

Improving Security and Privacy Attribute Based Data Sharing in CC

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Abstract: *With the growing adoption of Cloud Computing (CC), ensuring data security and privacy has become a critical challenge, especially as sensitive information is increasingly stored and shared across distributed platforms. Attribute-Based Data Sharing (ABDS) offers fine-grained access control by granting data access based on user attributes rather than identity. However, existing solutions face limitations in scalability, dynamic access control, and resistance to privacy breaches. This paper proposes an enhanced ABDS framework that leverages multi-authority Attribute-Based Encryption (ABE) to eliminate single points of failure, integrates differential privacy to safeguard individual data, and utilizes blockchain for immutable audit trails. Additionally, the framework incorporates secure data-sharing protocols, homomorphic encryption for computations on encrypted data, and AI-based anomaly detection for proactive threat monitoring. By combining these advanced techniques, the proposed system significantly improves the security, privacy, and reliability of cloud-based data sharing.*

Keywords: Cloud Computing, Attribute-Based Data Sharing, Attribute-Based Encryption, Data Privacy, Homomorphic Encryption

