AN ENHANCED SECURITY METHOD FOR DATA PROTECTION AND SHARING IN CLOUD FOR MULTIUSER ENVIRONMENT

Pasindu Budara Soysa

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Department of Computing

Informatics Institute of Technology, Sri Lanka
in collaboration with
University of Westminster, UK

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Abstract

Cloud computing is a service hosted and performed on the internet with the facilities providing sharing of computer resources on user demand. Cloud computing offers three main services known as Infrastructure as a service, Software as a service, and Platform as a service. With the development of cloud storage, many advantages came to light. To achieve those advantages availability, confidentiality, integrity, authentication, non-repudiation, and anonymity of the data is a huge concern. Users store their sensitive data in cloud storage. Since data is stored in various physical locations where the user is not aware of, usage of cloud storage and sharing is limited.

The proposed system includes Identity Based Encryption which is an advanced and still a brand-new encryption scheme offering security for the group data sharing in a public cloud and image steganography is used to add another layer for the security of the data sharing. With the ciphered text embedded in the Least Significant Bit of the image, the noise generated is much helping to protect data from data thievery. The average Peak Signal Noise Ratio of the images was above 60dB, and the time is taken for encryption encoding and decryption decoding was 178MS and 138MS, respectively. Through the test results and security analysis of the scheme is practical for protecting data in a multi-owner environment.

Keywords— Steganography, Cloud computing, Cryptography, Public key, Cloud security