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INTERNATIONAL CONFERENCE

ENGINEERING & TECHNOLOGY DEVELOPMENT
UBL ICETD
2013

The Second International Conference on Engineering and Technology Development

2nd ICETD 2013

27, 28, 29 August 2013, Bandar Lampung, Indonesia

PROCEEDINGS

In Cooperations With :

APTIKOM

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

SURYA INSTITUTE

Hosted by :
Faculty of Engineering and Faculty of Computer Science,
Bandar Lampung University (UBL), Indonesia

2nd ICETD 2013

The Second International Conference On Engineering And Technology Development

28 -30 January 2013
Bandar Lampung University (UBL)
Lampung, Indonesia

PROCEEDINGS

Organized by:

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PREFACE

The Activities of the International Conference is in line and very appropriate with the vision and mission of Bandar Lampung University (UBL) to promote training and education as well as research in these areas.

On behalf of the Second International Conference on Engineering and Technology Development (2nd ICETD 2013) organizing committee, we are very pleased with the very good response especially from the keynote speaker and from the participans. It is noteworthy to point out that about 80 technical papers were received for this conference.

The participants of the conference come from many well known universities, among others : University Kebangsaan Malaysia – Malaysia, APTIKOM – Indonesia, Institut Teknologi sepuluh November – Indonesia, Surya Institute – Indonesia, International Islamic University – Malaysia, STMIK Mitra Lampung – lampung, Bandung Institut of Technology – Bandung, Lecture of The Malahayati University, B2TP – BPPT Researcher – lampung, Starch Technology Center – Lampung, Universitas Islam Indonesia – Indonesia, Politeknik Negeri Malang – Malang,University of Kitakyushu – Japan, Gadjah Mada University – Indonesia, Universitas Malahayati – Lampung, Lampung University – lampung, Starch Technology Center – Lampung, Universitas Riau – Riau, Hasanuddin University – Indonesia, Diponegoro University – Indonesia, King Abdulaziz University – Saudi Arabia, Parahyangan Catholic University – Indonesia , National Taiwan University– Taiwan, Surakarta Christian University – Indonesia, Sugijapranata Catholic University – Indonesia, Semarang University – Indonesia, University of Brawijaya – Indonesia, PPKIA Tarakanita Rahmawati – Indonesia, Kyushu University, Fukuoka – Japan, Science and Technology Beijing – China, Institut Teknologi Sepuluh Nopember – Surabaya, Researcher of Starch Technology Center, Universitas Muhammadiyah Metro – Metro, National University of Malaysia – Malaysia.

I would like to express my deepest gratitude to the International Advisory Board members, sponsor and also to all keynote speakers and all participants. I am also gratefull to all organizing committee and all of the reviewers who contribute to the high standard of the conference. Also I would like to express my deepest gratitude to the Rector of Bandar Lampung University (UBL) who give us endless support to these activities, so that the conference can be administrated on time

Bandar Lampung, 29 August 2013-08-26

Mustofa Usman, Ph.D
2nd ICETD Chairman

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Bridging Router to ADSL Modem for Stability Network Connection

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Abstract : *We often use the modem but often also see the modem gets hot, because there is also an increase in the process that uses the entire capacity of the modem. Modem is a device used to convert from analog signals to digital signals. Modem that works in full and will also experience the maximum heat conditions. The modem overheats due to an increase in the connection often dropped out suddenly. This is so the problems that often occur in the modem user. Modem is in meticulous type of ADSL technology. ADSL Modem type is very much in use by home users. Experience using this modem, the modem at the beginning of stable then increase the heat, then drop the connection. The approach we use is the method of approach to the bridge network routers, where the router that will perform the function dial and modem just as a conductor only. The router is a device that is used to skip the lines and network maps.*

Keyword, Bridge Network, Modem, Oeverheat Modem, Router, ADSL

INTRODUCTION

The use of the Internet at the moment is very much its unbelievable. Internet is not only used by young men only, but in early 2012 the internet today has entered a new phase in which the users has been mixed with different kinds of people. Devices that have been long in use typically suffered damage caused by aging equipment and so on. Every device that has been in production, should be supplied by a variety of cutting-edge technology or the latest. As we all know where that technology is at the start by a modem dial-up modem that only uses little bandwidth and are now using very sophisticated. Own modem is a device that converts from analog signal to digital signal. In the daily life of internet users
The growth of Internet users in Indonesia in the last 10 years very quickly. Twelve years ago, Internet users in Indonesia is only 2 million people. Now, at least until the end of December 2012, the Association of Indonesian Internet Service Providers record internet users in the country has reached 63 million people.

PROBLEMS

Use a modem that is too long may result in overheating. Excess heat that can lead to lost connections nyanya. Here we will formulate the problems that often occur in ADSL modem, namely:

- Excessive heat when the modem is used in a long time (more than 1 hour)
- If heat occurs on the appliance, the appliance will be dropped out of the network connection
- If the modem has been disconnected and suhun still hot, then to dial back will often have failed to connect to the network connection.

FRAMEWORK

Issues raised in the above will be made into a frame of mind the following:

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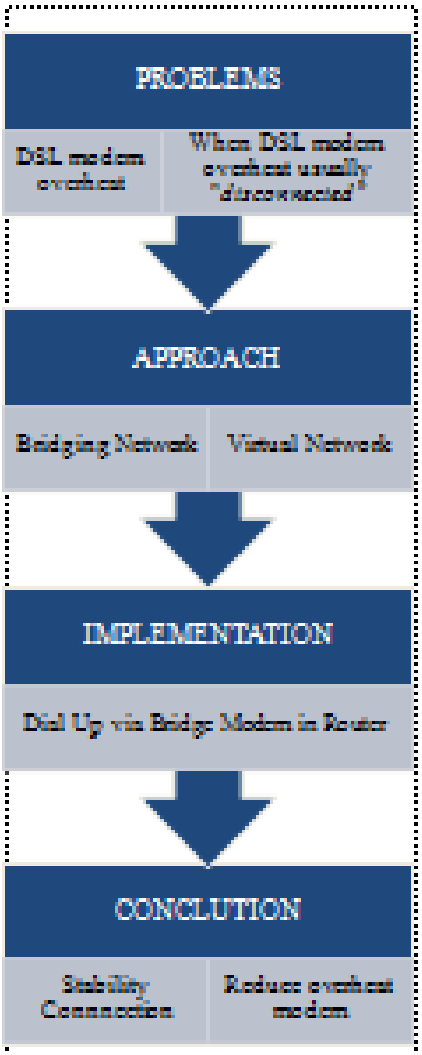


Conclusions obtained from the frame work allows us to make multi-way lines of communication with modem.

THE DEVICE

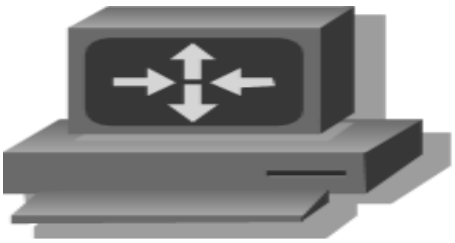
We use some of the following devices in this research are:

a. Modem ADSL

b. Switch

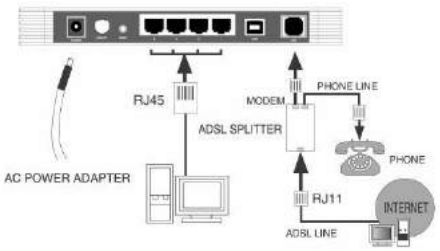
c. Router / PC – Router

d.



TOPOLOGY

At this research uses network topology directly from the UTP cable to the modem, it is intended to provide the maximum path in the network bridge method. While the topology itself is a draft and design network communication channels between computers with software that is in use. Topology also provides an explanation on the intent of a network.



Here are the main topology design that I use when researching the use of :

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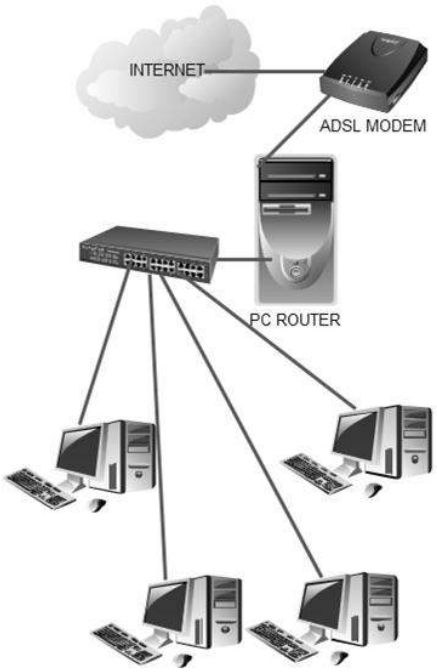
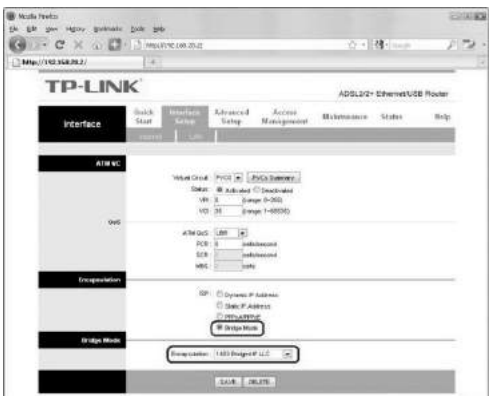


THE BRIDGE

Here are the steps in the travel on the construction of the bridge via modem dial:

- Bridge Modem
  Make sure that the modem was in bridge mode setting for the position. Bridge mode is a position where there is no Internet Protocol / IP is entered or made. This image was taken from the modem tp-link modem commonly found on the market in Indonesia country. Modem settings are already in the bridge then UTP cable plugged directly to the pc-router or router, then from the router to be set up the connection.



- Router
  Device that forwards data packets between computer networks, creating an overlay internetwork. A router is connected to two or more data lines from different networks. When a data packet comes in one of the lines, the router reads the address information in the packet to determine its ultimate destination. Then, using information in its routing table or routing policy, it directs the packet to the next network on its journey. Routers perform the "traffic directing" functions on the Internet. A data packet is typically forwarded from one router to another through the networks that constitute the internetwork until it reaches its destination node.
  In another journal, A router is a network device that is used to divide the protocol to the other members of the network, with a router then a protocol can be shared to other network devices. Example applications are if we want to split the IP Address to the members of the network, we can use this router, the router features is the facility DHCP (Dynamic Host Configuration Procotol), by setting up DHCP, then we can divide the IP Address, the other facilities of the Router is the NAT (Network Address Translator) that can allow an IP address or internet connection to be shared another IP address, for example, if on a network device (computer) has IP Adress is 192.168.0.1, so that other computers can communicate, must be given the IP address of the Network Identification 192.168.0 and the Host Identification 2-254, example 192.168.0.10, 192.168.0.11 and onwards.
  Problems will arise when the networks connected very much (usually above 20 device), an administrator will be forced around to setting up the IP address of each

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host, therefore we can use the Router.

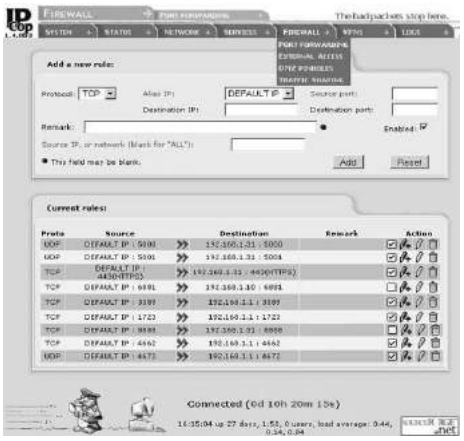
Types of Routers

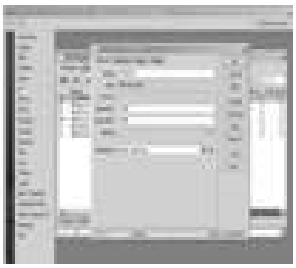
1. Router Application
2. Router Hardware
3. PC Router

Router application is an application that can be installed pad operating system, so the operating system will have the ability as a router, an example of this application is WinRoute, WinGate, SpyGate, WinProxy and others.

Hardware is a hardware router that has the ability like router, so that from the hardware can emit or divide the IP Address and IP Address to sharing, in practice, a hardware router is used to share Internet connection on a space or area, this is an example of an access router point, the area to get Ip address and an internet connection called Hot Spot Area.

Router is a PC Operating System has the facility to divide and mensharing IP Address, so if a network device (pc) connected to a computer will be able to enjoy the IP Address or Internet connection is shared by the operating system, the operating system instance that can be used is all client server-based operating systems, such as Windows NT, Windows NT 4.0, Windows 2000 server, Windows 2003 Server, MikroTik (Linux-based), and others.





IPCOP router

Mikrotik Router

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