Best practices for NTFS compression in Windows

Support for Windows XP has ended

Microsoft ended support for Windows XP on April 8, 2014. This change has affected your software updates and security options.
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SUMMARY

This article describes file and folder compression performance in Windows when the NTFS File System is being used.

MORE INFORMATION

While NTFS file system compression can save disk space, compressing data can adversely affect performance. NTFS compression has the following performance characteristics. When you copy or move a compressed NTFS file to a different folder, NTFS decompresses the file, copies or moves the file to the new location, and then recompresses the file. This behavior occurs even when the file is copied or moved between folders on the same computer. Compressed files are also expanded before copying over the network, so NTFS compression does not save network bandwidth.

Because NTFS compression is processor-intensive, the performance cost is more noticeable on servers, which are frequently processor-bound. Heavily loaded servers with a lot of write traffic are poor candidates for data compression. However, you may not experience significant performance degradation with read-only, read-mostly, or lightly loaded servers.

If you run a program that uses transaction logging and that constantly writes to a database or log, configure the program to store its files on a volume that is not compressed. If a program modifies data through mapped sections in a compressed file, the program can produce "dirty" pages faster than the mapped writer can write them. Programs such as Microsoft Message Queuing (also known as MSMQ) do not work with NTFS compression because of this issue.

Because user home folders and roaming profiles use lots of read and write operations, Microsoft recommends that you put user home folders and roaming profiles on a volume that does not have NTFS compression on the parent folder or on the volume root. Individual users may still enable compression on their folders, but the overall number of compressed files and folders is smaller. On servers that host compressed volumes, you should use careful performance monitoring to determine whether the CPU has enough capacity to support the compress/decompress operations that are being performed.

For additional information, see the "File and Folder Compression" and "Compression Performance" sections in the Microsoft Windows 2000 Resource Kit.

Properties

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APPLIES TO

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- Windows 7 Home Premium
- Windows 7 Professional
- Windows 7 Starter
- Windows 7 Ultimate
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- Windows Server 2008 for Itanium-Based Systems
- Windows Server 2008 Standard without Hyper-V
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- Windows Web Server 2008
- Windows Vista Business
- Windows Vista Enterprise
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- Windows Vista Ultimate
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- Microsoft Windows 2000 Advanced Server
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