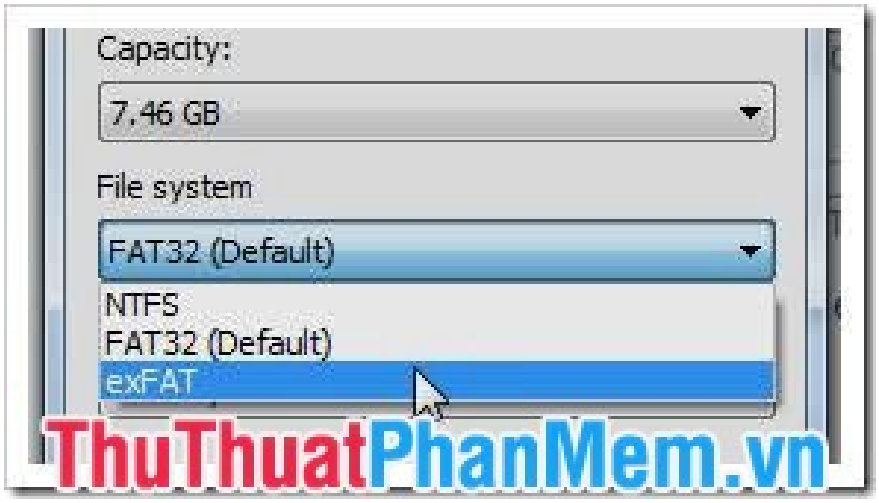
What are the exFAT, FAT32 and NTFS formats and how are they different?

The commonly used hard drive formats are NTFS, FAT32 or ExFAT, if you do not know the difference between these formats and should choose the format for your hard drive, please read the article below.

The commonly used hard drive formats are **NTFS, FAT32** or **ExFAT** , if you do not know the difference between these formats and should choose the format for your hard drive, please read the article below.

1. What are exFAT, FAT32 and NTFS formats?



exFAT, FAT32 and NTFS are all formatted for the hard drive, in case you need to reformat the hard disk **Window** always asks if you want to format in **FAT32** or **NTFS** format or in other words, choose the file system in which format **.** It is imperative to choose this type of format because it directly affects the process of storing and using data. And **ExFAT** is a new format that is gradually replacing **FAT32.**

1.1 FAT32 format

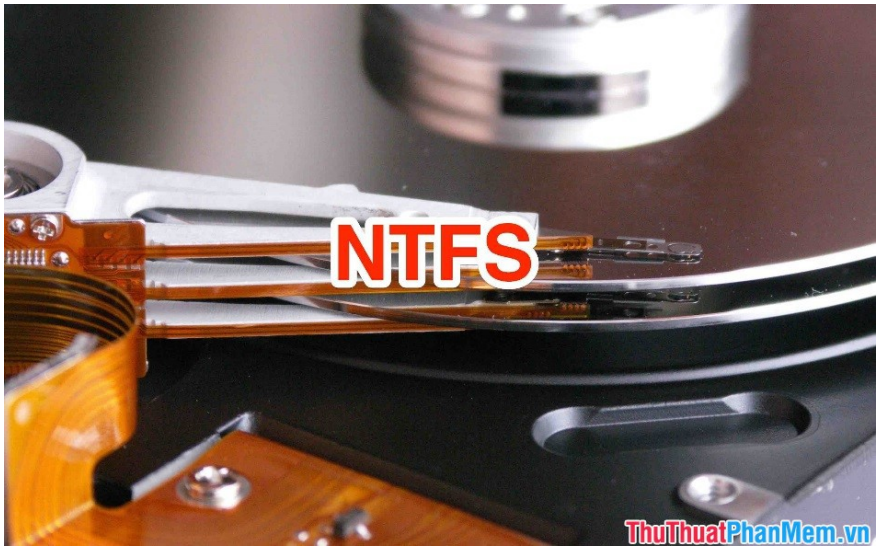
- **FAT32** appeared from the **Windows 95 Service Pack 2** is an extended version of **FAT16,** is a file system format that is highly compatible and still used quite popular. Currently the size of each partition on **FAT32** is increased to **2TB,** the maximum length of the file name is up to 255 characters **. FAT32** uses 32-bit address space, so it supports more **clusters** on one partition, thus saving hard disk space.

- **FAT32** does not decentralize management, encryption .

- **FAT32** has very poor resilience and error resistance, which will be extremely inconvenient in the event of a sector failure on the drive.

- In the event of a sudden power failure your computer will have to rescan the drive when booting if you use the **FAT32** format **.**

1.2 NTFS format



- **NTFS (New Technology File System)** appeared with the first **Windows NT** , the most commonly used file system format today. File size and capacity per partition of **NTFS** are very large. **Since NTFS** uses a 64-bit address space, the number of **clusters is** independent of the size of the hard disk. **NTFS** uses the **MTF (Master File Table) file** manager instead of **FAT** tables **. NTFS** is highly secure, fault tolerant, but it has the disadvantage of not supporting some versions such as **Linux,** gaming devices, or hard drives smaller than 400MB .

- **NTFS** can record the operation of the operating system, it can immediately identify the problem file without having to scan the entire drive. Therefore, fault tolerance of **NTFS is** higher than that of **FAT32.**

- **NTFS** works on a compressed file system in a simple way. This helps you save storage space and increase drive life.

- **NTFS is** very suitable when working with computer systems in the company. In addition, you can use this utility to control children 's web access.

- Especially with **NTFS** you can **mount partition,** create **hard links** that **FAT32** cannot do.

1.3 ExFAT format

- **exFAT,** first known in 2006, is the optimal file system format for flash memory and external storage devices. It is designed based on **FAT32** but overcomes the disadvantages of **FAT32** . **exFAT is** not limited in file size, is more compatible than **NTFS.**

2. Differences between exFAT, FAT32 and NTFS

- Same: All are formats that support the file system storage on the drive. However **FAT32** and **NTFS** support on hard drives, **exFAT** support on external storage devices, **flash** memory **.**

- Different:

Comparative characteristics

FAT32

NTFS

exFAT

Maximum size on 1 partition

2 TB

16 EB

128 PB

Maximum file size

4 GB

16 TB

16 EB

Feature

- Does not support security features such as management, encryption .

- The ability to recover and fix poor errors.

- High security, optimized data encryption.

- Ability to recover and correct errors. It is able to immediately identify corrupted files without scanning the entire system

- **NTFS** Access and processing on compressed files thus saving space and extending the life of the hard disk.

- **NTFS** has many other utilities such as **mount partition,** create **hard links** .

- Does not support security features such as management, encryption .

- Resilience and poor fault tolerance.

Compatibility

Win95 / 98/2000 / XP and external memory, flash device

Win NT / 2000 / XP / Vista / Win 7, 8, 10 and later versions

Win95 / 98/2000 / XP and external memory, flash device

In accordance with:

Portable storage device but the file size is less than 4GB

- Partitioning of system files and other partitions on the machine.

- Suitable external drive, USB flash with files larger than 4GB

- Currently the hard drive format according to **NTFS** is most commonly used because of its superior features.

Above introduces the **exFAT, FAT32** and **NTFS** formats in detail **,** hoping to help you make the right choice for your drive. Good luck!