

Task 3

Lost Data Retrieval

Simulate a scenario where files are accidentally deleted from a storage device and use basic data recovery tools or techniques to attempt retrieval. Work with file systems like FAT32 or NTFS, explore tools such as Recuva or TestDisk, and document the recovery steps and results in a safe, test environment.

Following are guides on file recovery techniques, especially for your Task 3 scenario using FAT32/NTFS and tools like TestDisk, Recuva, EaseUS, and others:

Even though NTFS is a significant upgrade over Microsoft's older FAT32 system, it's still not immune to data loss. You've got a few ways to recover lost or deleted files. In this guide, we'll lay out each option step by step and show you how to recover data from an NTFS partition, whether it's on an internal drive or an external one.

Before you begin the recovery process, stop using the drive so you don't accidentally overwrite your lost data. We also highly recommend creating a backup to keep your data exactly as it is. That way, if anything goes wrong during recovery, you'll have a point to fall back on.

How to Recover Deleted Files From an NTFS Partition

Files can be lost from an NTFS partition for various reasons, such as accidental deletion, formatting errors, you name it. When that happens, Windows first removes the file from its location, then drops it from the file system, and eventually, the drive can overwrite its space. Because data loss can play out in different ways, we've put together several recovery methods to cover as many scenarios as possible. If the first try doesn't work, move on to the next one – we'll help you find a way to get your deleted data from the NTFS partition back.

Method #1: Check the Recycle Bin for Deleted Files

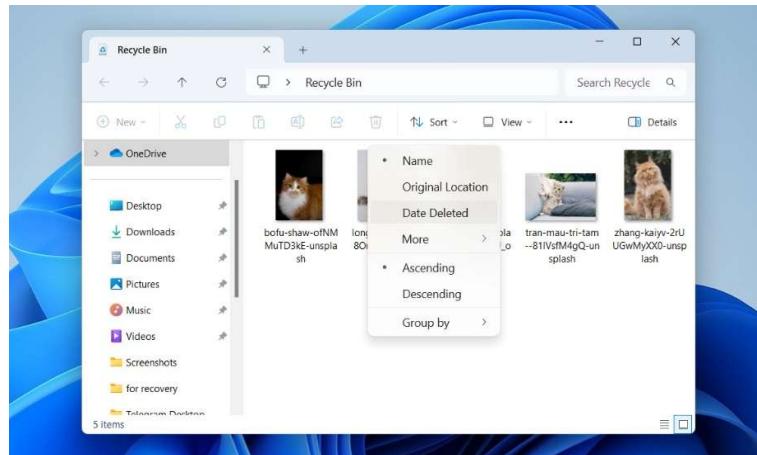
If you can't find your files on an NTFS partition, start by checking the Recycle Bin. Windows sends files deleted the usual way there first, and they stick around until you empty the bin or it hits its size limit. Think of the Recycle Bin as a safety net that helps you restore files when you need them.

Keep in mind, though, that using the **Shift + Delete** command **skips the Recycle Bin** entirely. The same thing happens with files you delete from an SD card or USB drive connected to your PC – they are deleted immediately without landing in the Recycle Bin.

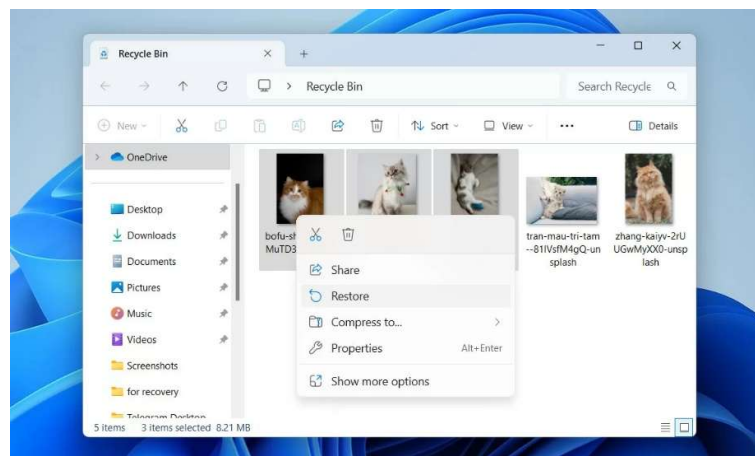
Double-click the Recycle Bin icon on your desktop



Browse the list of deleted files and folders. Sort by name, deletion date, or original location to find what you're looking for.



Then, right-click the file or folder, choose **Restore**, and it will return to its original location.



Go to the original location to confirm it has been restored correctly.

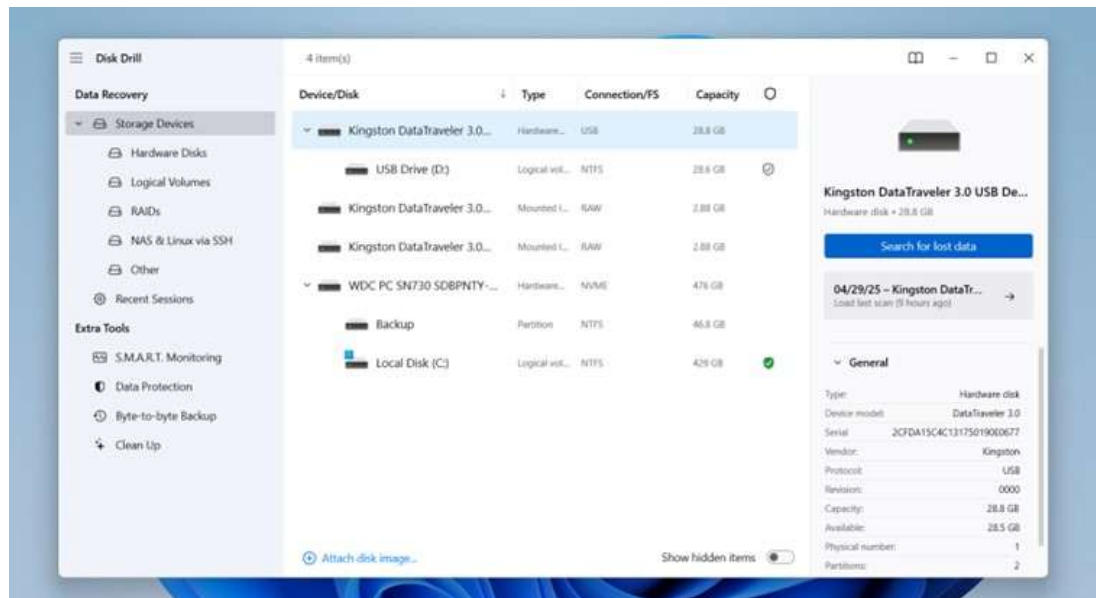
Method #2: Use NTFS Data Recovery Software

If you [don't see your files in the Recycle Bin](#), you'll need data recovery software to get them back. These tools scan the file system and piece together deleted files, provided their data hasn't been overwritten. That's why it's so important to stop using the drive and act fast when you're trying to recover data from an NTFS partition.

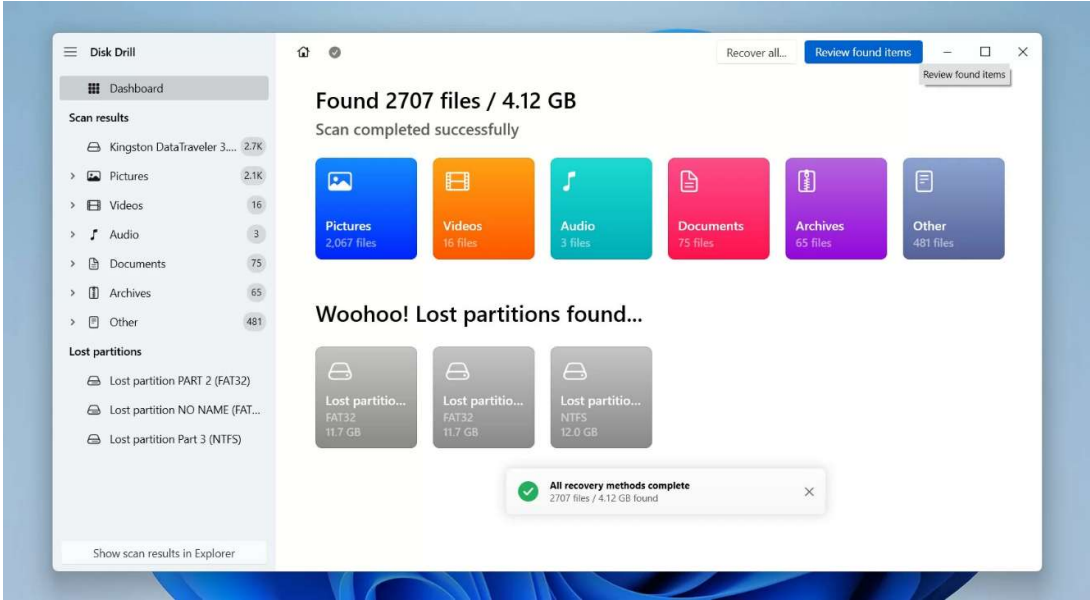
If you've never used data recovery software before, choosing one among the many options available on Google can be difficult. To make it easy, check out our list of the [best Windows recovery tools](#) or browse [our top open-source options](#). Short on time? Go straight for [Disk Drill](#). It's a trusted data recovery software that handles nearly any data-loss scenario. Even if your NTFS file system is corrupted, Disk Drill can recover files using signatures alone (no intact file system is needed), and it supports approximately 400 file types.

Here are the steps to follow to recover NTFS partitions using Disk Drill:

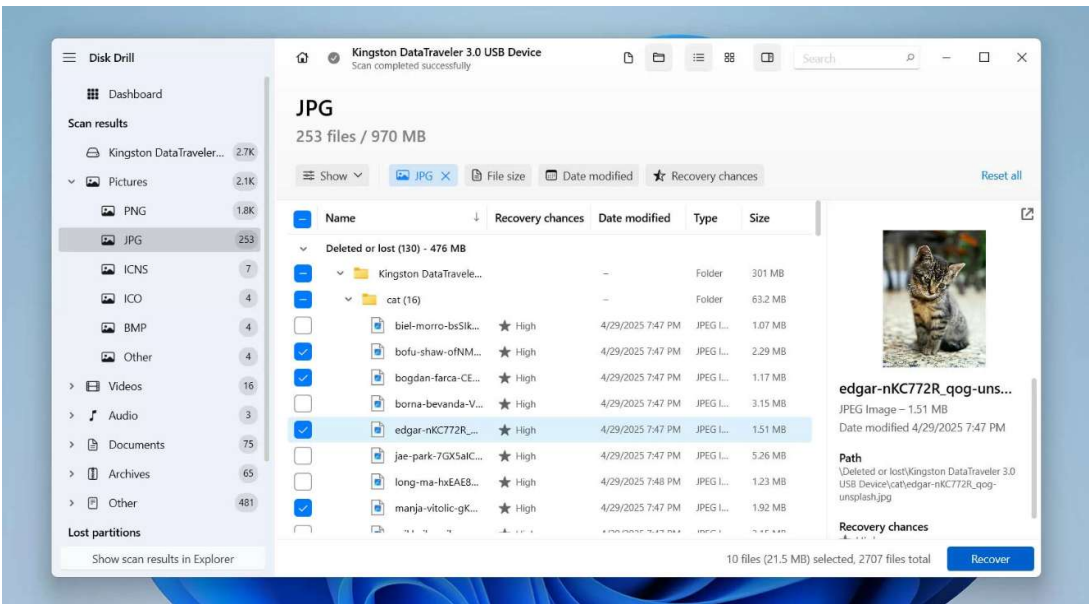
1. Go to the official CleverFiles website and [download Disk Drill](#). When installing it, follow the prompts, but confirm that you don't install it on the same drive where your lost NTFS data is located, as you might overwrite it.
2. Launch Disk Drill. It will show you a list of all available drives. If you're trying to recover data from an external drive, plug it in now, and it should show up. Select the entire disk (not just the NTFS partition) that contains the lost data. Scanning the whole drive usually gives better results. Then, click **Search for lost data** to start the scan.



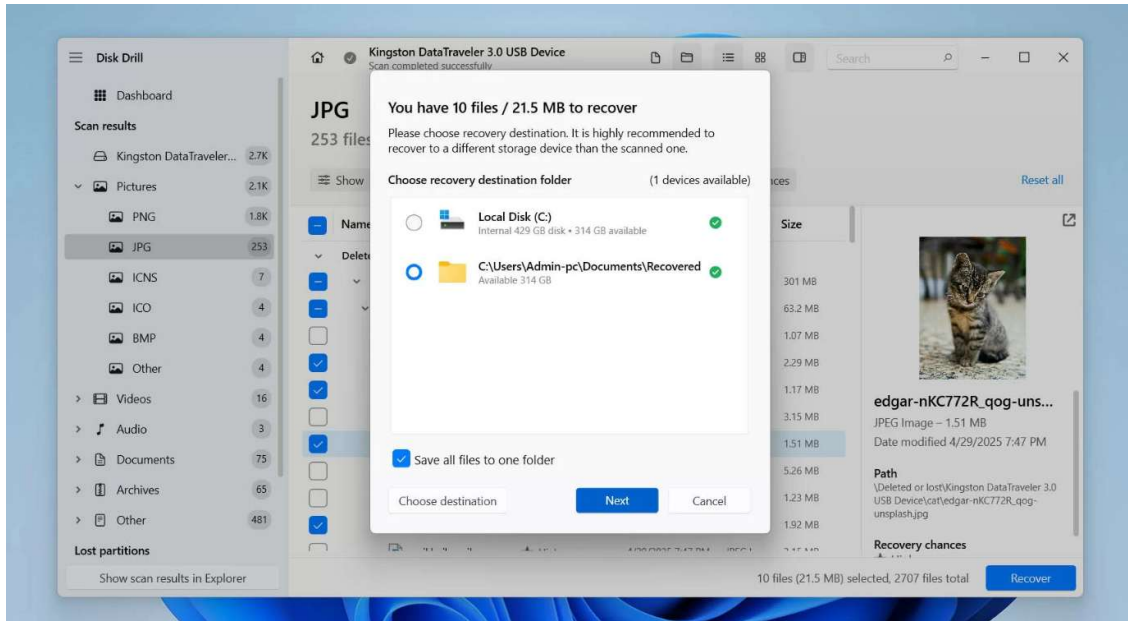
Once the scan finishes, hit **Review found items** to see what Disk Drill has recovered. You can start recovering files as they appear, but it's better to wait until the full scan is complete. Disk Drill will then indicate the likelihood of successfully recovering each file, categorized as high, average, or low.



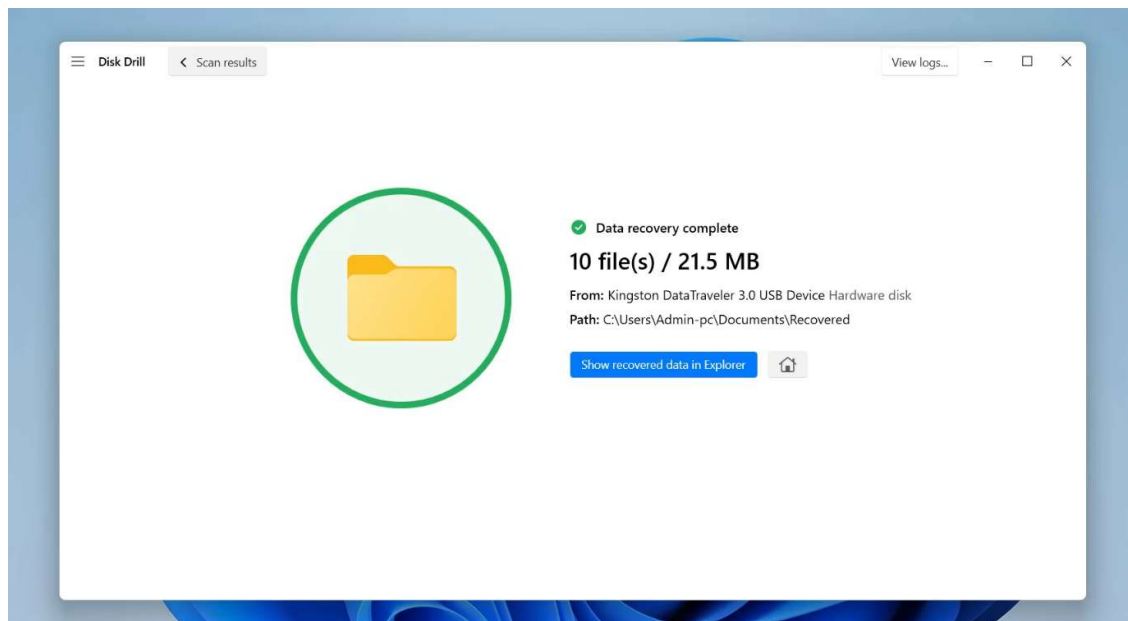
Browse through the results and check the boxes next to the files you want. Double-click any file to preview it. When you're ready, click the blue **Recover** button in the bottom right.



Choose where you want to save the recovered files. If you're planning to run more scans later, don't save them to the same disk you're recovering from. Disk Drill displays a green checkmark for safe locations and a yellow icon if the area may cause issues. After you select a destination, click **Next**.



Disk Drill will restore the files and display a confirmation message when the process is complete. You can open the folder right away to check your recovered data.



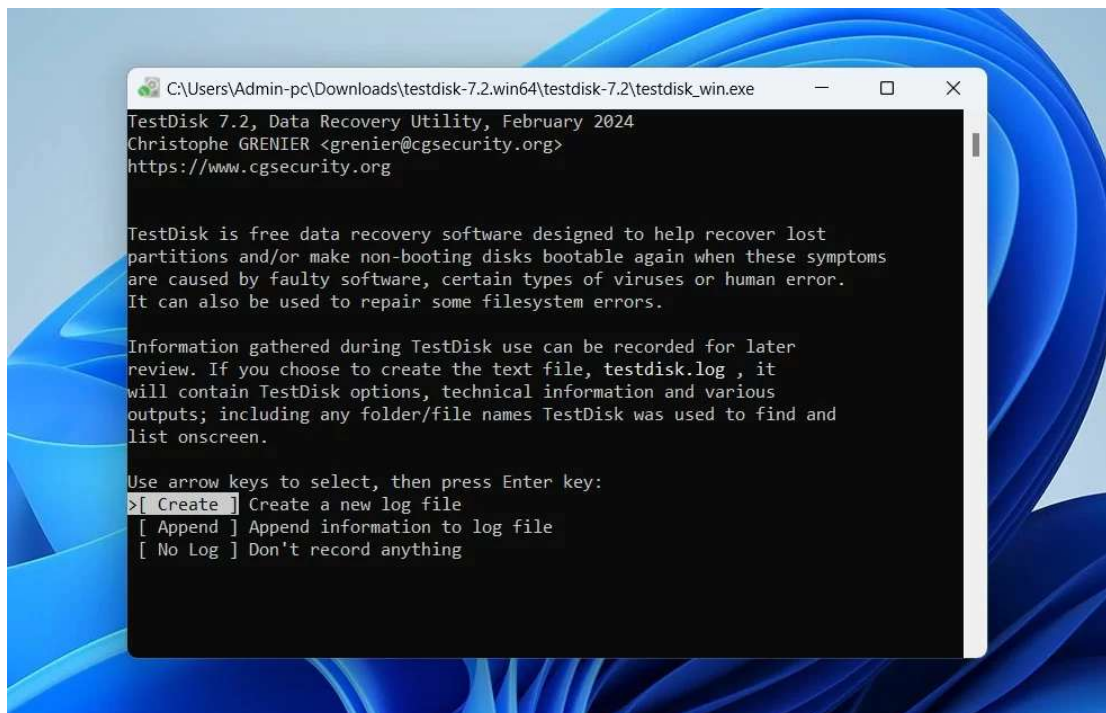
Disk Drill allows you to recover up to 500 MB of data for free, which is typically enough for your most critical files. If you need more, upgrade to the Pro version.

Method #3: Recover an Entire Lost NTFS Partition

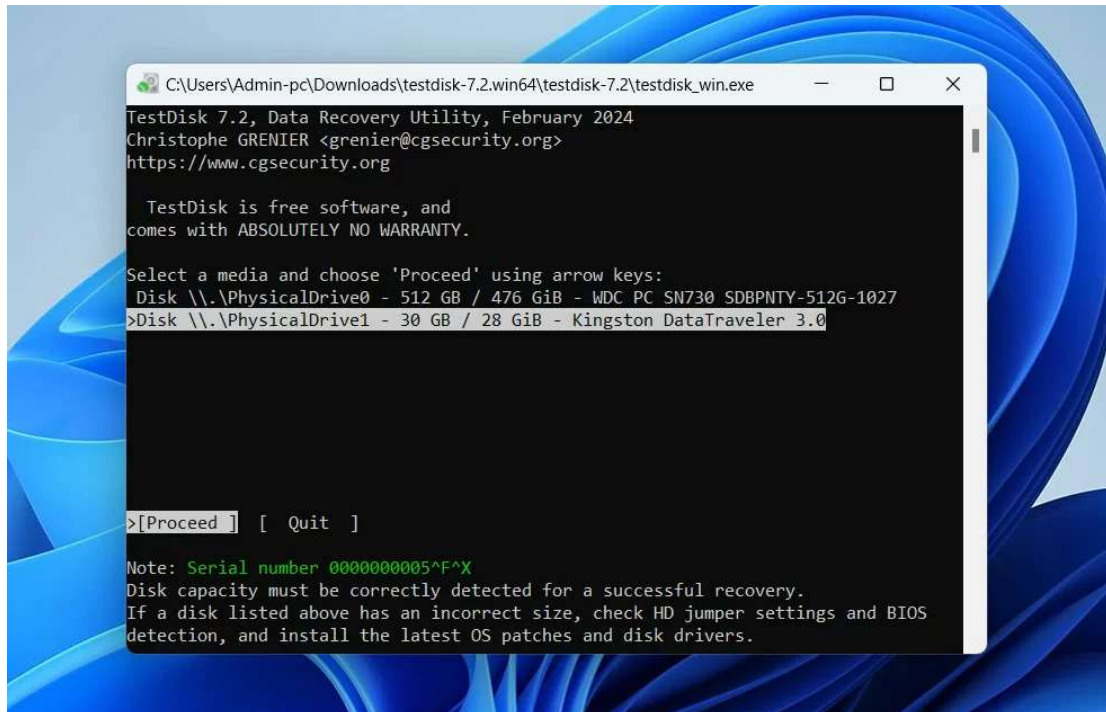
Sometimes it's not just your files that go missing, you might lose the entire NTFS partition or find it's so corrupted you can't access it at all. In such cases, consider using [TestDisk](#). It's a free, open-source, command-line tool that can [restore lost partitions](#) and repair non-booting drives, making it perfect for heavy-duty disk recovery.

Sometimes TestDisk can fix the partition but mess up the file table, which means you'll get the drive back but lose your files. To avoid this, recover your most important data first, use Disk Drill as we showed, or at least create a byte-for-byte image of the drive so you have a backup in case anything goes wrong.

Download TestDisk from its official website. Extract the files and run the TestDisk executable to open the command-line interface.



When TestDisk launches, it'll ask if you want to create a log file. Choose **Create** – keeping a log can help if you run into any issues later.

A screenshot of the TestDisk 7.2 application window. The window title is "C:\Users\Admin-pc\Downloads\testdisk-7.2.win64\testdisk-7.2\testdisk_win.exe". The interface is a black terminal window with white text. It displays the version "TestDisk 7.2, Data Recovery Utility, February 2024", the author "Christophe GRENIER <grenier@cgsecurity.org>", and the website "https://www.cgsecurity.org". Below this, it states "TestDisk is free software, and comes with ABSOLUTELY NO WARRANTY." The main prompt is "Select a media and choose 'Proceed' using arrow keys:". Two disks are listed: "Disk \\.\PhysicalDrive0 - 512 GB / 476 GiB - WDC PC SN730 SDBPNTY-512G-1027" and "Disk \\.\PhysicalDrive1 - 30 GB / 28 GiB - Kingston DataTraveler 3.0". The second disk is highlighted. At the bottom, there is a prompt ">[Proceed] [Quit]" and a note about the serial number "000000005^F^X" and disk capacity detection.

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C:\Users\Admin-pc\Downloads\testdisk-7.2.win64\testdisk-7.2\testdisk_win.exe
TestDisk 7.2, Data Recovery Utility, February 2024
Christophe GRENIER <grenier@cgsecurity.org>
https://www.cgsecurity.org

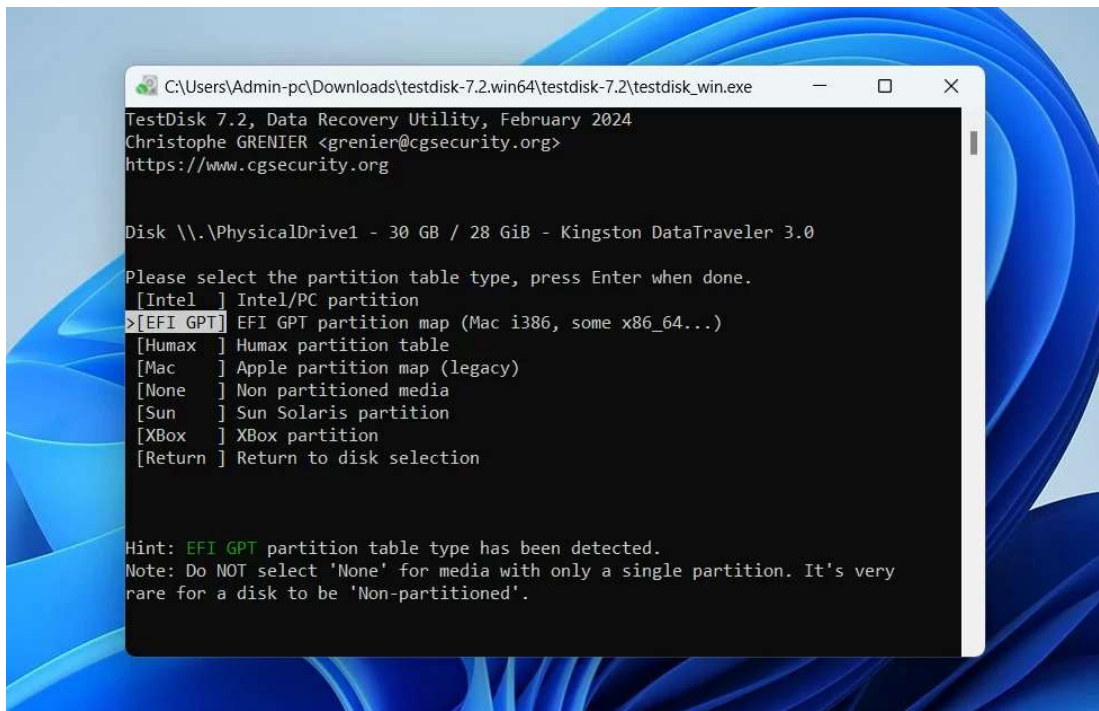
TestDisk is free software, and
comes with ABSOLUTELY NO WARRANTY.

Select a media and choose 'Proceed' using arrow keys:
Disk \\.\PhysicalDrive0 - 512 GB / 476 GiB - WDC PC SN730 SDBPNTY-512G-1027
>Disk \\.\PhysicalDrive1 - 30 GB / 28 GiB - Kingston DataTraveler 3.0

>[Proceed] [Quit]

Note: Serial number 000000005^F^X
Disk capacity must be correctly detected for a successful recovery.
If a disk listed above has an incorrect size, check HD jumper settings and BIOS
detection, and install the latest OS patches and disk drivers.
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TestDisk will then show a list of all connected storage devices. Use the arrow keys to select the disk that had the lost NTFS partition, then press **Enter**.

A screenshot of the TestDisk 7.2 application window, continuing from the previous one. The window title is the same. The interface shows the same disk selection as before, but now it has moved to the next step. It displays "Disk \\.\PhysicalDrive1 - 30 GB / 28 GiB - Kingston DataTraveler 3.0" and prompts the user to "Please select the partition table type, press Enter when done." A list of partition table types is shown: "[Intel] Intel/PC partition", ">[EFI GPT] EFI GPT partition map (Mac i386, some x86_64...)", "[Humax] Humax partition table", "[Mac] Apple partition map (legacy)", "[None] Non partitioned media", "[Sun] Sun Solaris partition", "[XBox] Xbox partition", and "[Return] Return to disk selection". The "EFI GPT" option is highlighted. At the bottom, there is a hint "Hint: EFI GPT partition table type has been detected." and a note "Note: Do NOT select 'None' for media with only a single partition. It's very rare for a disk to be 'Non-partitioned'.".

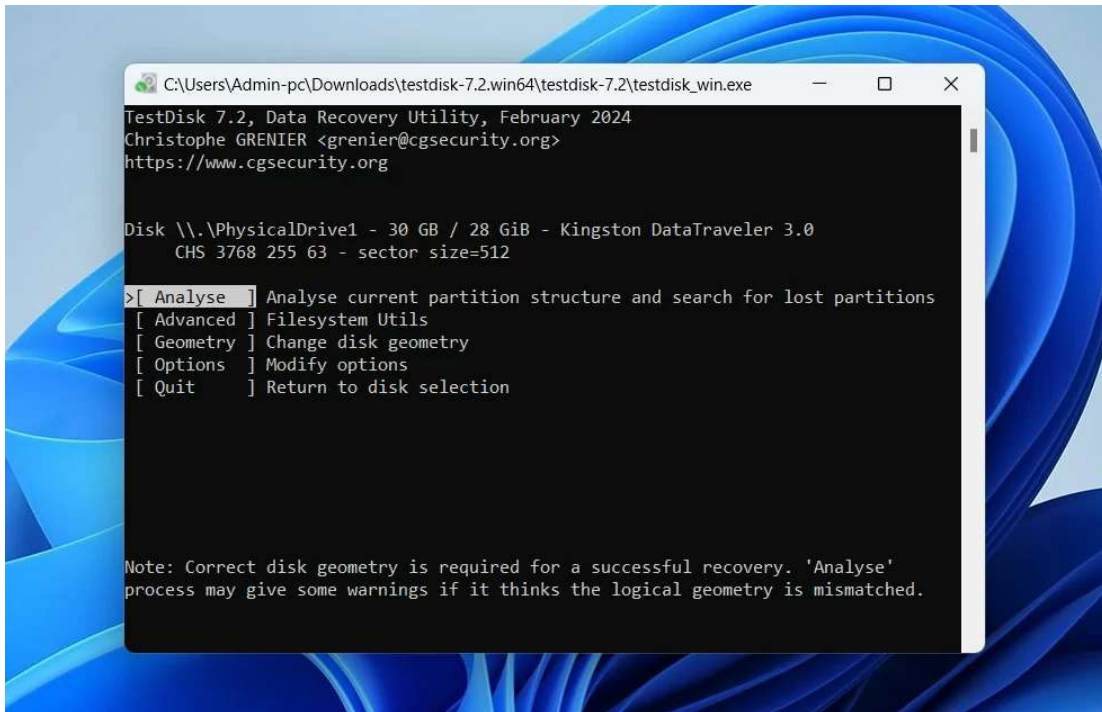
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C:\Users\Admin-pc\Downloads\testdisk-7.2.win64\testdisk-7.2\testdisk_win.exe
TestDisk 7.2, Data Recovery Utility, February 2024
Christophe GRENIER <grenier@cgsecurity.org>
https://www.cgsecurity.org

Disk \\.\PhysicalDrive1 - 30 GB / 28 GiB - Kingston DataTraveler 3.0

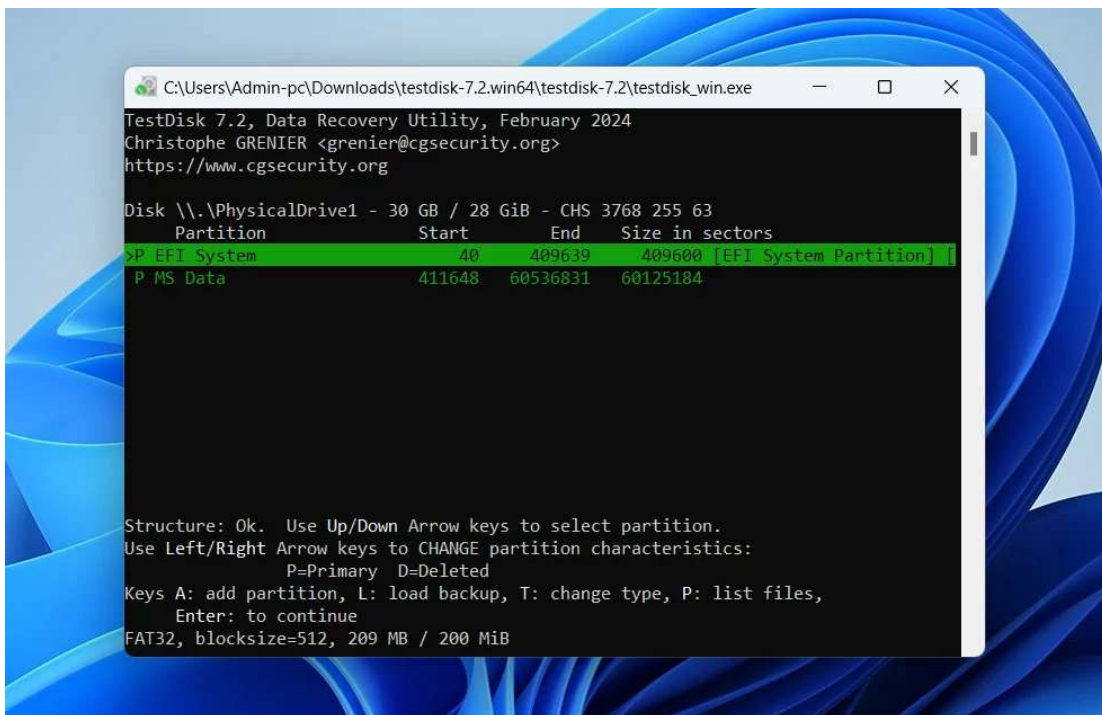
Please select the partition table type, press Enter when done.
[Intel] Intel/PC partition
>[EFI GPT] EFI GPT partition map (Mac i386, some x86_64...)
[Humax] Humax partition table
[Mac] Apple partition map (legacy)
[None] Non partitioned media
[Sun] Sun Solaris partition
[XBox] Xbox partition
[Return] Return to disk selection

Hint: EFI GPT partition table type has been detected.
Note: Do NOT select 'None' for media with only a single partition. It's very
rare for a disk to be 'Non-partitioned'.
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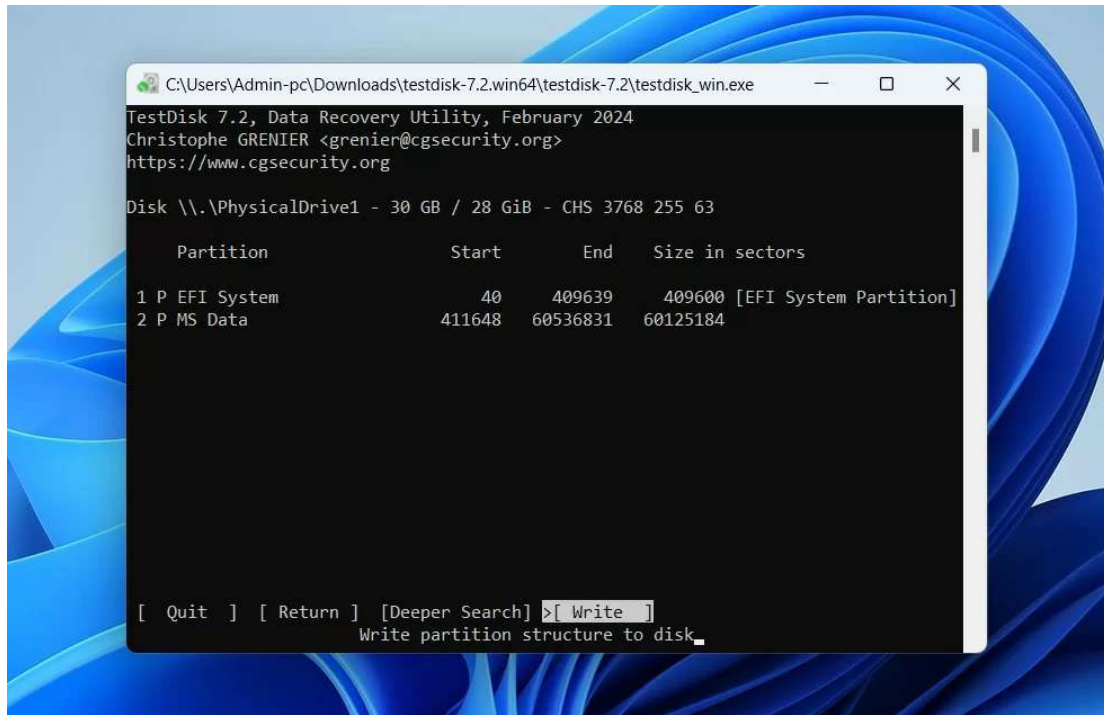
Next, it'll ask for the partition table type. TestDisk usually detects this automatically. For most Windows systems, it'll be **Intel** or **EFI GPT** if you're using a newer computer with UEFI.



Select **Analyse**, then choose **Quick Search**, and hit **Enter** to start scanning for lost partitions.



Once the scan finishes, TestDisk will list any partitions it finds. If you see the missing NTFS partition, press **P** to view the files and make sure it's the right one.



After restoring the partition, exit TestDisk and reboot your computer. Then check if the partition and your files are accessible again.

If TestDisk doesn't find the partition on the first try, you can run a Deeper Search. It takes longer, but it digs deeper and has a better chance of finding lost partitions.