

ABSTRACT

Currently, data communication between lecturer and students in ITTELKOM still limited by a portable hardware and the use of paper as a medium of communication for the task as well as lecture material. This makes the data communication on both sides to be difficult, because both the use of portable hardware and paper as a medium of communication has a high risk for lost or damaged. Therefore, in this thesis the author has designed and implemented a data storage system to be applied in a campus environment with the aim of facilitating ITTELKOM and facilitate data communication between faculty and students through an internal computer network ITTELKOM, by first analyzing the needs of the campus network and campus ITTELKOM.

Network Attached Storage (NAS) is one technology that provides storage access arrangement in file level, consisting of servers and storage. With its high flexibility has, NAS does not need to use a new topology beyond the existing topology. NAS can be implemented in a network that already exist. Thus, the NAS to be the right choice to be realized environment of the campus to help provide the ease of accessing data with a relatively low cost because it can take advantage of tools already available (no need to provide additional devices other than computers and hard drives).

Implementation is done in this final project include NAS server configuration, server Back-up NAS, and a client that consists of server and users accessing the server directly NAS server. In the implementation of this NAS server functionality and performance testing on FTP, SAMBA, and back-up server. Functionality of the test results, it was found that the functions of the NAS server 100% goes according to plan while the authors of trials found that performance on the NAS server, the ability to work close to 100% of network devices, hard drives tend to be low bandwidth utilization between 16% - 60%, the CPU utilization 16% - 75%, RAM usage depending on the mechanism of the operating system used, and the time required by the backup server to replace the main server job when the main server fails ± 0.02 seconds. From the results of performance measurements on a NAS server above, it can be said that the NAS server has a good performance and decent to apply in ITTELKOM.

Keyword: *Network Attached Storage*, file level, NAS server, *back-up* server, FTP, SAMBA.