EMERGING METHODS OF DATA INTEGRITY AUDITING IN THE CLOUD: A SYSTEMATIC REVIEW OF RECENT TRENDS

Jairo Aldair Ríos Reyes, Renzo Yanpier Vásquez Chiclayo, Alberto Carlos Mendoza de los Santos

ABSTRACT

Data integrity auditing methods in the cloud are essential to ensure the protection and confidentiality of stored data. In this regard, various auditing techniques have been developed that focus on detecting and preventing malicious or unauthorized data manipulations. The systematic review examined different approaches to data integrity auditing, including policy-based auditing, dynamic auditing, multi-copy auditing, and identity-based auditing, among others. It was identified that some of the most successful and promising methods are those that use advanced cryptographic techniques, such as policy-based attribute encryption and identity encryption. Additionally, it was found that most of the proposed methods use Merkle tree structures and hash tables to improve the efficiency and scalability of auditing processes. Overall, this systematic review provides an overview of emerging data integrity auditing methods in the cloud, which may be useful for information security researchers and professionals seeking to implement efficient and effective solutions for data protection.

Keywords: Data Integrity Auditing, Cloud Computing, Cryptographic Techniques, Auditing Techniques.

DOI: 10.23881/idupbo.023.1-8i