ABSTRAK

Interface bonding adalah teknologi untuk menggabungkan dua atau lebih *port ethernet* pada komputer, jika salah satu *port ethernet* kehilangan koneksi *port ethernet* lainnya yang tergabung dalam *interface bonding* dapat mengambil alih trafik jaringan dengan *downtime* nol atau minimal.

Pada sistem operasi *linux* dan *mikrotik* teknologi *interface bonding* memiliki 7 mode, yaitu : mode *balance-rr*, mode *active-backup*, mode *balance-xor*, mode *broadcast*, mode 802.3ad, mode *balance-tlb* dan mode *balance-alb.* Setiap mode *interface bonding* tersebut memiliki cara kerja dan kelebihan masing – masing untuk meningkatkan unjuk kerja jaringan. Untuk mengetahui kemampuan unjuk kerja 7 mode *interface bonding* tersebut dibutuhkan parameter *QoS*, yaitu : *delay, packet loss* dan *throughtput.*

Dalam tugas akhir ini, pengujian pengukuran 7 mode *interface bonding* menggunakan 3 *port ethernet,* setiap *port ethernet* mempunyai kemampuan transfer data 100 *Mbps*. Pengukuran dilakukan dengan melakukan proses download dari komputer *server* menggunakan protokol *FTP* (*File Transfer Protocol*) yang sederhana dalam implementasinya.

Hasil pengujian pengukuran 7 mode *interface bonding,* mode *balance-rr* memiliki unjuk kerja terbaik karena menggunakan semua *port ethernet* untuk proses transfer data. Rata – rata *throughtput* yang lebih besar membuat *delay* lebih kecil walaupun memiliki *persentase packet loss* tetapi tidak mempengaruhi unjuk kerja jaringan. Mode *active-backup* memiliki unjuk kerja terbaik ke-2 karena saat proses transfer data kemudian terjadi kesalahan jaringan trafik proses transfer data tetap stabil.

Kata kunci : *interface bonding*, parameter *QoS*, *FTP*, *linux*, *mikrotik, ARP.*

ABSTRACT

Interface bonding is a technology to conjoint two or more port ethernet on a computer. If one port Ethernet lost its connection so the other port ethernet conjoined in interface bonding could take place the network traffic by downtime zero or minimum value.

In linux and mikrotik operation system, interface bonding technology has 7 modes they are: balance-rr mode, active-backup mode, balance-or mode, broadcast mode, 802.3ad mode, balance-tlb mode and balance alb mode. Each of those interface bonding has its own operation and advantages to increase network performance. To examine those 7 interface bonding modes, it is required QoS parameter such as: delay, packet loss and throughtput.

As in this final assignment, the measurement testing of 7 interface bonding mode was implemented 3 ports Ethernet. Each of port Ethernet had transfer data capability for about 100 Mbps. The measurement was carried out by conducting download process from computer server by using simple protocol of FTP (File Tranfer Protocol) in its implementation.

The measurement testing result of 7 interface bonding mode has showed that balance-rr mode had the best network performance since it used all port Ethernet in its transfer data process. The bigger average of throughtput made the delay seemed lesser even it had packet loss percentage but it did not affected the network performance. Active-backup mode was considered the second best network performance since when the network traffic error occurred, transfer data process was able to keep stable.

Keyword : interface bonding, Qos parameter, FTP, linux, mikrotik, ARP.