



How fast are your files?™

hIOMon™

File I/O Performance Monitor



The I/O Speedometer and Odometer for your Files, Devices, and Applications™

### The Importance of Monitoring Disk I/O Performance Up at the File and Application Level

The idea is simple: match your disk storage purchases and particular usage to your own application-specific needs. But the required evaluation and verification tasks can be difficult, complex, and daunting --- especially if simply a myopic “disk speeds and feeds” focused approach is taken. Determining the specific “I/O profile” of your particular applications, moreover in an efficient and a time and cost-effective manner, is key to appropriately and prudently aligning your disk storage purchases and subsequent management to the actual needs of your applications (and associated personal or business goals).

hIOMon from hyperIO<sup>SM</sup> gives you the ability to easily, quickly, precisely, and reliably both measure and monitor the performance of your disk I/O operations up at the **file and application level**. hIOMon lets you collect, display, export, and monitor a wide variety of disk I/O metrics based upon actual empirical data --- and all from the perspective of individual files/devices/applications within your own production environment.

### hIOMon Benefits

- **Better diagnose and understand storage access performance problems** - quickly identify the particular files/devices being impacted and the exact extent of impact.
- **Verify and ensure required levels of file/device performance (QoS) are being met** – with sophisticated Alert capabilities at the individual file level with System Event Log support.
- **Evaluate proposed improvements to the performance of your computer systems** – easily and quickly get precise empirical performance data using your own files and applications as you normally do.
- **Help reduce storage management costs – automated** file/device I/O monitoring that lets you efficiently “focus on your files/apps”.
- **Prudently approach and adopt emerging storage technologies** – use empirical, accurate file-specific performance data to make better, more-informed decisions.

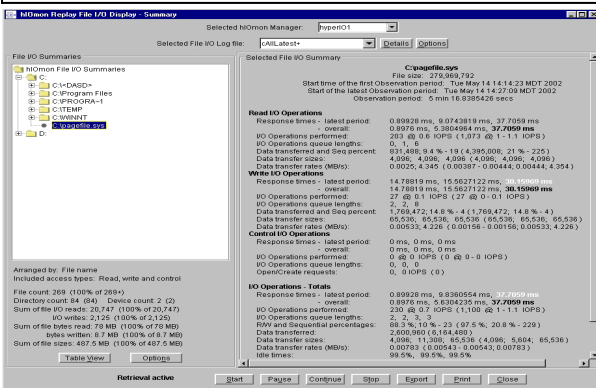
### What is hIOMon?

hIOMon is an innovative, unique performance analysis software utility tool that allows you to quickly and easily both measure and monitor disk I/O operations up at the **application level** upon an individual, specific **file** basis. With a rich set of metrics to choose from, you can select the particular files of interest (with wildcard and exclusion support), the type of I/O operations to monitor (for example, read and/or write file I/O operations), the level of detail (e.g., “I/O trace”, “summary”), and much more.

With an automated-start option, hIOMon examines and efficiently records the performance of the selected file and device I/O operations for real-time and/or subsequent “replay” display. hIOMon includes a Java™-based Graphical-User-Interface (GUI) that allows you to view (either locally or remotely over the network) the I/O performance information collected by hIOMon, both “I/O trace” (within a customized tabular format) and/or “summarized” (aggregated for a concise, higher-level survey of the selected I/O operation activity) display.

The summarized I/O performance metrics can also be written by hIOMon to the System Event Log for display and notification by popular system management tools. In addition, hIOMon features “export” options that allow you to write the I/O trace and/or summarized I/O performance information to a disk file for use by spreadsheet programs (such as Microsoft® Excel), so that you can perform your own specific analysis upon the performance data and/or generate customized charts and reports. Plus there’s support for the Microsoft Performance/System Monitors as well as WMI support.

hIOMon monitoring also provides sophisticated Alert capabilities to detect a variety of file I/O performance thresholds that you can specify, with corresponding System Event Log support for notification as well. **Download a free trial version at [www.hyperIO.com](http://www.hyperIO.com) now!**

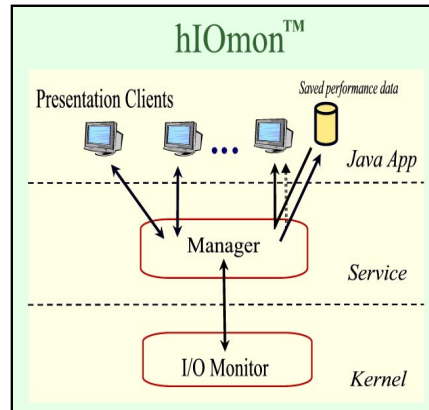


The hIOMon Presentation Client “File I/O Summary” display includes all of the essential file and disk I/O performance metrics.

## Architecture

Designed with a flexible, adaptable, scalable architecture, hIOmon consists of 3 primary software components:

**hIOmon Presentation Client.** A Java-based application that provides a standard windows-type GUI that communicates with the hIOmon Manager to set the various hIOmon control and management options. Also used to display the collected file I/O performance metrics (in real-time or “replay” display modes). The Presentation Client can optionally access more than one hIOmon Manager concurrently.



**hIOmon Manager.** The Manager runs as an operating-system service and manages the hIOmon I/O Monitor. It also transfers the collected file I/O performance information to the hIOmon Presentation Client and/or saves the performance information to a specified disk file (for “replay” mode display) as well as export files. The Manager can also communicate with more than one hIOmon Presentation Client concurrently.

**hIOmon I/O Monitor.** The hIOmon I/O Monitor is an efficient, lightweight component that performs the actual monitoring of the selected file and device I/O operations; based upon such monitoring, it collects the requested I/O performance information that is subsequently retrieved by the hIOmon Manager. The I/O Monitor does not require any file system modifications nor does it require any application or operating system code changes.

## System Requirements

- Intel® x86 or x64 compatible computer (with Pentium® 233 MHz or faster processor).
- Minimum 64MB RAM (Windows® XP); 128MB (Windows Server 2003); 512MB (Windows 7/Vista/2008).
- 30 MB of free hard disk space for installation of the hIOmon software and associated documentation.
- Windows 7/XP/2003/Vista™/2008 (Final Release or above)
- Sun™ Java 2.0 Runtime Environment (JRE) Release 1.6 or above for Windows (required only if the optional hIOmon Presentation Client is used).

## Feature List

- Installs in minutes using the Windows Installer
- File/Application-level I/O performance metrics
- Device-summary and extended metrics options
- Specific file and process selection (with wildcard and exclusion support)
- Network-attached files and raw device support
- Fragmented file I/O and system file cache metrics
- Precision sub-millisecond time stamps
- Selectable performance metrics to be collected
- I/O trace option (with boot logging option)
- Summarized I/O performance characteristics
- Detection of sequential access within file/device
- Associated process-based summarized metrics
- Summary performance metrics on a periodic, close-file, or Alert basis (including queue lengths and idle times)
- Alert capabilities for monitoring selected file I/O performance thresholds (user-specified)
- Real-time and Replay display modes
- Export capabilities with CSV and Intel® NASPT support
- Microsoft WMI and PerfMon/SysMon support
- Validated as “Ready for IBM® Tivoli® software”
- Configurable start-up and set-up options, including automated operation, and hIOmon usage statistics
- Local or remote control/display over the network
- Simple, easy-to-use CLI, GUI and IE/web displays
- Local or remote control/display over the network



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