

## ABSTRACT

Computer networks at this time are very developed. With a computer network everyone can communicate, share and exchange information. Distributed Hash Table is a method for storing data and sharing data peer-to-peer. However, there are security risks when storing data, such as data loss or theft. One solution that can be proposed to maintain the security of file sharing data is by using the Distributed Hash Table system and measuring the performance analysis of the Distributed Hash Table. The algorithm used in this final project is kademlia. The first step in this application is to make a prototype which aims to facilitate the manufacture of the system. The final result of this research is a system that can do file sharing and security on distributed data using Distributed Hash Table. The file will be uploaded and downloaded by other nodes and then stored on the specified server. Then perform a performance analysis in the form of delay and throughput on the Distributed Hash Table network. The delay obtained when uploading text is 2ms, images are 1ms and video is 0.2ms. In the download process, the text delay is 0.19ms, the image is 0.16ms and the video is 0.08ms. Througput obtained when uploading text is 991 bits/second, images are 8005 bits/second and video is 1135852 bits/second. In the download process, the text throughput is 2230 bits/second, images are 19831 bits/second and video is 2719202 bits/second.

**Keywords:** *Distributed Hash Table(DHT), File Sharing*