

Title:

Cloud Data Security Auditing

Abstract:

Over the past decade, cloud data security has raised cloud users' concerns increasingly, including data leakage, data loss, malicious tampering and deletion, just to name a few. To secure user's data in the cloud, preventive means including data encryption algorithms and access control mechanisms are analyzed a lot, while detective means plays another indispensable role for post-mortem deterrence. In particular, auditing methods have recently demonstrated great improvements over more "traditional" investigation methods by offering data security status verification. At the same time, cloud data security auditing methods have evolved in two ways: more security connotations have been proposed to protect data for cloud user experience, and more algorithms beyond cryptography have been redesigned for cloud data security auditing. Therefore, it is natural to ask how the success of these auditing methods may be applied to advancing the state-of-the-art in cloud data security.

Scope and Topics:

This workshop is aimed at academic and industrial researchers interested in the application of data security auditing methods to cloud computing and storage scenarios. Some of the key research questions of interest will include the following:

- What are the strengths and shortcomings of current auditing methods for cloud data security?
- How is data security auditing methods convince cloud users?
- How many fancy cloud computing applications can support auditing, such as cloud storage?
- For what expense does a cloud user need to use actual auditing service?

Topics of interests include, but are not limited to:

- ✧ Secure cloud architecture
- ✧ Auditing Frameworks (NIST, COBIT-Cloud, CSA, SANS etc.)
- ✧ Cloud cryptography enabled auditing
- ✧ Cloud access control and key management
- ✧ Identification and privacy in cloud
- ✧ Integrity assurance for data outsourcing
- ✧ Integrity and verifiable cloud computation
- ✧ Software and data segregation security
- ✧ Trusted computing technology
- ✧ Joint security and privacy aware protocol design
- ✧ Failure detection and prediction

- ✧ Secure data management within and across data centres
- ✧ Availability, recovery and accountability
- ✧ Secure computation outsourcing
- ✧ Reliable logging enabled auditing
- ✧ Secure mobile cloud

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Yongfeng Huang is Professor in the Department of Electronic Engineering at Tsinghua University, Beijing. He is IEEE senior member. Along his career, he has published five books and over 150 research papers on computer network and multimedia communication. His research interests include Cloud Computing, P2P, multimedia network and data security.

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Shanyu Tang is Professor of Information Security at the University of West London and leads the Information Security Research Group. During his career he has contributed to 99 scientific publications—60 refereed journal papers including IEEE/ACM Transactions and IEEE/IET journal papers, 37 conference papers, and two books. His major research interests lie in covert communications, multimedia security, and digital steganography, most notably the use of Fractal Computing to these areas.

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