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Dual Access Control for Cloud-Based Data Storage and Sharing

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ABSTRACT

Cloud-based storage offers efficient and cost-effective data handling, but it raises significant security concerns. In this work, we propose a dual access control mechanism designed to secure data access and control download requests in cloud environments. Leveraging Ciphertext-Policy Attribute-Based Encryption (CP-ABE), our approach supports fine-grained access policies and mitigates Economic Denial of Sustainability (EDoS) attacks. Experimental results show that our model ensures security without introducing significant computational overhead.

Keywords Cloud Storage, Attribute-Based Encryption, Dual Access Control, CP-ABE, EDoS Attack, Secure Data Sharing

Introduction

The adoption of cloud storage has grown rapidly due to its scalability and flexibility. However, as data is moved to untrusted third-party infrastructures, privacy and access control become critical concerns...

Related Work

Bethencourt et al. (2007) introduced CP-ABE...

Problem Statement

CP-ABE schemes manage data confidentiality but are vulnerable to download-based resource exhaustion...

Proposed Methodology

Our approach implements two systems integrating: CP-ABE for encrypting data...

System Implementation

The system is developed using Java/J2EE with MySQL...

Experimental Results

Simulation tests show improved resilience to unauthorized downloads...

Conclusion

We introduced a secure and efficient dual access control system for cloud data sharing...

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