ABSTRACT

This is now an increasingly diverse digital storage methods, one of which is a cloud-based storage methods that provide access to the consumer to store the data in the internet. The storage capacity that can be adapted to the wishes of its users. However, this method has its drawbacks cloud with data security issues.

In this final assigment made an application Secure Cloud, a cloud service that has a high level of data security. Secure data security in the cloud using a combination of Twofish cryptographic algorithms and Diffie-Hellman key exchange.

The test results on the Secure Cloud using 20 types of data shows that the time required to encrypt and to decrypt 146 297 ms 105 643 ms data requires. The test results Avalanche Effect 49.9943% gain results from a scale of 0 to 100%. In testing the use of resources for the results obtained heap size is 248 548 MB encryption and decryption for head size 148 974 MB, and for 85 520 MB of used heap encryption and decryption for the heap used 71 723 MB. Testing time Diffie-Hellman is 12343.77 ms for key length of 3072 bits, testing the Big-O Notation known Twofish algorithms including the O (N), and the Diffie-Hellman key exchange, including O ((log N) 4).

Keywords : Cloud, Diffie-Hellman Key Exchange, Twofish Cryptography Algorithm, Secure Cloud, Avalanche Effect, Resources.