以網路服務建置分散性式檔案系統(A Distributed File System Built by Web Services)

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摘要

Networks have become an essential part of our daily life. Cloud computing is not only a catchword but also a reality. Different sorts of services are available through various clouds. Meanwhile, people are using different types of computing devices from personal computers to handheld devices to connect to networks. Each device can carry a variety of data such as documents, music, images, and pictures. To each user these data are very important. How to facilitate data transfer, maintain data consistency, and reduce data loss among these devices is a crucial issue. Currently, there are some network file systems but the problems such as high complexity, low flexibility, low data integrity, management difficulties, low security, and high susceptibility to network performance remain. Hence, data sharing technology keeps evolving through time.

Nowadays, Web services have become a major server-side technology, especially for cloud computing. Through Web services system functions are easy to be modularized, flexible, and interoperable across different platforms. In this thesis, we present a distributed file system based on Web services. The data security is assured by data encryption and distribution and data is kept consistent by synchronization mechanism built in the system. The system is validated through simulations and real usages of the system. The results show the proposed system is feasible and has its advantages.

關鍵字：REST, Web Services, Distributed File System, File Synchronization