

## **ABSTRACT**

Designing a computer network security is important when designing a computer network in organization. Failure in designing computer network security can pose a security risk both economic and legal risks. Telkom University is an educational institute that has focused on the development of information technology-based science and art. As an information technology-based educational institution, Telkom University uses a computer network to support academic activities. Therefore, the design of computer network security is required to secure academic activities.

Designing computer network security in Telkom University uses Network Development Life Cycle methodology. This method is cyclical, making it possible to do a continual improvement. In the early stages of research to identify existing conditions. Then, performed simulations to determine whether the proposed design has met the needs of users, then the proposal can be accepted as a guide to develop a computer network security. The proposal will include protection against DoS/DDoS, implementation of Intrusion Detection/Prevention System to detect and prevent attacks, and implementation of VPN technology to secure SSH connection to the server in the data center.

From the results showed that protection against DoS/DDoS can save bandwidth up to 99.98%, IDPS device capable of detecting attacks, and SSH connection using VPN successfully performed. In the recommendation, made a proposal for the implementation of network security design at the Telkom University.

Keyword: Computer Network Security, Network Security Design