New Capabilities and Features of the NTFS 3.1File System

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System Tip

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This article was previously published under Q310749

SUMMARY

Windows XP contains new features that are available only with the NTFS file system. This article outlines the features and advantages of converting to the NTFS file system with Windows XP.

MORE INFORMATION

The new features in Windows XP require on-disk data structures that make these volumes unavailable to Microsoft Windows NT 4.0-based computers. In anticipation of dual-boot scenarios, Microsoft recommends that you upgrade Windows NT 4.0 to Service Pack 4 (SP4) before you start the Windows XP installation. The version of NTFS included with Windows XP cannot be interpreted correctly by Windows NT 4.0. However, there is an updated Ntfs.sys driver in Windows NT 4.0 SP4 that enables Windows NT 4.0 to read from and write to NTFS volumes in Windows XP. Features of the NTFS 3.1 file system include:

- **Disk quotas**: Administrators can limit the amount of disk space users can consume on a per-volume basis. The three quota levels are: Off, Tracking, and Enforced.
- **Encryption**: The NTFS 3.1 file system can automatically encrypt and decrypt file data as it is read and written to the disk.
- **Reparse points**: Programs can trap open operations against objects in the file system and run their own code before returning file data. This feature can be used to extend file system features such as mount points, which you can use to redirect data that is read and written from a folder to another volume or physical disk.
- **Sparse files**: This feature permits programs to create very large files, but to consume disk space only as needed.
- **USN journal**: This feature provides a persistent log of all changes made to files on the volume. This feature is one of the reasons that Windows domain controllers must use an NTFS 3.1 partition as the system volume.

NOTE:Microsoft Windows 2000 uses NTFS 3.0. NTFS 3.0 and 3.1 have compatible on-disk formats, so volumes upgraded to NTFS 3.1 by Windows XP can continue to be accessed by Windows 2000 or by Windows NT 4.0 with SP4 or later.

Properties

Article ID: 310749 - Last Review: December 1, 2007 - Revision: 2.4

APPLIES TO
- Microsoft Windows XP Home Edition
- Microsoft Windows XP Professional
- Microsoft Windows XP Professional x64 Edition

Keywords: kbinfo KB310749