

## NTFS vs. FAT: Which Is Right for You?

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The choice of which Windows file system to use will be clear through an overview of the three common systems supported mainly by Microsoft systems; FAT 16 (File Allocation Table), FAT 32 and NTFS (New Technology File System) .

FAT 16 was the system used with the Disk Operating System (DOS) back in 1981. Designed for floppy drives, modified to support longer file names but could not overcome a limitation that resulted from hard disks developed with larger sizes. FAT 16 supported a fixed number of clusters; a cluster is the smallest unit in which one file can reside . On larger hard disks, the cluster size becomes bigger resulting in wasting space by allocating small files in large clusters. Another problem with FAT 16 was that it did not support compression and advanced security.

FAT 32 solved the cluster size limitation; optimizing hard disk space usage. On the other hand, while FAT 16 was supported by other operating systems (OS) such as Linux/Unix, FAT 32 was not, and as a result, its usage was restricted to Windows 2K/XP/Me/985.

NTFS supports disk compression, file security and is completely different from the previous file systems. It is not supported by other operating systems, thus, it is advised to have a partition with FAT where some recovery tools reside, this enables booting the system and doing some fixes through a floppy. Windows XP supports an irreversible conversion from FAT to NTFS at any time. Going back to FAT will require a re-partition and would result in data loss . With dual boot systems it is recommended to have one partition set to FAT and another with NTFS. Non vital shared files must be placed on the FAT partition as to be accessible by all other systems.

#### My Conclusion

The advancements in disk file systems were compatible with the trends and hardware technologies adapted at each level of the storage devices development. FAT 16 was there when floppies were the main secondary storage devices. When hard disks came aboard, it tried to cope to a high level then a more advanced system was needed, so FAT 32 was developed. In the network era, where sharing files and distributed computing was important, NTFS was introduced ; providing what was required in terms of security, dual boot features and breaking the hard disk size barriers by supporting up to 2 TB of disk space with maximum cluster utilization.

References Charlie Russel, " NTFS vs. FAT: Which Is Right for You? ", Microsoft Windows XP, 1 oct 2001 , 21 Oct 2001 PC Guide, References 2006 <http://www.pcguides.com/ref/hdd/file/clustClusters-c.html> The Windows XP Professional Product Documentation 2006, [http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/choosing\\_between\\_ntfs\\_fat\\_and\\_fat\\_32.msp?mfr=true](http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/choosing_between_ntfs_fat_and_fat_32.msp?mfr=true) Mohammad Heidari, " NTFS Security Considerations ", Security White papers and Articles, 21 Jun 2005 , 21 Oct 2006 NTFS organization ,2006, [http://www.ntfs.com/ntfs\\_vs\\_fat.htm](http://www.ntfs.com/ntfs_vs_fat.htm)