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**Mitigating the Threat due to Data Deduplication Attacks in Cloud Migration using User Layer Authentication with Light Weight Cryptography**

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**Abstract**

The widespread adoption of multi-cloud in enterprises is one of the root causes of cost-effectiveness. Cloud service providers reduce storage costs through advanced data de-duplication, which also provides vulnerabilities for attackers. Traditional approaches to authentication and data security for a single cloud need to be upgraded to be best suitable for cloud-to-cloud data migration security in order to mitigate the impact of dictionary and template attacks on authentication and data integrity, respectively. This paper proposes a scheme of user layer authentication along with lightweight cryptography. The proposed simulates its mathematical model to analyze the behavioral pattern of time-complexity of data security along with user auth protection. The performance pattern validates the model for scalability and reliability against both authentication and data integrity.

**Keywords:**

Cloud computing, Authentication, De-duplication, Data security, Cloud-to-Cloud data migration, Hashing, Cryptography

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