Dew helps ground cloud computing

September 15 2015

The most obvious disadvantage of putting your data in the cloud is losing access when you have no internet connection. According to research publishes in the *International Journal of Cloud Computing*, this is where "dew" could help. Yingwei Wang of the Department of Computer Science, at the University of Prince Edward Island, Charlottetown, Canada, describes what he refers to as a "cloud-dew" architecture that offers an efficient and elegant way to counteract cloud downtime and communication difficulties.

In the world of cloud computing, users and organizations keep their data in the cloud, users access the data from their computer, which means their data is mobile and can be accessed from any computer...but only as long as an internet connection is available. The problem with this arrangement is that the user relies heavily on an internet connection and the cloud servers, Wang explains. "If any problem happens with the servers or an internet connection is not available, the user cannot access their data," he says.

When a user has lots of complex data, the task of keeping it in sync manually between the cloud and local computers is anything but trivial. Wang's architecture follows the conventions of cloud architecture but in addition to the cloud servers, there are dew servers held on the local system that act as a buffer between the local user and the cloud servers and avoid the problem of data becoming out of sync, which happens if one simply reverts to the old-school approach in which data is held only on the local server whether or not it is networked. "The dew server and its related databases have two functions: first, it provides the client with

the same services as the cloud server provides; second, it synchronizes dew server databases with cloud server databases," explains Wang.

The dew server is a lightweight local server that retains a copy only of the given user's data making it available with or without an internet connecting and syncing once more with the cloud server as soon as a connection is available once more. The same cloud-dew architecture might also be used to make websites available offline. Such a system could reduce the internet data overheads for an organization that has intermittent or throttled internet connectivity. Obviously form filling or email exchange is not possible without the internet connection but many functions such as displaying files and images, playing audio or video would be possible provided the data had been synced to the "dewsite" from the web during the last connection period.

More information: Wang, Y. (2015) 'Cloud-dew architecture', *Int. J. Cloud Computing*, Vol. 4, No. 3, pp.199-210.

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