Privacy-Preserving Media Sharing with ScalableAccess Control and Secure Deduplication inMobile Cloud Computing

ABSTRACT:

Benefiting from cloud computing and mobile devices, a huge number of media contents such as videos are shared inmobile networks. Although scalable video coding can be utilized to provide flexible adaptation, the cloud poses a erious threat tomedia privacy. In this paper, we propose a privacy-preserving multi-ensional media sharing scheme named SMACD in mobile cloudcomputing. Firstly, each media layer is encrypted with an access policy based on attribute-based encryption, which guarantees mediaconfidentiality as well as fine-grained access control. Then we present a multi-level access policy construction with secret sharingscheme. It ensures that the mobile consumers who obtain a media layer at a higher access level must satisfy the access trees of itschild layers at the lower access level, which is compatible with the characteristics of multi-dimensional media and also reduces thecomplexity of access policies. Moreover, we introduce decentralized key servers to achieve both intra-server and inter-serverdeduplication by associating different access policies into the same encrypted media. Finally, we conduct experimental evaluation onmobile device and cloud platform with real-world datasets. The results indicate that SMACD protects media privacy against cloudmedia center and unauthorized parties, while incurring less computational and storage cost.

SYSTEM REQUIREMENTS:

HARDWARE REQUIREMENTS:

- System : Pentium i3 Processor.
- Hard Disk : 500 GB.
- Monitor : 15’’ LED
- Input Devices : Keyboard, Mouse
- Ram : 4 GB

SOFTWARE REQUIREMENTS:

- Operating system : Windows 10.
- Coding Language : Java
- Web Framework : Flask

REFERENCE:

Q. Huang, Z. Zhang and Y. Yang, "Privacy-Preserving Media Sharing with Scalable Access Control and Secure Deduplication in Mobile Cloud Computing," in IEEE Transactions on Mobile Computing, vol. 20, no. 5, pp. 1951-1964, 1 May 2021, doi: 10.1109/TMC.2020.2970705.