



## ENERGY EFFICIENCY

*“In our ongoing effort to save energy we try to keep the processors from overworking which would cause temperatures to go up. For example, virus scans are faster due to a more efficient system help from Diskeeper. It’s a small thing but can help with other efforts to add up.”*

David E. Weiss, HelpDesk, Lockheed Martin

*“One of the things I learned years ago in a database tuning class was the two easiest things to do to improve performance and efficiency are reorganization/runstats and keeping the disks defragmented. The reasoning is that when the database gets data off of the disk, it doesn’t just grab one or two records, it reads in a block of data. If that block of data is fragmented, then it takes more reads to get the entire data block into the database buffers (memory). I equate that with less energy used for repositioning the drive heads for searching and finding all of the data fragments to complete the data block.”*

Lynn Allen Frick, Database Administrator, Kansas State University Foundation

*“It just makes sense to me that if the data throughput on my hard drive is faster due to less fragmentation then the computer will be able to read or write data quicker which will mean it will use less energy performing the tasks over time. And it also goes without saying that I will be able to get more work done in less time which will in turn make me more efficient.”*

Russell Beam, Network Administrator, Reynolds Bell Thoroughbred Services

*“For a company with racks and racks of machines, any reduction in heat is significant. Because Diskeeper reduces unnecessary disk seeking, it reduces heat, which reduces energy consumption.”*

Ken Klein, President, Sustainable Alternatives, LLC

*“As you transfer data to a hard drive it cannot take into account that the recorded data will change or the files may become larger. The hard drive will write and store data in pre-determined quantities and fills space based on the table that keeps track of where and how much data exists. The fragments result because files change, become larger, and the space it resides in remains the same due to data stored at its boundaries. The hard drive maintains a record of how the data is stored so if a file had to be extended and could not be appended, the additional data would be stored in a free space area.*

*“As long as the individual files have their data stored in an area instead of scattered over the surface of the media the time and energy the heads spend moving to pick up the data should decrease. I expect that a mobile computing device with rotating magnetic media in theory should have improved battery life. The idea of sorting the data and keeping it contiguous make sense.”*

**William Olufs, System Engineer, Motorola Solutions**

*“I could see and hear less "drive thrashing" with Diskeeper. My feeling is that if the drives are not working hard to retrieve data then they are using less energy. I suspect that the energy savings are not as substantial as we might want but combine that with reducing the wear on drives, and the resulting extension of drive life, and you have actual cost savings.”*

**Mark Sills, Technology Coordinator, Southern Connecticut Hebrew Academy**

*“It's only logical that less disk thrashing due to less disk fragmentation would result in less energy used. Thinking of the large disk farms found in today's networks it makes sense that defragmented disks would result in less energy used in the data center.”*

**Rob Callaghan, The CCITS Group**