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Nov 27, 2002

a newsletter from TechTarget

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# Windows 2000 in the Enterprise: Technology strategies in action

# Disk defragmentation: Fundamentals and beyond, part 1

by Frank Alperstaedt

Everyone knows that regularly scheduled hard drive defragmentations are a *good* thing -- like puppy dogs and kittens. For the most part, however, the majority of the understanding ends right then and there. SearchWindowsManageability.com's resident defrag tool expert, <u>Frank Alperstaedt</u>, finds himself answering the same basic questions over and over again. In an attempt to help our users grasp some of the more fundamental concepts of defragmentation, this article features a package of recently and frequently asked user questions. -- David Pye

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IT pro: What is defragmenting? Why should I do it? How do I do it?

**Alperstaedt**: Defragmentation is a process that rearranges and reassembles your files on your hard disk. Think of your hard disk as a shoebox where you store lots of notes (the files). Windows XP/2000/NT simply takes your note (file), tears it into pieces and throws it into the box. When you load that file again, XP/2000/NT must first search for each piece and paste them together before the file is finally loaded. That process is time-consuming and reduces your performance.

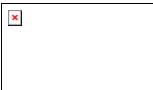
You can only solve this problem by using a disk defragmenter.

The purpose of defragmentation is higher performance when accessing files. Due to the files' continuous storage, the operating system can find and read each file fragment faster than before. Especially on file servers or heavily accessed workstations, a performance gain of up to 100% can be reached. The regular usage of a defragger suppresses new fragmentation and helps you to work faster and more efficiently with Windows XP/2000/NT.

**IT pro**: No matter what I do, I cannot defrag. Every time I try, ScanDisk keeps restarting. Can you help?

**Alperstaedt**: Sounds like a hard disk problem. Maybe some clusters are defective -- which is very likely, if ScanDisk keeps restarting. If you have a second hard disk, try to defrag it. If this works, your defragger is okay. Otherwise, there should be an error message to point you to the source of the problem.

IT pro: Can I use the Windows 2000 defragmentation tool on a server hosting



large amounts (250+ gigabytes) of Microsoft SQL Server 2000 databases? If I can't, what should I use?

**Alperstaedt**: You can, but I would not recommend it. Since the Windows 2000 defragger is a basic manual defragger, it does not offer the best performance possible to accomplish such a task. You should choose a third-party product that can do a much more lean and mean job. Also, please do not forget to shut down the SQL Server before running the defragger. Also, do a backup beforehand, just to be sure.

**IT pro**: How can I defragment disks in clusters that are much larger than 4K bytes? Is it impossible? Would I have to resize clusters to 4K bytes and then defrag? If so, how do I resize clusters on NTFS? Partition Magic doesn't work for this. What does?

**Alperstaedt**: If you are running Windows XP, the cluster size is not a limit any more. But under Windows 2000/NT 4, you are bound to the 4K-byte cluster size limit in order to run a defrag job. As far as I know, Partition Magic 8.0 is able to change the cluster size. Also, previous versions of Partition Magic should work.

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