The Breakthrough Technology of InvisiTasking® in Diskeeper®

Diskeeper made and solidified its reputation with the trademarked phrase "Set It and Forget It"® meaning you just scheduled Diskeeper and forgot about it. This was fantastic improvement over manual defragmentation. Defragmentation with Diskeeper was done on a scheduled basis keeping systems at peak performance and reliability.

Times change though. Disk drives have grown to exponentially large proportions. With the growth of disk drives has come an explosion in the size and number of files stored on disk drives. With terabyte drives (a trillion bytes) now readily available and smaller drives selling for very little money, you can store a LOT of stuff—practically anything. And file sizes continue to increase as well.

Documents with embedded graphics, large presentations, scanned images, multi-media files, etc., are now residing on hard drives. The vast quantities of these and their inordinate size (plus the fact that these media files need to reside contiguously on a disk for optimal use) present new challenges for computer performance and reliability making defragmentation more critical than ever.

As disks grow bigger and files grow larger and more numerous, defragmentation is required more and more often to maintain a computer's peak performance and reliability. This makes it absolutely vital to handle disk fragmentation as soon as it occurs. But scheduling a resource-intensive task—such as necessary daily or even hourly defragmentation—can be a scary proposition for IT staff.

System tasks such as defragmentation, backups and malware scans are therefore often scheduled for offhours, or during downtime. This approach is taken to minimize the interference caused by maintenance. Waiting for scheduled maintenance tasks, however, introduces negative effects between scheduled activities, and it can bring about unavoidable negligence in mission critical servers that cannot be taken off-line.

Additionally, the scheduling itself is a maintenance chore which adds administrative overhead. IT staff need to ensure scheduling is understood and correctly set for each system. Follow up is needed—did the job run, is it complete and so on.
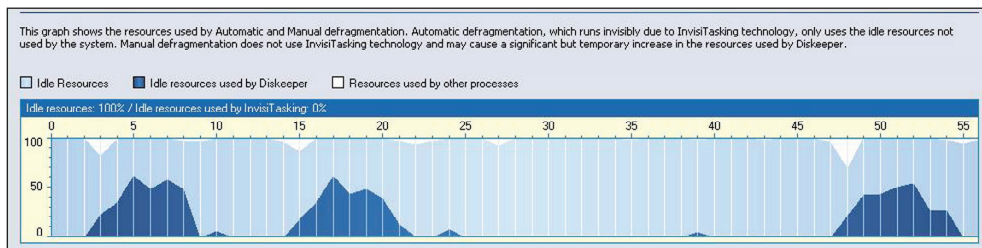
The Diskeeper new user interface includes the Idle Resources graph which shows in real time the amount of idle resources being used by Diskeeper processes.

InvisiTasking—Completely Automatic, Undetectable Defragmentation

While many software products attempt to run invisibly in the background and some strides have been made, complete and utter transparency has never before been achieved—until now.

InvisiTasking is a remarkable new technology which enables Diskeeper to run invisibly with absolutely no intrusion on system resources. As CPU and I/O resources are almost never fully utilized, InvisiTasking's transparency is achieved by undetectably tapping into these unused system resources. InvisiTasking monitors resource consumption on a Windows® system (disk, memory, network and CPU usage) and injects Diskeeper processing into the unused portions—and only the unused portions.

Software engineers sometimes attempt to share resources by choosing lower CPU priorities to run under, and past efforts have been made at throttling disk and network I/O. Windows allocates CPU resources using a kind of hybrid round-robin / priority based pre-emptive scheduling. One aspect of this scheme can cause low priority processes to unnecessarily pre-empt higher priority processes, starving them of CPU resources. InvisiTasking utilizes a technique to avoid using a CPU time-slice when higher priority processes need to run.

InvisiTasking takes a proactive approach to instantly detect resource usage and network traffic, while carefully managing memory usage and maintaining complete granular control over its own I/O. This ensures that Diskeeper never pre-empts users or services. InvisiTasking is so good that it is all but impossible to even detect whether Diskeeper is running.

It's important to note that InvisiTasking is far more advanced than any low priority I/O approaches

that do "I/O throttling." First off, InvisiTasking goes beyond I/O to address all system resource usage. With Low Priority I/O approaches, there can still be some contention for resources at the disk and it does nothing to address other system resources. InvisiTasking checks to make sure there is no resource contention anywhere before processing. It applies a pro-active (rather than re-active) approach designed to truly deliver background operation.

InvisiTasking is essentially a resource delegation framework allowing the OS to operate at a higher efficiency. InvisiTasking achieves across-the-board compatibility by allowing applications and services to operate under an additional layer of resource allocation. When operating in the InvisiTasking framework, even I/O intensive processes are able to achieve transparency.

Diskeeper with InvisiTasking— Truly Automatic and Invisible

Diskeeper is designed to go to work on-the-fly in real-time—when needed. Since it runs transparently with no intrusion on system resources, no scheduling is needed by IT staff. Racing to handle performance and reliability, defragmentation with Diskeeper begins almost immediately. Diskeeper keeps systems running at maximum speed and reliability at all times. The result? Less downtime, less work and trouble for IT staff and boosted user productivity and superior performance. That is why maximum benefit to you comes from deploying Diskeeper on every system you manage.

You may be skeptical at first that InvisiTasking has virtually no impact on system overhead. For this reason, you can schedule times when Diskeeper is prevented from running. Eventually, we're sure you'll be convinced and this type of lock-out scheduling will be forgotten.

The scheduling era is over. Diskeeper races forward into the future and the era of truly automatic, invisible defragmentation has begun.