

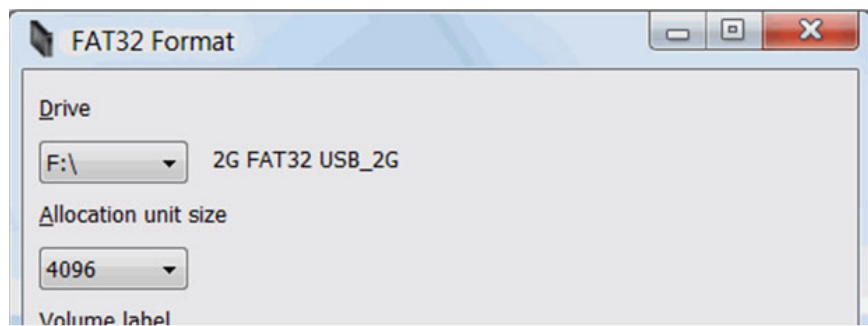
# Which USB format is reasonable?

How to know Mac, Xbox and Windows can read your files? The following article will provide the perfect solution for your USB drive.

**You often hear terms like FAT32 or NTFS so what are they and how are they different?**

## What is File System?

File System (also known as file system) has the function of organizing and controlling files. The file system helps streamline the data stored on the computer's hard disk, regularly controlling the physical location of every data component on the disk to allow users to quickly and securely access it. The file system depends on the operating system in use. The operating system will not be able to read data on drives using other file systems that the operating system does not support. Therefore, every time you reformat the drive, you will be asked to select the file system for that drive.



To choose the appropriate file system for removable drives, you should consider between two factors: usability and maximum capacity.

## 1. Mobility

The three most popular file systems today are NTFS (standard Windows), HFS + (standard OS X) and FAT32 (old Windows standards). Each operating system supports a different standard. For example, Windows 7 only supports NTFS and FAT32, cannot read data on drives that are formatted in HFS + format. In contrast, Mac OS only supports HFS +, does not support NTFS or FAT32.

Understanding this problem, Linux versions (specifically Ubuntu) can support both NTFS and HFS + so it is easier to move data from one system to another.

In addition, gaming consoles like Xbox360 and Playstation 3 also support a number of different file systems.

	Windows XP	Windows 7/Vista	Mac OS Leopard/Snow Leopard	Mac OS Lion/Snow Leopard	Ubuntu Linux	Playstation 3	Xbox 360
NTFS (Windows)	Yes	Yes	Read Only	Read Only	Yes	No	No
FAT32 (DOS, Windows)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
exFAT (Windows)	Yes	Yes	No	Yes	Yes, with ExFat packages	No	No
HFS+ (Mac OS)	No	No	Yes	Yes	Yes	No	Yes
EXT2, 3 (Linux)	No	No	No	No	Yes	No	Yes

Currently, FAT32 is very popular due to the support of many devices and many operating systems. However, the limitation of FAT32 is the limit on the size of each saved file, and the capacity of the entire drive.

## 2. File size

FAT32 was developed many years ago, based on the FAT file system for DOS. Due to its long history, FAT32 only supports up to 4GB file size. Currently, if you want to save an HD movie on a hard drive, using FAT32 is really a big challenge.

Therefore, the new file systems such as NTFS, exFAT can solve the problem of file size, as shown in the following figure.

	Individual File Size Limit	Single Volume Size Limit
NTFS	Greater than commercially available drives	Huge (16EB)
FAT32	Less than 4GB	Less than 8TB
exFAT	Greater than commercially available drives	Huge (64 ZB)
HFS+	Greater than commercially available drives	Huge (8 EB)
EXT2, 3	16GB	Large (32 TB)

However, exFAT does not currently have many supported devices and operating systems. And NTFS only works on Windows, Linux, and Snow Leopard.

**Conclusion:** Based on the two factors above, please select the file system for your USB drive. FAT32 is still the right choice if you do not need to save a lot of files larger than 4GB.

## Format the drive

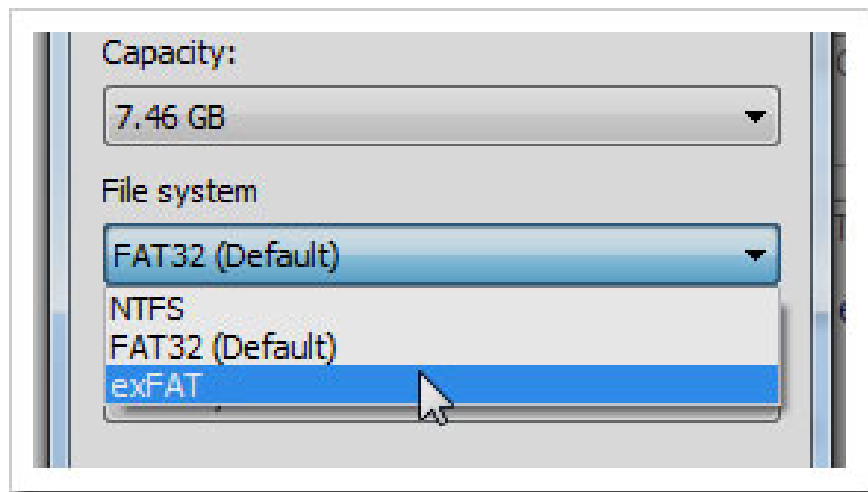
- **FAT32:** FAT32 is commonly used for drives with capacity less than 32GB. Depending on the software used, you can create FAT32 drives up to several TB. Some software to format drives in FAT32 format:

1. Fat32format or GUIformat (Windows): The FAT32 drive format tool in Windows is easy to use.
2. Disk Utility (Mac): FAT32 standard disk format tool, available on Mac OS.
3. GParted (Linux and LiveCD): Commonly used for Linux systems, and included in system rescue disks.

- **NTFS and exFAT:** There are two ways to format NTFS and exFAT drives.

**Method 1:** On Windows 7, go to Start menu to search for keyword ' **Computer Management** '. At the window that opens, select **Disk Management** , select the drive to format.

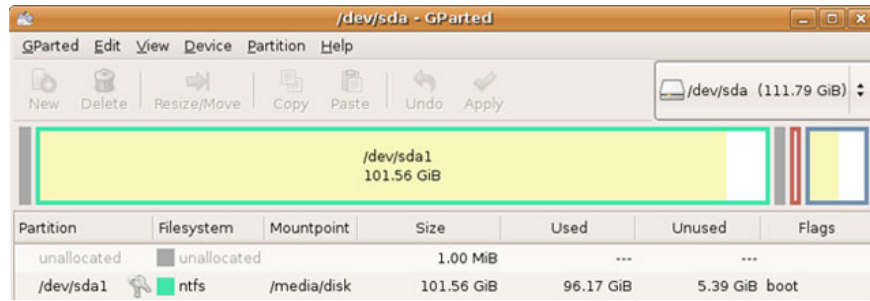
**Method 2:** Go to **My Computer** , right-click the drive, select **Format** .



- **HFS +:** The Disk Utility in Mac OS will help you format the HFS + drive.



- **EXT2 or EXT3:** Not only supports FAT32, GParted also helps format the drive in EXT2 or EXT3 standard for Linux system.



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