

**PRIVACY PROTECTION BASED
ACCESS CONTROL SCHEME IN
CLOUD-BASED SERVICES**

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ABSTRACT

- With the rapid development of the computer technology, cloud-based services have become a hot topic.
- Cloudbased services not only provide users with convenience, but also bring many security issues. Therefore, the study of access control scheme to protect users' privacy in cloud environment is of great significance.
- In this paper, we present an access control system with privilege separation based on privacy protection (PS-ACS).
- In the PS-ACS scheme, we divide the users into personal domain (PSD) and public domain (PUD) logically.
- In the PSD, we set read and write access permissions for users respectively. The Key-Aggregate Encryption (KAE) is exploited to implement the read access permission which improves the access efficiency.



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- A high degree of patient privacy is guaranteed simultaneously by exploiting an Improved Attribute-based Signature (IABS) which can determine the users' write access. For the users of PUD, a hierarchical attribute-based encryption (HABE) is applied to avoid the issues of single point of failure and complicated key distribution.
- Function and performance testing result shows that the PS-ACS scheme can achieve privacy protection in cloudbased services.

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EXISTING SYSTEM

- The traditional access control strategy [1] cannot effectively solve the security problems that exist in data sharing.
- Data security issues brought by data sharing have seriously hindered the development of cloud computing, various solutions to achieve encryption and decryption of data sharing have been proposed.
- In 2007, first proposed the ciphertext policy attribute-based encryption (cp-abe).
- However, this scheme does not consider the revocation of access permissions.
- Put forward a fine-grained revocation scheme but it can easily cause key escrow issue



DISADVANTAGES

- This scheme does not consider the revocation of access permissions.
- Access policy is not flexible
- Not efficient from the complexity and efficiency

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PROPOSED SYSTEM

- Propose a novel access control system called PSACS, which is privilege separation based on privacy protection.
- The system uses key-aggregate encryption (kae) scheme and hierarchy attribute-based encryption (habe) scheme to implement read access control scheme in the psd and pud respectively.
- The kae scheme greatly improves access efficiency and the habe scheme largely reduces the task of a single authority and protects the privacy of user data.



ADVANTAGES

- Flexible
- Efficient access control
- Security and complexity

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HARDWARE REQUIREMENTS

- System : Pentium IV 2.4 GHz.
- Hard Disk : 40 GB.
- Floppy Drive : 1.44 Mb.
- Monitor : 14" Colour Monitor.
- Mouse : Optical Mouse.
- Ram : 512 Mb.

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SOFTWARE REQUIREMENTS

- Operating system : Windows 7 Ultimate.
- Coding Language : ASP.Net with C#
- Front-End : Visual Studio 2010 Professional.
- Data Base : SQL Server 2008.

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CONCLUSIONS

- we propose access control system (PS-ACS), which is privilege separation based on privacy protection. Through the analysis of cloud environment and the characteristics of the user, we divide the users into personal domain (PSD) and public domain(PUD) logically.
- In the PSD, the KAE algorithm is applied to implement users read access permissions and greatly improved efficiency.
- The IABS scheme is employed to achieve the write permissions and the separation of read and write permissions to protect the privacy of the user's identity.

