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Features of the Windows Vista hard disk defragmentation utility

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INTRODUCTION

This article describes the features of the hard disk defragmentation utility in Windows Vista.

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More Information

In Windows Vista, there are many improvements in the defrag engine and in the manageability of fragmentation. By default, Windows Vista uses Task Scheduler to automatically keep the hard disk defragmented. This automated defragmentation does not affect the performance of the Windows Vista operating system. The performance is not affected because hard disk defragmentation only occurs when the computer is idle. The task that runs the defrag engine runs as a low-priority task. Therefore, defragmentation does not affect the performance of other tasks that the user performs on the computer.

Features of the Windows Vista hard disk defragmentation utility

Partial defragmentation

Partial defragmentation By default, the defrag tool only defragments file fragments that are smaller than 64 megabytes (MB). Therefore, any file fragments that are larger than 64 MB are not moved unnecessarily. You can use the `-w` parameter to tell the defrag tool to defragment all files fragments, regardless of size.

Cancellable defragmentation

In earlier versions of Windows operating systems, if the defrag engine was in the middle of a large move request, it could take lots of time to cancel defragmentation. In Windows Vista, the defrag engine processes input and output requests in smaller portions. Therefore, you can avoid situations where the defrag engine is busy with processing large move requests when you cancel a defragmentation session.

Low priority defragmentation

The defrag engine in Windows Vista does not affect the performance of other processes that are running on the computer. Other processes are not affected because defragmentation runs as a low priority process. And, defragmentation uses only minimal CPU resources and memory resources. If the system is using lots of CPU resources and memory resources, the defragmentation process may take a longer time to finish.

Ability to defragment volumes with less free space

You can defragment volumes in Windows Vista when volumes have less free space than is the case in earlier versions of Windows operating systems.

Faster defragmentation

In some defragmentation modes in Windows Vista, defragmentation of a volume is two or three times faster than defragmentation in earlier versions of Windows. Windows Vista uses significantly improved algorithms that move files toward the front of the hard disk. In earlier versions of the defrag engine, the defrag engine defragmented data at the end of the hard disk before the defrag engine defragmented the data toward the beginning of the hard disk.

Scheduled defragmentation

You can now use Task Scheduler to schedule defragmentation. Therefore, you do not have to manually start defragmentation. By default, a task is created and is set to run at 1 A.M. on every Wednesday. If the computer is turned off or if the task does not run at the scheduled time, the task will run the next time that the computer is idle.

Shadow-copy-aware defragmentation

In shadow-copy-aware defragmentation, defragmentation uses Volume Shadow Copy Service (VSS) in-box software to optimize defragmentation. The VSS software minimizes copy-on-write change blocks. Shadow-copy-aware optimization slows down filling the difference area. This kind of optimization also slows down the reclaiming of old snapshots during defragmentation.

Master File Table (MFT) defragmentation

If the MFT is spread into multiple fragments, the defrag engine can combine the MFT fragments during defragmentation.

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