

Advanced Windows SIG

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Disk Management

Note: material for paragraphs 1, 2, and 3 based on *Microsoft Windows XP Inside/Out Chapter 26*

If you have mastered hard-disk setup utilities from Windows 98 and Me, prepare to unlearn everything you know. Windows XP offers new capabilities and a new set of tools.

1. Definitions

- **Disk or hard Disk** → physical disk drive installed on computer
 - First hard disk drive → Disk 0
 - Second hard disk drive → Disk 1
 - Third hard disk drive → Disk 2
- **Basic Disk** → Contains one or more *partitions*
 - A *partition* → A portion of a disk that functions as if it were a separate disk
 - A *primary partition* → used for starting Windows
 - can not be further subdivided
 - An *extended partition* → can be further divided into one or more *logical drives* each of which can be formatted separately and assigned a drive letter
- **Volume** → When a partition or logical drive is formatted for a particular file system (FAT, FAT32, or NTFS) and assigned a drive letter, it is called a *volume*

2. Windows XP Disk Management Utility

- Provides tools to manage disks, partitions, volumes and logical drives
- Go to Start → Right click My Computer → Manage → Disk Management
- Perform the following tasks:
 - Check size, file system, status
 - Create partitions, logical drives, and volumes
 - Assign drive letters to hard disk volumes, removable disk drives, and CD-ROM drives
 - Changes usually take effect immediately and without need to reboot

3. NTFS or FAT32 ??

- Clean install -- choose during Windows Setup
- Upgrade -- setup lets you choose to convert
- Add new partitions or new hard drives -- must choose
- Avoid FAT16
 - **Compatibility** Windows 95/98/Me cannot recognize NTFS volumes. If using dual boot, you will need FAT32
 - **Security** NTFS permits restricted access to files and folders
 - **Reliability** NTFS can recover from disk errors more readily. Uses journal files to keep track of disk activity
 - **Speed** Controversial FAT32 may be faster, but with very large hard drives, NTFS probably is faster (see NTFS formatting below)
 - **Compression** NTFS has file by file compression, extremely efficient

- **Convert later** If in doubt, start out with FAT32, then convert to NTFS later, but not visa verse
- **Efficiency** On partitions greater that 8 GB, NTFS more efficient. Max partition for FAT32 by XP is 32 GB. NTFS capable of up to 16,000 GB. If need large FAT32 partition, boot in DOS and use Fdisk utility

4. Misc. Windows XP tips courtesy of Avery Hughes

- **XP Crash reporting** How to turn off. Start → right click My Computer → Properties → Advanced → Error Reporting → Disable error reporting
- **Automatically download updates** Start → Control Panel → Performance and Maintenance → System → Automatic Updates → Download the updates automatically → Apply
- **XP Firewall** (Set to Off by default) Start → Control Panel → Network and Internet Connections → Network Connections → Right click connection to protect → Properties → Advanced → Protect my computer and network → OK

- **Fine-Tune ClearType** See article below

Fine-Tune ClearType

Take advantage of Microsoft's ClearType innovation within XP. Your eyes will thank you.

By Greg Melton
November 1, 2001

[Return to Regular View](#)



Would you like to improve your font display resolution and dramatically increase your PC's on-screen readability? Well, look to XP to take care of this for you. With a newly patented technology called ClearType, Microsoft hopes to extend your computing experience and eyesight for many years to come.

ClearType benefits

The added benefits of ClearType technology are subtle but effective. Basically, it makes text appear crisper by increasing its line weight without making it appear overtly bold. When it's turned on, you'll also notice a slight degree of smoothing as text characters seem to have a more rounded feel to them.

To see the full advantage of ClearType, you're going to want to operate XP with an LCD monitor. However, it still works quite well even if you have a CRT, but it requires a little fine-tuning.

Fine-tune ClearType

Enter Microsoft's <http://microsoft.com/typography/cleartype/cleartypeactivate.htm?fname=%20&fsize=> to tune your ClearType settings. All you need to do is click on the link, accept the little ActiveX control, and you're ready to adjust your ClearType settings online.

Once you run the Web application, the first step is to turn on ClearType. To do this, just put a checkmark in the box asking you if you'd like to turn ClearType on. If you keep turning it off and on, you'll see how the on-screen text is displayed differently. After you have it turned on, proceed to Step 2: Tune your ClearType settings.

When you get to the next step, walk away from your monitor for a minute or so, and then look at the six different options. You're going to want to single-click the text box that is easiest for you to read. After you've determined the correct text box, just click the Apply button to make the changes to your system.

Turn ClearType On/Off

You can also turn ClearType On/Off any time you want. To do this, follow these directions:

1. Right-click your desktop and select Properties.
2. Select the Appearance tab, and press the Effects button.
3. Check the box next to the words labeled "Use the following method to smooth edges of screen fonts," and select the option you want from the drop down box.
4. Close the Effects dialog by clicking OK, and click Apply to complete the process.

- NTFS Formatting vs. converting

What many people are unaware of is you can increase disk performance by doing a clean format in NTFS. Windows XP allows to convert a FAT32 partition to NTFS, but a converted disk will not perform as well as one that has been formatted in NTFS. Thus, if you have a choice between converting and formatting, you may want to save your data and format the partition in NTFS.

NTFS performance tuning. By disabling unneeded features and functions, you can improve the performance of NTFS. For backward compatibility, NTFS creates a corresponding "eight-dot-three" filename (MS-DOS type name) along with the long filename you give a file. If you are not sharing files with 16-bit operating system (MS-DOS, Win 3.x) or applications you don't need this feature. Disabling the automatic creation of short names will eliminate the overhead required to perform this task and enhance performance. Another NTFS feature that can be disabled for improved performance is the automatic update of the time/date stamp (last access update) when a directory is traversed. Both of these modifications require that you edit the Registry

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\FileSystem

To disable short filenames, change the value to NtfsDisable8dot3NameCreation to 1.

To disable last access updates, change the value of NtfsDisableLastAccessUpdate to 1

If the entry is not already present, you will have to create it.