

Secure Cloud-Based Media Sharing: Scalable Access Control and Privacy-Preserving Deduplication

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Abstract: *This research delves into the realm of secure deduplication schemes, strategically designed to enhance storage efficiency within cloud environments. An initial focus is placed on an advanced AES encryption scheme utilizing a message-derived key, resulting in a consistent mapping of identical plaintexts to ciphertexts. The proposed AES framework not only incorporates convergent encryption but also provides meticulous security definitions. While the landscape of cloud computing boasts numerous techniques for data security, existing methodologies fall short in addressing nuanced aspects related to ciphertext. In response to this gap, our study introduces a pioneering information management paradigm. This comprehensive framework encompasses data gathering, sharing, and restrictive distribution, with a particular emphasis on multi-owner privacy preservation within the cloud. Under this innovative framework, data owners gain the capability to securely disseminate private information to predefined groups of clients through the cloud infrastructure. The research presented herein serves as a significant contribution to the ongoing discourse on secure deduplication in cloud storage. By combining advanced encryption techniques with a forward-looking information sharing strategy, our approach seeks to elevate the effectiveness of data security protocols in cloud environments.*

Keywords: Secure deduplication schemes, Storage space, Cloud computing

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