

TAFC: TIME AND ATTRIBUTE FACTORS  
COMBINED ACCESS CONTROL FOR TIME-  
SENSITIVE DATA IN PUBLIC CLOUD

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# Abstract

- The new paradigm of outsourcing data to the cloud is a double-edged sword.
- On the one hand, it frees data owners from the technical management, and is easier for data owners to share their data with intended users.
- On the other hand, it poses new challenges on privacy and security protection.
- To protect data confidentiality against the honest-but-curious cloud service provider, numerous works have been proposed to support fine grained data access control.
- However, till now, no schemes can support both fine-grained access control and time-sensitive data publishing.

# Abstract(Contd...)

- In this paper, by embedding timed-release encryption into CP-ABE (Cipher text-Policy Attribute-based Encryption), we propose a new time and attribute factors combined access control on time-sensitive data for public cloud storage (named TAFC).
- Based on the proposed scheme, we further propose an efficient approach to design access policies faced with diverse access requirements for time-sensitive data.
- Extensive security and performance analysis shows that our proposed scheme is highly efficient and satisfies the security requirements for time sensitive data storage in public cloud.

# Exiting System

- Existing ABE based schemes do not support the scenario where the access privilege of one file is required to be respectively released to different sets of users after different time points, but needs only one time of the cipher text upload.
- a tree-based structure cannot be described with existing mechanisms.

# Limitation of existing system

- No schemes can support both fine-grained access control and time-sensitive data publishing.
- Not explored ,simultaneously achieve both flexible timed release and fine granularity with lightweight overhead

# Proposed System

- we propose a new time and attribute factors combined access control on time-sensitive data for public cloud storage (named TAFC).
- Our scheme possesses two important capabilities:
  - 1) It inherits the property of fine granularity from CP-ABE;
  - 2) By introducing the trapdoor mechanism, it further retains the feature of timed release from TRE.

# Advantage of Proposed System

- highly efficient and satisfies the security requirements for time sensitive data storage in public cloud.
- a rigorous security proof is given to validate that the proposed scheme is secure and effective.

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# Conclusion

- This paper aims at fine-grained access control for time sensitive data in cloud storage.
- One challenge is to simultaneously achieve both flexible timed release and fine granularity with lightweight overhead, which was not explored in existing works.
- Our scheme seamlessly incorporates the concept of timed-release encryption to the architecture of cipher text policy attribute-based encryption.

# Conclusion(Contd...)

- With a suit of proposed mechanisms, this scheme provides data owners with the capability to flexibly release the access privilege to different users at different time, according to a well-defined access policy over attributes and release time..
- We further studied access policy design for all potential access requirements of time sensitive, through suitable placement of time trapdoors.
- The analysis shows that our scheme can preserve the confidentiality of time-sensitive data, with a lightweight overhead on both *CA* and data owners.