

Abstract

Internet service into one of the ways to get various kinds of information because it easier for users to perform various activities. Online file storage facility on the Internet ease the process of accessing data. The files stored online are not completely safe, storage security should be an absolute necessity.

One of the cryptographic algorithm is a block cipher Rijndael algorithm. Rijndael is the AES cryptographic algorithm that operates in bytes, not in bits and able to perform the encryption of the plain text of 16 bytes or 128 bits. These algorithms are called the internal lock key round in which pembangkitannya taken from the cipher key, making it very suitable to be applied in encrypting files stored online. One way to determine a security level of cryptographic algorithms can be done by calculating the value of avalanche effect of the files that have been encrypted. Because the Rijndael algorithm, operates on bytes, the avalanche effect suitable to determine the security level of a cryptographic algorithm.

Differences in the size of the uploaded file is proportional to the time needed to encrypt a file. Factors that affect the encryption time is file size, file type, maximum memory, maximum execution time. The lowest type of file encryption time is type text, while the highest are the type of zip. Factors influencing the results of the plaintext and ciphertext is the key. Avalanche effect resulting calculation is not the same due to the influence of key scheduling is done in the Rijndael algorithm.

Keywords: rijndael algorithm, avalanche effect, cryptography, encryption, decryption, file type.