

Transaction Support in the Windows NTFS File System

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The upcoming Windows Vista release will introduce the concept of Transactions for the NTFS file-system, and Windows registry. A recent release of this information on MSDN produced some interesting discussion on www.osnews.com (http://osnews.com/comment.php?news_id=12870).

This transaction infrastructure is very broad and deeply implemented within the file-system. It includes support within the Windows kernel for a full-function transaction manager and a high performance log manager. It allows an application to include arbitrary file-system operations on one or multiple machines on a network within a single transaction. The transaction can also include other arbitrary resource managers such as databases, transactional message queues and the Windows registry. Some of these resources can be within the Windows kernel as well. The file-system I/O model has been extended in general to allow 3rd party drivers to interop with, exploit, and provide alternate implementations of the transaction support.

We expect this to significantly impact the way people think about file-systems. It will allow them to write reliable distributed applications much more easily. For example, moving a file over the network by a simple transactional copy followed by a database update in the same transaction provides a very simple and reliable store and forward mechanism. It also simplifies information management in general by providing a more robust mechanism to spread data between databases and file-systems. A simple in-place reliable file-update is now possible, when in the past programmers had to do double renames to update files, with “reliability holes”.

In this talk I can go over the details of this and answer any questions.

My Bio: I’ve been at Microsoft for 8 years, all of it in the file-systems group. I architected the transaction support and coded the key parts over the years. At this time I’m the Development Manager for the file-systems group. Prior to Microsoft I worked at IBM in Toronto and Almaden for 4 years, as well as in a bay area startup called 64K.