Do SSDs need defragmentation?

As a new generation of solid state drives, do SSDs need defragmentation like HDDs in the past?

If you're a longtime computer user, you've probably read somewhere or heard word of mouth that when your hard drive starts to slow down, it's time to perform a process called defragmentation. But is that advice still relevant in the age of solid-state drives (SSDs)? Let's find out what defragmentation does and whether your SSD needs it!

What is defragmentation?

Defragmentation (or defragging) is the process of organizing and rearranging data on a storage device, such as a hard drive, so that the data is stored in contiguous blocks. This can help improve the performance and speed of the device.

This is because on a traditional hard drive, data is stored on spinning disks called platters. When a file is saved, it is broken down into smaller pieces called blocks, which are spread across the platters. When the computer needs to access a file, it has to read the blocks from many different locations on the hard drive, which can take longer than reading all the blocks from a single location. Defragmentation rearranges the blocks of a file so that they are stored together, allowing the computer to access the file more quickly.

In other words, defragmentation is the process of restructuring the data blocks stored on a hard drive so that they are located close together in physical space, which can potentially speed up read times when accessing data on the drive.

SSDs do not need defragmentation

The way SSDs work makes the benefits of file defragmentation almost negligible, and can even cause unwanted 'side effects'.

It doesn't take much longer for an SSD to access data from any location than from another location. In fact, if different pieces of data are stored on memory chips using different memory channels, the total data retrieval can be even faster due to the combined bandwidth of multiple channels and chips.

While you can certainly run a defragmentation process on your SSD, as mentioned, you most likely won't notice any difference in performance. Plus, there are potential risks that you may not be aware of.

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