

## **158. CSB: CRYPTOGRAPHIC SPLITTING AND BACKUP FOR DATA SECURITY AND RECOVERY IN CLOUD**

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With cloud data services, it is commonplace for data to be not only stored in the cloud, but also shared across multiple users. Unfortunately, the integrity of cloud data is subject to scepticism due to the existence of hardware/software failures and human errors. Several mechanisms have been designed to allow both data owners and public verifiers to efficiently audit cloud data integrity without retrieving the entire data from the cloud server. However, public auditing on the integrity of shared data with these existing mechanisms will inevitably reveal confidential information identity privacy—to public verifiers. In this paper, we propose a novel privacy-preserving mechanism that supports public auditing on shared data stored in the cloud. In particular, we exploit ring signatures to compute verification metadata needed to audit the correctness of shared data. With our mechanism, the identity of the signer on each block in shared data is kept private from public verifiers, who are able to efficiently verify shared data integrity without retrieving the entire file. In addition, our mechanism is able to perform multiple auditing tasks simultaneously instead of verifying them one by one. Our experimental results demonstrate the effectiveness and efficiency of our mechanism when auditing shared data integrity.

Keywords— Public auditing, privacy-preserving, shared data, cloud computing, CSB.

*Journal of Science and Innovative Engineering & Technology*