# ANALISIS METODE PENGAMANAN PADA PENGGUNAAN *FIREWALL* MIKROTIK UNTUK KEAMANAN JARINGAN KOMPUTER

SKRIPSI

Diajukan untuk memenuhi salah satu syarat untuk memperoleh gelar Sarjana Teknik, pada Program Studi S-1 Teknik Elektro


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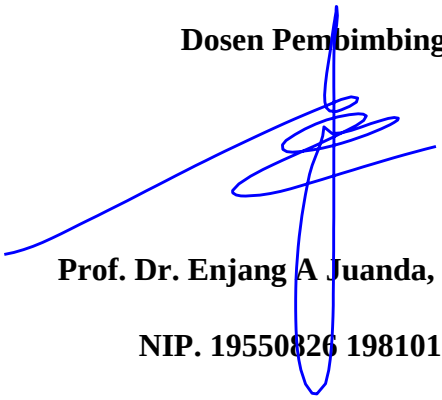

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## ABSTRAK

Serangan pada jaringan komputer menjadi lebih mudah dilakukan karena adanya ponsel pintar yang dapat melakukan berbagai hal pada jaringan tersebut, seperti melakukan observasi, menggunakan terminal, mengakses *database* dari jarak jauh, dan hal yang lain yang kegunaannya mendekati sistem operasi *Linux* yang dipasang di *desktop* pada umumnya. Untuk itu diperlukan suatu cara untuk mencegah atau meminimalisir dampak dari serangan keamanan siber dengan cara meningkatkan keamanan pada jaringan. Oleh karena itu, kemampuan *router* atau *server* dalam mencegah serangan harus optimal, salah satunya dengan memanfaatkan *firewall*. Arsitektur yang digunakan dalam percobaan ini meliputi *router*, jaringan *internal*, *server*, *Demilitarized Zone* (*DMZ*), dan *honeypot*. Metode yang diusulkan untuk mendapatkan performa *firewall* yang optimal dengan cara membandingkan setiap kemungkinan metode pengamanan jaringan pada *firewall*. Pada penelitian ini metode yang digunakan untuk mengamankan jaringan komputer menggunakan metode *Drop*, *Reject*, *Tarpit*, dan *redirect* ke *honeypot*, serta penggunaan konsep *DMZ*. Sedangkan untuk pengujian sistem, penelitian ini akan menggunakan metode *denial-of-service* terdistribusi menuju sistem. Setelah melalui proses ini, data dikumpulkan dan ditinjau untuk menemukan cara terbaik untuk menangani serangan dengan menggunakan *MCDM TOPSIS Entropy* dan *Critic*



**Kata kunci: Keamanan Jaringan, *Drop, Reject, Tarpit, redirect, honeypot, DMZ, MCDM, TOPSIS, Entropy, Critic.***



## ABSTRACT

*Attacks on computer networks have become more accessible because smartphones can do various things to the network, such as making observations, using terminals, accessing databases remotely, and others whose uses are close to the Linux operating system installed on a desktop in general. For that, we need a way to prevent or minimize the impact of cybersecurity attacks by increasing security on the network. Therefore, the ability of a router or server to handle attacks must be optimal, one of which is by utilizing a firewall. The architectures used in this experiment include routers, internal networks, servers, Demilitarized Zone (DMZ), and honeypots. The proposed method to get optimal firewall performance is to compare every possible security method on the firewall. In this research the method used to secure computer networks is by using the Drop, Reject, Tarpit, and redirect, and the use of the DMZ concept. As for system testing, this study will use the denial-of-service method to penetrate the system. After going through this process, the output* data *are collected and reviewed to get the best way to handle attacks by using MCDM TOPSIS Entropy and Critic.*



**Keywords: *Cyber Security, Drop, Reject, Tarpit, redirect, honeypot, DMZ, MCDM, TOPSIS, Entropy, Critic.***

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