



TEST DISKEEPER® 9.0 AND SEE IMMEDIATE RESULTS

If you are testing Diskeeper, here are some helpful tips on how to get the best results. Print this document out and use it as you go through the steps with Diskeeper open on your computer.

Diskeeper has an entirely new approach to defragmenting when compared to what you may be accustomed to. Diskeeper was designed to allow you to automate defragmenting while not impacting resources during the use of other programs. This procedure will demonstrate how to set up and test Diskeeper as it is intended to be used—for automatic system maintenance.

Let's Look At Your Hard Drive:

Diskeeper gives you a unique window on your hard disks' performance, reliability, and level of fragmentation with at-a-glance before and after GUIs.

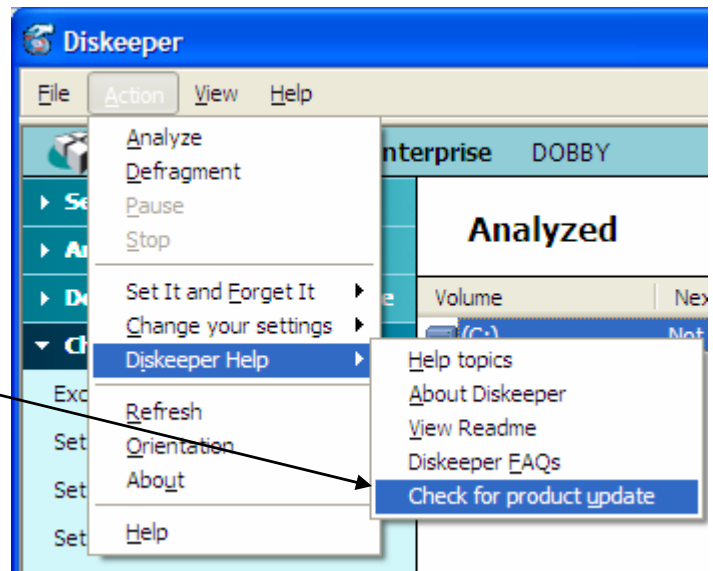
The most important improvements are the ones that occur on your system. The following steps will give you a quick and easy demonstration of Diskeeper on your own workstation or server, and introduce recommended settings.

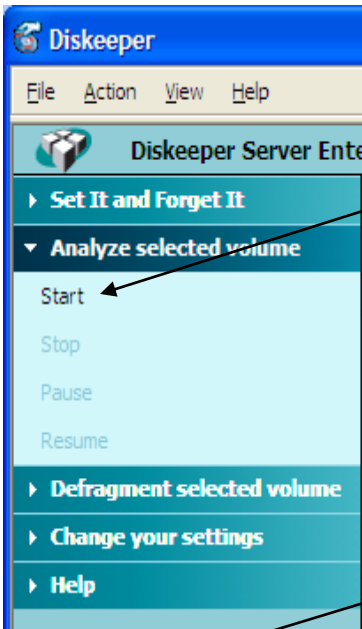
If you do not have Diskeeper 9.0 Professional or Diskeeper 9.0 Server Standard, or Enterprise installed, do that now.

Once you've installed Diskeeper, just follow these easy steps:

1. Launch the Diskeeper program and read the orientation pop-up message—it contains simple instructions on how to start using Diskeeper. After you have read the message, you can prevent it from displaying in the future by clearing the check box in the bottom left corner. Click **OK** in the Orientation dialog box to continue.

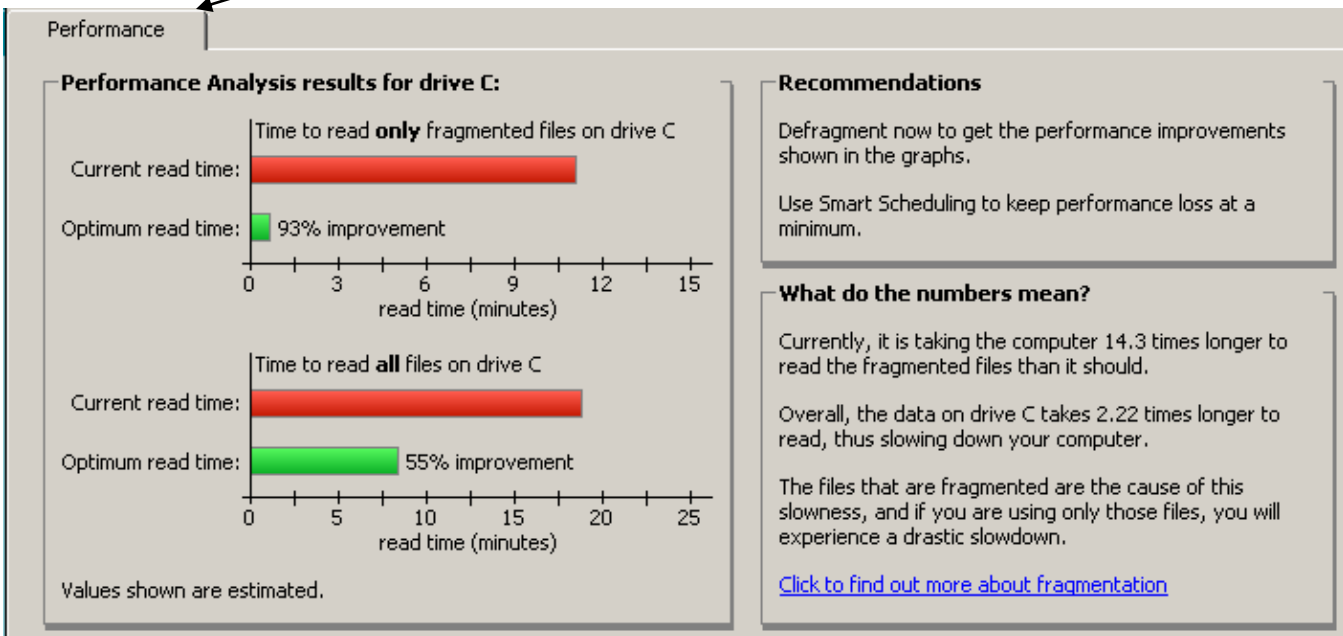
2. If this is the first time Diskeeper has been launched on this system it will check to see if a more recent version of Diskeeper is available. If a newer version of Diskeeper is available, you are given the option of downloading it. This automatic update check only happens the first time you start Diskeeper, but you may check for updates anytime you wish by selecting **Check for Product Update** from the **Help** menu.



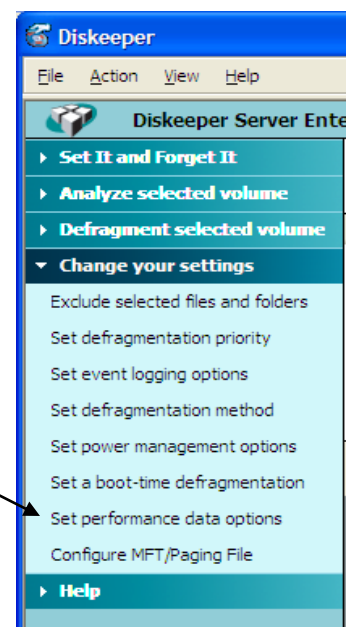


3. To determine how fragmented files are affecting the performance of your machine simply highlight the drive letter and click **"Analyze selected drive"** from the menu and then click **Start**. You can also launch this by clicking on the Analyze icon in the Diskeeper toolbar.

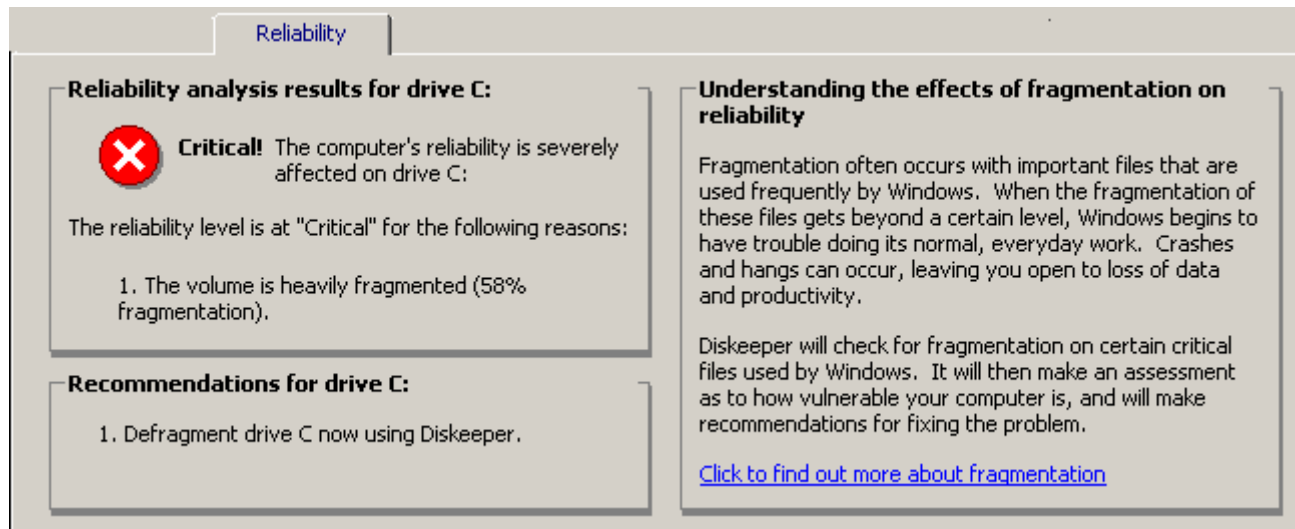
Diskeeper will determine the lost performance on the drive by analyzing how long it takes to read the volume in its current state, and how long it will take to read the volume once the files have been defragmented. The **Performance** window tab view gives you a detailed picture of your disk performance losses due to fragmentation, and the expected improvement you will see after defragmentation. The colored lines in the graph display shows a good "before and after" picture of your drive's performance. Use the ALT + Print Screen keys to copy this display. Then paste it into a graphics editor (such as Microsoft® Paint) and save it.



It should be noted that the first performance analysis is based on pre-determined disk performance values measured as a part of disk performance research done by Executive Software. To get a more accurate performance measurement of your actual disks, Diskeeper must scan your drives to measure their performance. Since this measurement can briefly slow down your computer, this scan operation is disabled by default, but you can turn it on easily. The **Set performance data options** are described in the **Change your settings** menu.



Now let's check the systems reliability. The **Reliability** window tab alerts you to general file system health. The Reliability pane gives a reliability analysis and rating, the reasons for that rating, and recommendations for improving or maintaining the reliability of the disk volume. Use the ALT + Print Screen keys to copy this display. Then paste it into a graphics editor (such as Microsoft® Paint) and save it.



The screenshot shows the Windows Reliability pane for drive C:. The title bar reads "Reliability". The main content is divided into three sections:

- Reliability analysis results for drive C:** A red circle with a white 'X' icon is next to the text: **Critical!** The computer's reliability is severely affected on drive C: The reliability level is at "Critical" for the following reasons:
 1. The volume is heavily fragmented (58% fragmentation).
- Recommendations for drive C:**
 1. Defragment drive C now using Diskkeeper.
- Understanding the effects of fragmentation on reliability:** Fragmentation often occurs with important files that are used frequently by Windows. When the fragmentation of these files gets beyond a certain level, Windows begins to have trouble doing its normal, everyday work. Crashes and hangs can occur, leaving you open to loss of data and productivity. Diskkeeper will check for fragmentation on certain critical files used by Windows. It will then make an assessment as to how vulnerable your computer is, and will make recommendations for fixing the problem. A blue link reads: [Click to find out more about fragmentation](#)

Executive Software has conducted extensive research into the causes of disk performance and reliability problems. This research has shown these factors play a significant role in regards to disk performance and reliability:

- File Fragmentation
- MFT fragmentation
- Paging file fragmentation
- Available free space

Diskkeeper uses these factors to determine a disk reliability index each time it analyzes or defragments a disk volume.

Disk reliability is rated into three categories—Healthy, Warning and Critical.



The image shows a "Color legend" box with a teal header and a light blue background. It lists three reliability levels with corresponding icons:

- Critical:** Represented by a red circle with a white 'X'.
- Warning:** Represented by a yellow triangle with a black exclamation mark.
- Healthy:** Represented by a green circle with a white checkmark.

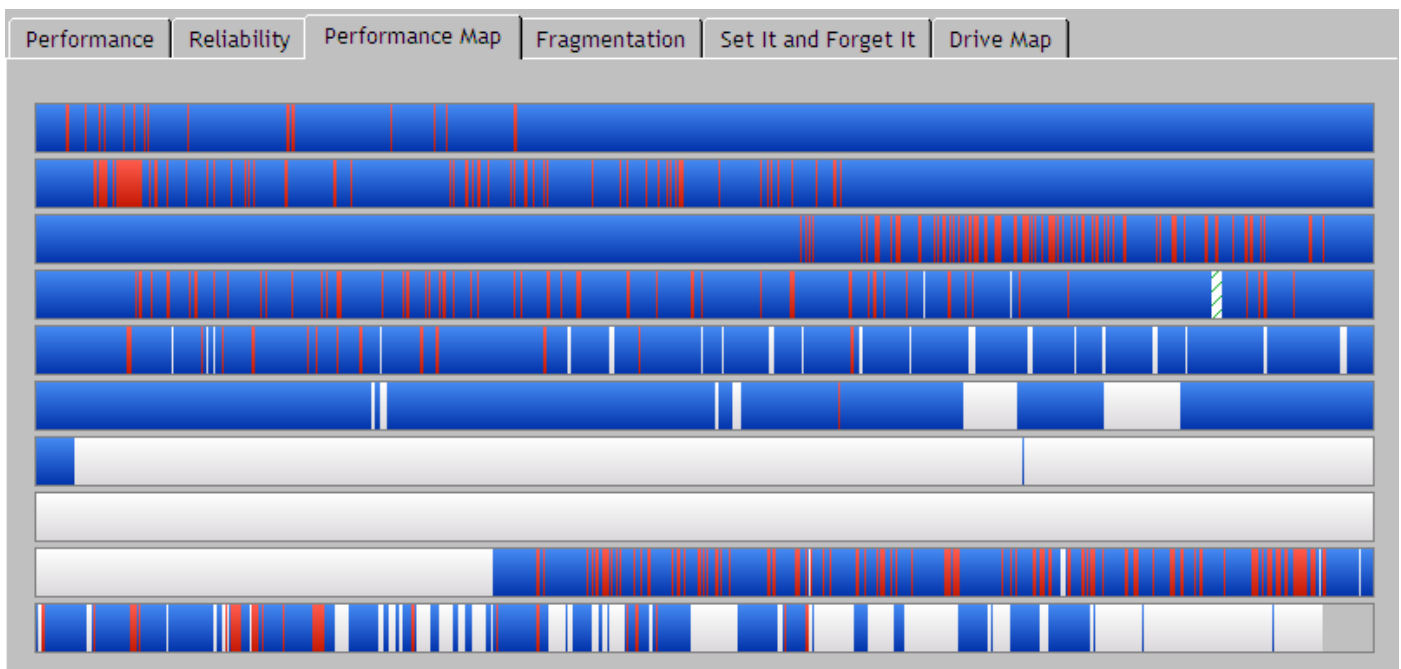
4. Choose the **Fragmentation** tab. The Fragmentation window details fragmentation specifics, including file summary information, average fragments per file statistics and fragmentation percentages. Save this particular analysis by clicking the “Save” button.

The screenshot shows the 'Fragmentation' tab of a utility window. It displays the following data:

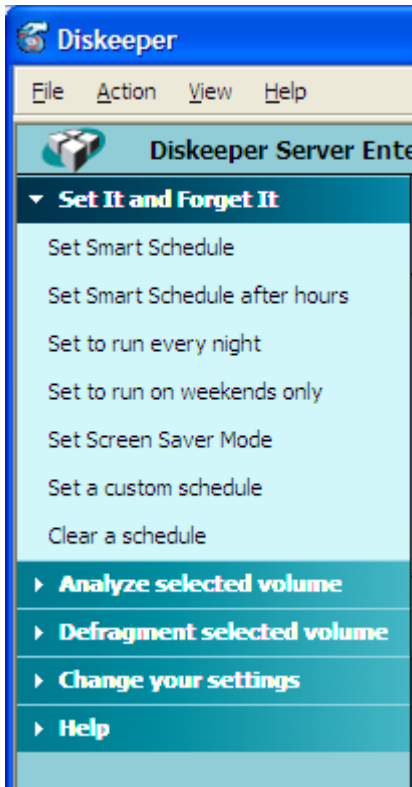
Results of fragmentation analysis for the drive C:	
Volume Gladius (C:):	
Volume size	= 28,600 MB
Cluster size	= 4 KB
Used space	= 18,852 MB
Free space	= 9,747 MB
Percent free space	= 34 %
Fragmentation percentage	
Volume fragmentation	= 6 %
Data fragmentation	= 9 %
File fragmentation	
Total files	= 46,393
Average file size	= 424 KB
Total fragmented files	= 3,072
Total excess fragments	= 135,527
Average fragments per file	= 3.92
Paging file fragmentation	
Paging/Swap file size	= 1,280 MB
Total fragments	= 1
Directory fragmentation	
Total directories	= 3,165
Fragmented directories	= 129
Excess directory fragments	= 1,082
Master File Table (MFT) fragmentation	
Total MFT size	= 50,149 KB
MFT records In Use	= 50,136
Percent MFT in use	= 99 %
Total MFT fragments	= 2

At the bottom right, there are three links: [Print report](#), [Save report](#), and [Click to view the most fragmented files](#). An arrow from the text above points to the 'Save report' link.

5. After saving the analysis results, briefly view the **Performance Map** visual display. This graphic representation is a quick and helpful tool to gauge file access performance. Use the ALT + Print Screen keys to copy this display. Then paste it into a graphics editor (such as Microsoft® Paint) and save it.



6. Repeat the above steps (#3-5) for each volume.



7. Next, navigate to the “Set It and Forget It”[®] window tab. Once open, select the **Set Smart Schedule** option. Check the box to extend this schedule to all of your disk volumes and click the OK button. From this point forward Diskeeper will automatically maintain your volumes in the background, with no further intervention from you.

8. To check on Diskeeper progress, return to the program the next day (after Diskeeper has executed your defragmentation schedule) and re-run the Analysis. Repeat steps 3-5 to record analysis data. (remember to save the results to a different file name than the “before” analysis results). By comparing the “before” and “after” reports, you can assess Diskeeper's benefit to your systems performance and reliability.

9. If you elected to set an initial schedule other than Smart Scheduling, we recommend returning to the Set It and Forget It options to select Smart Scheduling at this time. The benefit of a Smart Schedule is that it will continue to proactively defragment your system, preventing fragmentation buildup and ensuring that when a defragmentation task does run, that it completes quickly (usually under a minute)! All this is done automatically and without any more effort from you.

Note: If this is the first time defragmenting your volumes, the first few passes of Diskeeper may cause some system slows if defragmentation is run *manually*, as there will be months or years worth of built up fragmentation. If this is the case, we strongly recommend applying Diskeeper's I/O Smart[™] (on by default for *scheduled* defragmentation only), and also possibly electing to “Smart Schedule after hours” or similar custom scheduled period. Remember that by default Diskeeper scheduled defragmentation passes are designed to use only “left-over” system resources, ensuring transparent-to-user defragmentation.

Some editions of Diskeeper include the Terabyte Volume Engine[™] (TVE), which is a specialized defragmentation engine for very large disk volumes (100 GB or larger in size).

Defragmenting very large volumes with a "regular" defragmenter can typically consume unacceptably high amounts of system resources—often bringing the system "to its knees" or worse. Much of this system resource use is from maintaining large lists of files in memory and updating graphic displays.

The TVE operates differently from the standard Diskeeper defragmentation engines since it is designed specifically for very large volumes. When the TVE is defragmenting a disk, the graphic display usually shown in the Drive Map is replaced with numerical data showing the progress of the defragmentation operation. This reduction in system resource usage pays off in lower CPU and memory consumption and faster defragmentation of very large volumes.