Abstract

Providing cloud services gets an increasing interest of both scientific and industrial applications today. Storage services are the fundamental component of the Cloud computing paradigm. Exploiting such storage services enables users to outsource their data into the cloud. Not only is the reduction of storage and maintenance costs achieved but gets rid of the required infrastructure burden as well. How to prevent data abuses it by the cloud remains a hot point of the research. As there is a lack of trust between the service providers and clients, a set of challenges of securing the outsourced data against being abused is popped up. In this article, an enhanced secure data scheme for Cloud environments, Enhanced Watermarking Technique for Rational Database with non repudiation (EWRDN), is proposed. It is based on a set of enhancements for the WRDN approach. It improves space complexity by 56% of original
WRDN system with the same time complexity. EWRDN Service works as a trusted third party between clients and service providers. It guarantees data integrity, privacy, and non repudiation with the ability to recover data to its origin. Moreover, it gives data owner more controlling capabilities for their data, by tracing users’ activities. Besides, it adds a user signature over data being processed. A proposed architecture for EWRDN service is illustrated to prove data integrity and save copyright with the ability to trace the data and recover it to its origin if unauthorized changes take place.

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**Index Terms**

Computer Science

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**Keywords**

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