

High-performance data replication across cloud servers

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A system for high-performance, scalable, multidirectional asynchronous and timely file replication of data across cloud servers has been developed by computer scientists in China. The approach, described in the *International Journal of Internet Protocol Technology* overcomes one of the major problems facing widespread adoption of cloud services – how to keep data in sync.

Anirban Kundu, Lin Luan and Ruopeng Liu of Kuang-Chi Institute of Advanced Technology Shenzhen, Guangdong, China, explain how earlier attempts to solve the cloud synchronization problem have several shortcomings including a lack of scalability and slow performance. These issues mean that users accessing many different [servers](#) across the globe but working with the same data set will stumble when they access the same files and discover that they have different versions. Moreover, as the number of users grow so too do the demands on the system and if it lacks the performance to keep all users up to date wherever they are on the system, then data conflicts will also arise.

Existing [cloud system](#) networks use high-end cluster machines, the team reports. However, their approach improves efficiency to such a degree that only low-category cloud servers are needed for implementation. They introduce a cloud server-side environment that has a network structure with distinct levels for controlling data transfer in different segments based on the user/system requirements and ferrying information packets through dedicated channels being used in parallel as required. Using their approach the team demonstrated that parallel

execution in a cloud environment takes less time to finish a particular task by dividing it into several asynchronous activities on different machines using a distributor/scheduler and then bringing these individual parts back together in the appropriate order for the end user or output.

More information: "Synchronisation of data transfer in cloud" in Int. J. Internet Protocol Technology, 2014, 8, 1-24.

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