

Why does USB drive, memory card ... use FAT32 format instead of NTFS?

FAT32 does not support file permissions. With NTFS, you can assign permissions to access, edit or delete files to increase system security.

Microsoft created **NTFS** to improve **FAT32** in many ways. To understand why **Windows** uses **NTFS**, we take a look at the limitations of **FAT32** , and how **NTFS** fixes these problems. Please refer to the following article of Network Administrator.

Explore more:

1. What is FAT32, NTFS, exFAT format?
2. Partitioning file manager choose NTFS or FAT32?
3. Some basic knowledge about FAT32 and NTFS

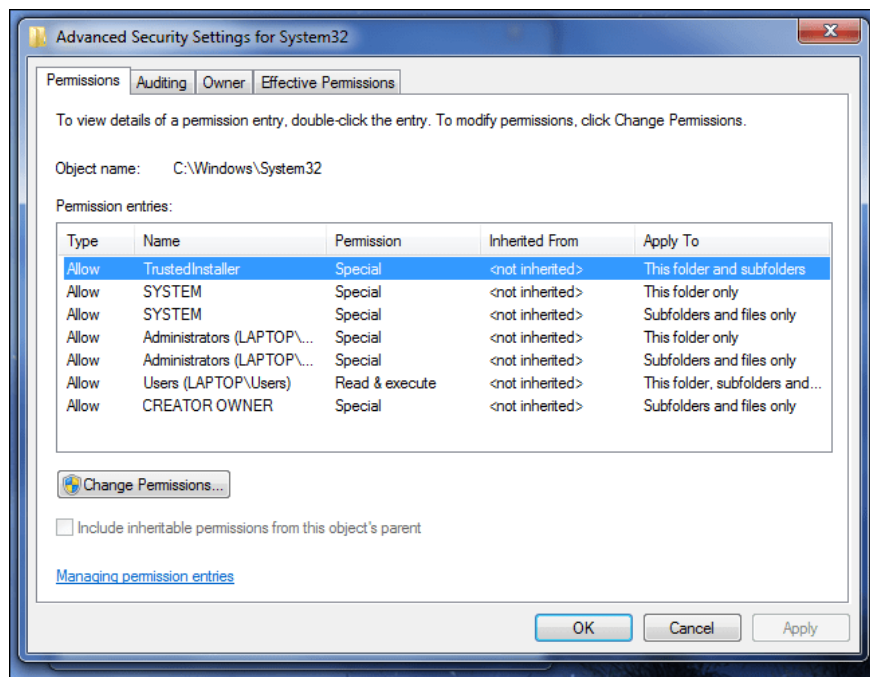
- **FAT32** only supports files up to 4GB in size and partitions up to 2TB in size. In case if your file is larger than 4GB, you cannot save this file to a **FAT32** format hard drive. If you have a 3TB hard drive, you can't format this hard drive to a **FAT32 partition** . Theoretically, **NTFS** has a higher limit.

- On **NTFS** , changes are saved to a note before being executed. Suppose in case if the computer has lost power when recording a certain file, the **NTFS** system will not need to scan the entire partition to find and recover errors such as **FAT32** , but only need to read the "notes" again. "to find and redo the currently performing tasks to bring the hard drive back to a stable state.

- **FAT32** does not support file permissions. With **NTFS** , you can assign permissions to access, edit or delete files to increase system security.

With **NTFS** , system files can be set to read-only mode, preventing normal applications from being accessed. Users may also be restricted from accessing other users' files on the same computer or network system.

There are many reasons for Windows to use **NTFS** for **system** hard drives: **NTFS** is safer, more powerful and supports larger file sizes.



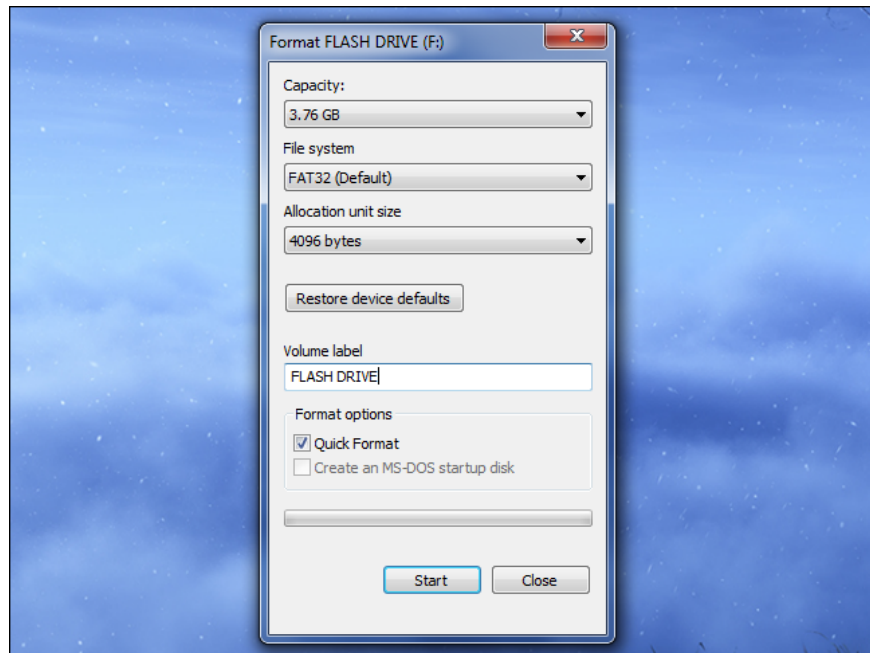
Memory cards and USB devices do not encounter problems such as hard drives

- USB or SD card definitely has a capacity of 2TB, so you don't need to worry about capacity limits. Sometimes you want to copy a file larger than 4GB into the drive - in this case you can use the drive format as **NTFS**.
- USB and memory card do not need to store changes like hard drive. Even recording changes will increase the read / write count on USB and memory cards, reducing their lifespan.
- USB and memory card are portable storage devices, so you can disassemble, used on many smart computers / devices. Therefore, file permissions will make using them more difficult.

In addition, decentralization on USB and memory cards also has some problems. For example, a USB file is decentralized specifically for user accounts on your laptop. When you remove this USB and plug in other laptops, any user with another similar account name will be able to access the file. Thus, decentralizing access on USB does not increase security, but only makes things more complicated.

In addition, **NTFS** will also take up more space to store more system files, so using **NTFS** will reduce the usefulness of low-capacity memory cards.

In short, you should only format USB and memory cards to SD format if you need to use them to copy files larger than 4GB. However, the read / write speed of the memory card and USB is usually slower than that of external hard drives, so perhaps you should consider investing in an external hard drive to copy large files.



Compatibility

One of the most important reasons you should not use **NTFS** on USB and memory cards is their compatibility with non- **Windows** devices.

Mac : **Mac OS X** supports reading files on a fairly complete **NTFS** hard drive, but in default **Mac settings** cannot write files to **NTFS partitions** . You need to use additional software or change some customizations.

Linux: Only **Linux** versions in the last few years can support read and write **NTFS** well. Older versions often fail in this process.

Camera, smartphone, TV, printer : Currently, there are many electronic devices that support reading files on USB ports and memory cards. All of these devices support **FAT32** format, which means you don't need to worry that "My TV can't read USB" if it uses **FAT32** format. Only a few devices support **NTFS** , and in order to ensure the best compatibility, you should still format the memory card and USB drive in **FAT32** format .



In general, you should keep the file system for your storage device in the same way as the manufacturer's settings. Keep your **3TB** hard **drive** in **NTFS** format and keep it in your memory card, USB in **FAT32** format.

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