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**TOWARDS SECURE DATA DISTRIBUTION SYSTEMS IN**

**MOBILE CLOUD COMPUTING**

**Abstract:**

Though the electronic technologies have undergone fast developments in recent years, mobile devices such as smartphones are still comparatively weak in contrast to desktops in terms of computational capability, storage, etc., and are not able to meet the increasing demands from mobile users. By integrating mobile computing and cloud computing, mobile cloud computing (MCC) greatly extends the boundary of the mobile applications, but it also inherits many challenges in cloud computing, e.g., data privacy and data integrity. In this paper, we leverage several cryptographic primitives such as a new type-based proxy re-encryption to design a secure and efficient data distribution system in MCC, which provides data privacy, data integrity, data authentication, and flexible data distribution with access control. Compared to traditional cloud-based data storage systems, our system is a lightweight and easily deployable solution for mobile users in MCC since no trusted third parties are involved and each mobile user only has to keep short secret keys consisting of three group elements for all cryptographic operations. Finally, we present extensive performance analysis and empirical studies to demonstrate the security, scalability, and efficiency of our proposed system.