International Journal of Computer Science and Mobile Computing

A Monthly Journal of Computer Science and Information Technology

SURVEY ARTICLE

SURVEY ON USER REVOCATION AND FINE GRAINED ACCESS CONTROL OF PHR IN CLOUD USING HASBE

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Abstract-Cloud computing has emerged as one of the most influential paradigms in the IT industry in recent years. Since this new computing technology requires users to entrust their valuable data to cloud providers, there have been increasing security and privacy concerns on outsourced data. Several schemes employing Attribute-Based Encryption (ABE) have been proposed for access control of outsourced data in cloud computing, however, most of them suffer from inflexibility in implementing complex access control policies. The proposed scheme used is Hierarchical Attribute-Set-based encryption by extending cipher text-policy Attribute-Set-Based Encryption (ASBE) with a hierarchical structure of users. The proposed scheme not only achieves scalability due to its hierarchical structure, but also inherits flexibility and fine-grained access control in supporting compound attributes of ASBE. In addition, ASBE employs multiple value assignments for access expiration time to deal with user revocation more efficiently than existing schemes. We formally prove the security of HASBE based on security of the Cipher text-Policy Attribute-Based Encryption (CP-ABE) scheme and analyze its performance and computational complexity. We introduced the ASBE scheme for realizing scalable, flexible, and fine-grained access control in cloud computing. The ASBE scheme seamlessly incorporates a hierarchical structure of system users by applying a delegation algorithm to ASBE. ASBE not only supports compound attributes due to flexible attribute set combinations, but also achieves efficient user revocation because of multiple value assignments of attributes.

Keywords: HASBE; Cloud Computing; PHR; User Revocation

Full Text: http://www.ijcsmc.com/docs/papers/January2014/V3I1201486.pdf