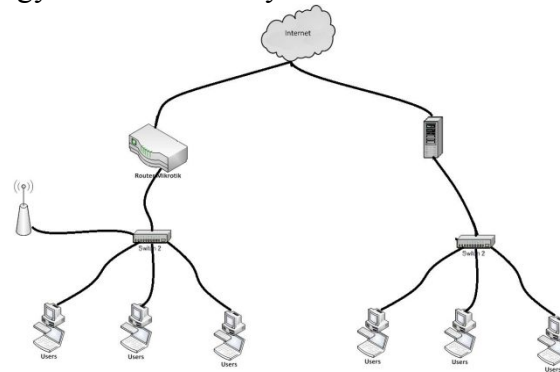
Figure 2. The network topology in research

Clarify the application or implementation is done in one place and one ISP were performed using two (2) routers that with RouterOS and RouterBoard. Testing is done based on packet loss and delay on the client, where both devices are activated features of Firewall, Web Proxy, NAT, graphs Monitoring, Bandwidth Management.

3.4 The course of study

In this study took place in Politeknik Negeri Indramayu Jl. lohbenerlama no 8 indramayu.
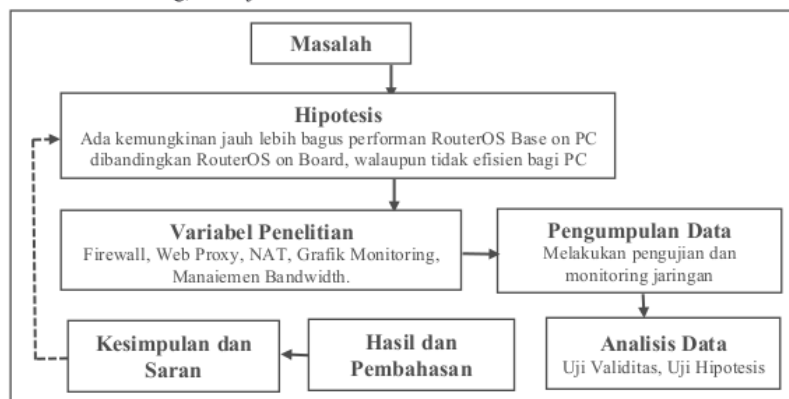
Figure 3. Flow chart

Based on the picture above, this research will be done in stages as follows:

For early stage researchers assume the performance of both the tool and do some analysis.To install Mikrotik PC and configuring the proxy Bord Router and enable some

of the features in these two tools.Doing phase of the data collection process what happened and collect information that occurs when multiple features are enabled and see this information on a graph that has been provided by the proxy feature.Test replicated by viewing and comparing to what happened during the trial progresses.Make what conclusions have been drawn from the data the test results of these two tools.

4. RESULTS AND DISCUSSION
4.1 Configuration Mikrotik
1) Installation Mikrotik

Figure 4.*Boot Kernel Isolinu*x MikroTik

After the boot process is completed then several options menu of the software package Install, choose according to the needs that have been planned.

Figure 5.*Paket Software* MikroTik

It will show a start page MikroTik, press enter to enter the prompt for *command line*.

Figure 6. Display M*ikroTik*

4.2 Examination Grafik CPU, Disk, Memory
The results of trials that has been done is seemingly on a test chart to graph display the CPU, Memory Usage, Disk Usage. The test is performed after turning the system features in both PC and RouterOS Mikrotik on Board.
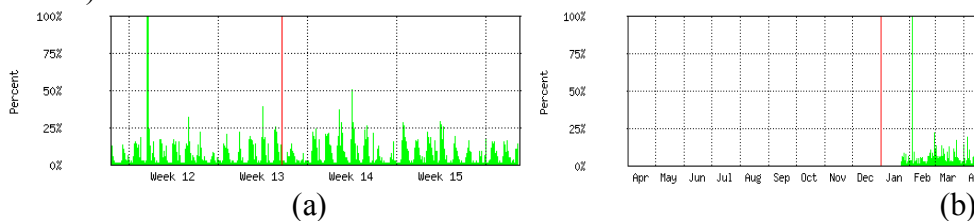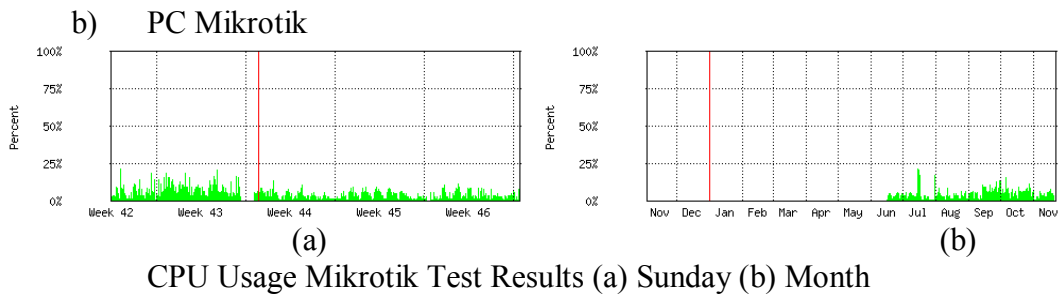
1)Test result *CPU Usage*
a)   Mikrotik

|(a)|(b)|

CPU Usage Mikrotik Test Results (a) Sunday (b) Month

b)   PC Mikrotik

(a)   (b)
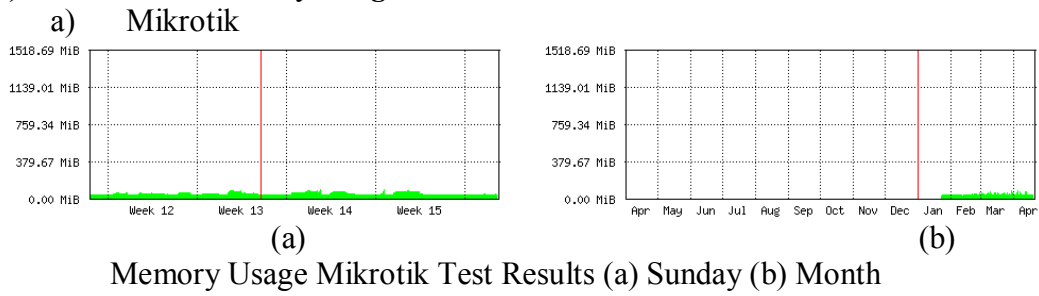
CPU Usage Mikrotik Test Results (a) Sunday (b) Month

2)   Test result *Memory Usage*
a)   Mikrotik

(a)   (b)

Memory Usage Mikrotik Test Results (a) Sunday (b) Month

b)   PC Mikrotik

(a)   (b)

Memory Usage Mikrotik Test Results (a) Sunday (b) Month

3)   Test result *Disk Usage*
a)   Mikrotik

(a)   (b)

Disk Usage Mikrotik Test Results (a) Sunday (b) Month

b)   PC Mikrotik

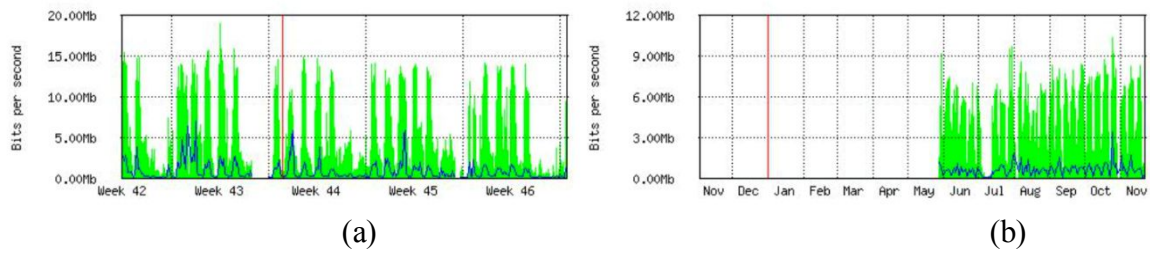(a)   (b)

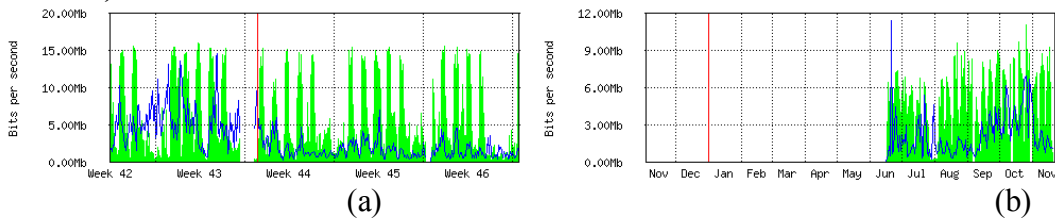Disk Usage Mikrotik Test Results (a) Sunday (b) Month
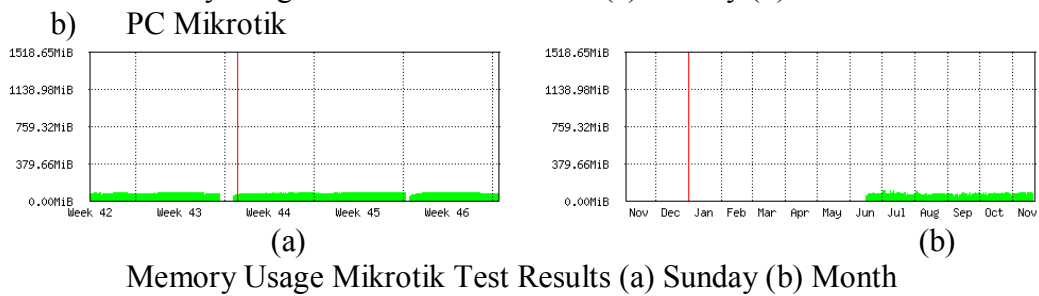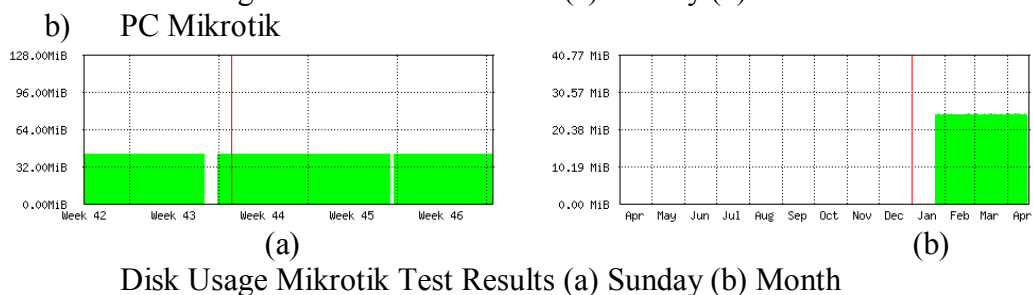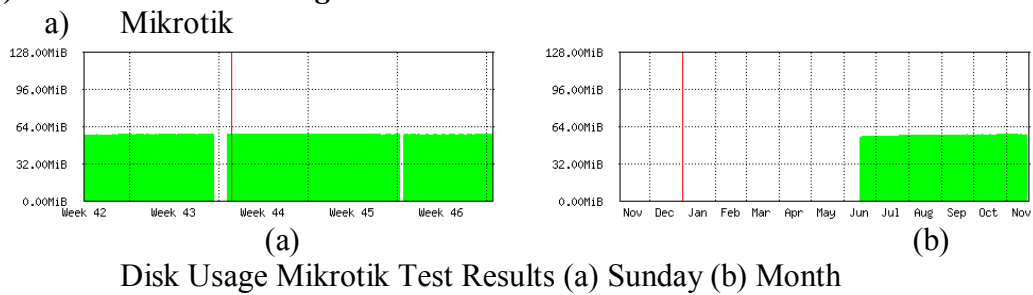
4.3 Test Grafik Bandwidth

Bandwidth graphs the test results based on activity in Indramayu State Polytechnic campus life, this chart shows the level of intensity used and the internet.

1) Mikrotik

(a)   (b)

Mikrotik Bandwidth Test Result Graph (a) Sunday (b) Month

2) PC Mikrotik

(a)   (b)

Bandwidth Test Results Graph Mikrotik PC (a) Sunday (b) Month

Judging from the above test results clearly seen on some graph shows the difference between RouterOS RouterOS Base on the PC and on Board. From the graph shows the optimization of usage, RouterOS on Board having some problems is among others on the use of CPU Usage almost 50% - 100% there is usage of CPU Usage, whereas in RouterOS Base on PC just under 25%. To use Memory Usage on RouterOS on Board only took $100 \pm$ MiB of 1518.65MiB and on RouterOS Base on the PC is not much different from the RouterOS on Board. To use Disk Usage is a little different that the RouterOS on Board judging almost 64.00MiB while on RouterOS Base on the above PC $\geq$ 32.00MiB.

5. REFERENCES

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