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hyperI/O LLC

hIOmon™
User-Interface (UI) AddOn
Version 9.7.4667.0 (Jan 2024)

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**** hIOmon User-Interface (UI) AddOn ReadMe File ****

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NOTICE !

The "Late-breaking news" section contains information that might affect the installation and use of the hIOmon UI AddOn.

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Contents

- 1. Introduction
 - 1.1 – Purpose of this ReadMe file
 - 1.2 – Distribution and Use Policy
 - 1.3 – Description (Overview and Features)
 - 1.4 – Operating Systems and Associated Software (System Requirements)
- 2. Late-breaking news
 - 2.1 – New Features
 - 2.2 – Known Problems
- 3. Installation
 - 3.1 – Installation notes: all Microsoft® Windows® platforms
 - 3.2 – Installation instructions: Windows 10, 11, 2016, 2019, and 2022
 - 3.3 – Uninstalling the hIOmon software
- 4. Operation
 - 4.1 – Getting Started
- 5. Hints and issues
 - 5.1 – Hints

5.2 – Software issues

6. Technical assistance and support information

6.1 – Obtaining additional information from hyperI/O LLC

6.2 – Obtaining information via the Internet

6.3 – Ordering software

7. Legal statements

7.1 – Trademark notices

7.2 – Legal notice

7.3 – Copyright

1. INTRODUCTION

1.1 PURPOSE OF THIS README FILE

This ReadMe file provides a brief product description and operation overview, installation instructions, support information, and software release notes for the hIOMon User-Interface (UI) AddOn software from hyperI/O LLC.

1.2 DISTRIBUTION AND USE POLICY

Please read the hyperI/O LLC Software License Agreement (EUSLA) for the conditions and terms associated with the use (including installation) of the hIOMon UI AddOn from hyperI/O LLC. The EUSLA can be found in the “license.pdf” document file; the “license.pdf” along with the “license.rtf” document files (which are equivalent in content) are copied to the installation directory as part of the hIOMon software installation process. The “license.pdf” can be found within either the “Documents\UIAddOn” folder or the “Documents” folder.

Do not use the hIOMon software until you have carefully read this EUSLA. Copying, installing, or otherwise using the hIOMon software indicates that you have read, understand and accept this EUSLA and agree to be bound by all of the terms of this EUSLA. If you do not accept this EUSLA, do not copy, install or otherwise use the hIOMon software.

1.3 DESCRIPTION

Overview

The “hIOMon UI AddOn” provides additional user-interface software components that can be used together with hIOMon software utilities such as the hIOMon “Workload I/O Profiler (WIOP)”. See the hIOMon web site for detailed information about the hIOMon WIOP and other hIOMon software utilities.

Features

The hIOMon UI AddOn software installation package includes the following:

- The **hIOMon Command Line Interface (CLI)**
- The **hIOMon Browser**, which is a windows-type GUI display that leverages the hIOMon Windows Management Instrumentation (WMI) support and is implemented as an HTML application; it provides an easy-to-use means of controlling the overall operation of hIOMon and of displaying, in a simple tabular fashion, the real-time automatically-summarized I/O operation performance metrics collected by hIOMon upon an individual device, file, and process basis.
- The **hIOMon PerfLib**, which is a hIOMon “Performance Extension DLL” that enables you to use the Windows Performance Monitor, the Windows System Monitor, and other performance-monitoring applications to collect, display, and further monitor the automatically-summarized I/O operation performance metrics collected by hIOMon upon an individual device, file, and process basis. Note that the hIOMon PerfLib is not installed as part of a “standalone” installation of the hIOMon UI AddOn software package (see below).
- The **hIOMon Disk I/O Ranger Display**, which displays the hIOMon “Performance Threshold Range Metrics” within a user-configurable “Bar Chart” graphic format. It can also be used to perform limited control over the operation of the hIOMon I/O operation monitoring software.

Note that the hIOMon Disk I/O Ranger Display is included/installed only with the “standalone” installation of the hIOMon UI AddOn software package (see below). It is already included within the hIOMon WIOP and WIOPF software packages.

- **Easy and quick to install** – installs within minutes using the standard Windows Installer
- **No application, operating system, file, file system, or device changes are required**

The hIOMon UI AddOn software installation package can be installed alongside an existing hIOMon WIOP or WIOPF installation (i.e., upon a computer that already has the hIOMon WIOP or hIOMon WIOPF software package installed). When installed in this case, the hIOMon UI AddOn enables the hIOMon Disk I/O Ranger Display to optionally connect to a hIOMon Manager that is running upon a separate, remote computer.

The hIOMon UI AddOn software installation package can also be installed “**standalone**” (i.e., upon a computer that does not have a hIOMon WIOP or hIOMon WIOPF software package installed) for remote access to another computer upon when the hIOMon WIOP or hIOMon WIOPF software is installed.

The user-interface software components that are included within the hIOmon UI AddOn software installation package are provided by a “subscription-fee” service from hyperI/O LLC.

1.4 OPERATING SYSTEMS AND ASSOCIATED SOFTWARE

System requirements

Note: See the "Late-breaking news" section for more information on using and configuring the hIOmon UI AddOn software in the Windows 10, Windows 11, Windows Server 2016, Windows Server 2019, and Windows Server 2022 operating system environments.

The hIOmon UI AddOn software has the following minimum system requirements:

- IBM PC (or 100% compatible)
- 10 MB (megabytes) or more of free hard disk space for the hIOmon software components at installation
- Microsoft Windows 10 or 11 (Final Release or above) or Windows Server 2016/2019/2022 (Final Release or above)
- Microsoft Internet Explorer version 10 (Final Release or above)
- Microsoft Visual C++ Runtime Libraries. Note that these libraries are automatically be installed as part of the hIOmon software installation process.
- Pentium® 233 MHz or faster processor
- 512MB or more RAM (Windows 10/11/2016/2019/2022).

2. LATE-BREAKING NEWS

This section contains information that might impact the installation and use of the hIOmon products and services. It also includes a brief description of new features incorporated in the latest version of hIOmon.

2.1 NEW FEATURES

Version 9.7.4667.0 of this hIOmon software is a maintenance release. It provides support for the hIOmon WIOP and WIOPF software packages at the same version 9.7.4667.0 level.

Other recent versions of the hIOmon UI AddOn software introduced hIOmon Browser support for user-specified threshold values associated with the hIOmon “Performance Threshold Range

Metrics” along with support for creating hIOmon Manager Export Files that are generated using the “Tab-Separated-Values (TSV)” file format.

A prior release of this software introduced support for Window Server 2019 and Windows Server 2022. Please note that various software components included with the hIOmon UI AddOn have been previously included with the prior hIOmon IOPM Toolkit software package.

Please be sure to read the “Hints and Issues” section below for additional suggestions about using the hIOmon software.

2.2 KNOWN PROBLEMS

None to report at this time. Please report any problems to hyperI/O LLC (see section 6 for contact information).

3. INSTALLATION

This section contains instructions for installing the hIOmon UI AddOn software under Windows 10, Windows 11, Windows Server 2016, Windows Server 2019, and Windows Server 2022.

NOTE: The hIOmon UI AddOn software components support Windows 10, Windows 11, Windows Server 2016, Windows Server 2019, and Windows Server 2022.

See the "Hints and issues" section to solve issues that might occur when installing the software.

3.1 INSTALLATION NOTES: ALL MICROSOFT WINDOWS PLATFORMS

The hIOmon Installer software makes use of the Microsoft Windows Installer to perform the basic installation of the hIOmon UI AddOn software.

3.2 INSTALLATION INSTRUCTIONS: WINDOWS 10/11/2016/2019/2022

Please note that if the hIOmon UI AddOn software is to be used together with either the hIOmon WIOP or WIOP software upon the same computer, then the hIOmon WIOP (or WIOPF) software must be installed first. The hIOmon UI AddOn software should only be installed **after** the hIOmon WIOP or WIOPF software has already been installed and, if applicable, the associated subscription has been **activated**.

To install the hIOmon software on Windows 10/11/2016/2019/2022:

1. Quit all open programs.
2. When installing the downloaded version of the hIOmon UI AddOn software, either “Run” the hIOmon software installation package file directly or save the package file to a folder upon your computer.

The hIOMon software installation package file for 64-bit systems only is named “hIOMonInstall64.exe”.

Simply run the “hIOMonInstall64.exe” file, which will invoke the Microsoft Windows Installer utility to perform the actual installation of the hIOMon software. When the welcome screen opens, follow the instructions on the screen.

NOTE: To install the software on Windows 10/11/2016/2019/2022, you must log on with administrator privileges. Also note that the hIOMon software installation files are “code-signed” (i.e., digitally-signed), which ensures that these files came from hyperI/O LLC and protects them from alteration after publication by hyperI/O LLC.

3. Follow the instructions on the screen. Please note that you must agree to the hyperI/O “End-User Software License Agreement (EUSLA)” in order for the installation process to proceed.

When you are prompted for a **serial number**, please be sure to correctly enter the serial number that you obtained from hyperI/O LLC:

- When installing the hIOMon UI AddOn to a computer upon which the hIOMon WIOP or hIOMon WIOPF software is currently installed, enter the serial number associated with the respective hIOMon WIOP or hIOMon WIOPF software.
- Otherwise for a “standalone” installation of the hIOMon UI AddOn software, enter the serial number associated with the hIOMon WIOP or hIOMon WIOPF software upon the computer that is to be accessed remotely by the hIOMon UI AddOn software. Please note that the serial number used when installing the hIOMon UI AddOn software does **not** need to be changed if you subsequently access a different computer that is currently running the hIOMon WIOP or hIOMon WIOPF software.

The serial number is incorporated within the hIOMon Product ID (e.g., “4900149” in the hIOMon Product ID “29014-325-4900149-48944”). Note that a serial number value of zero indicates that the associated subscription has not been activated.

4. For a “standalone” installation of the hIOMon UI AddOn software, the Windows Installer installation process will automatically compile/load the hIOMon WMI MOF file (into the computer’s WMI Repository).
5. The Windows Installer installation process will automatically install the hIOMon PerfLib component, which is required for the hIOMon Performance Monitor support. This only applies when the hIOMon UI AddOn software package is installed on a computer upon which the hIOMon WIOP or hIOMon WIOPF software is currently installed.
6. The setup takes a few minutes.

Please check the System Event Log “Application Log” to see the results of the hIOmon software installation process.

The hIOmon UI AddOn software is immediately ready to use after the hIOmon UI AddOn software installation process has completed. This hIOmon software can be used during the subscription-fee time period. It **will no longer be operable** after the end of the subscription-fee time period has been reached.

3.3 Uninstalling the hIOmon software

Use the Windows “Control Panel” to remove the installed hIOmon UI AddOn software. Select “Add/Remove Programs” within the “Control Panel”, then select “hIOmon UI AddOn” within the list box and click on “Remove” to remove/uninstall the hIOmon software.

Please note that if the hIOmon UI AddOn software was installed with either the hIOmon WIOP or WIOP software upon the same computer, then the hIOmon UI AddOn software must be uninstalled **first**, that is, prior to the uninstall of the hIOmon WIOP (or WIOPF) software.

As part of the uninstall process for the “standalone” hIOmon UI AddOn, the Windows Installer will automatically invoke the hIOmon “Service Installation” (hIOmonServiceInstall.exe) program to unload/remove the hIOmon WMI MOF file from the WMI Repository and un-register/unload the hIOmonWMI DLL component (both of which are required to provide the hIOmon WMI Support); this applies only for the “standalone” installation of the hIOmon UI AddOn software package.

When the hIOmon UI AddOn software package has been installed on a computer upon which the hIOmon WIOP or hIOmon WIOPF software is currently installed, the Windows Installer will automatically invoke the hIOmon “Service Installation” program to remove the hIOmon PerfLib component. Please note again that in this case the hIOmon WMI Support will **not** also be removed.

Please check the System Event Log “Application Log” to see the results of this hIOmon Service Installation program invocation.

4. OPERATION

4.1 GETTING STARTED

hIOmon Browser:

To use/run the "hIOmon Browser", simply double-click upon the "hIOmon Browser" desktop icon or use the “Start -> Programs -> hIOmon -> hIOmon Browser” shortcut.

You can also run the hIOmon Browser by simply double-clicking upon the "hIOmonBrowser.hta" file located within the "AddOns\hIOmonBrowser" folder.

To access a remote computer that is running the hIOmon WIOP or hIOmon WIOP software, click on the "File -> Computer" tab in the menu bar at the top of the hIOmon Browser. Enter the required fields and then click on the "Change Selected Computer" button.

Please note that in addition to the security permissions enforced by the specified remote computer (e.g., a required valid user name and associated password), there can also be security permissions enforced by the operating system WMI support present upon the specified remote computer. For example, this WMI support must allow access to the hIOmon MOF/CIM namespace (otherwise the hIOmon Browser attempts to access the hIOmon MOF/CIM namespace on the specified computer will be denied and consequently the hIOmon WMI Browser menu commands and options directed to the specified computer will fail). Please see the Microsoft WMI documentation for information about setting security permissions for access to the WMI namespaces.

The hIOmon Browser provides extensive help information. Simply click on the "?" (question mark) icon present within the menu bar at the top of the hIOmon Browser. Click the Question-Mark Icon (or "explain" link) again to remove the associated help information.

hIOmon CLI:

To use/run the "hIOmon CLI", first open a DOS Command Prompt window and then change directory to the "AddOns\hIOmonCLI" folder. Enter "hIOmonCLI " followed by the desired hIOmon CLI command option. Enter "hIOmonCLI -?" to display all of the available hIOmon CLI commands. Append the hIOmon CLI command option to the "-?" for information about a specific command (e.g., "hIOmonCLI -? mon" for information about the "mon" command option).

To access a remote computer that is running the hIOmon WIOP or hIOmon WIOP software, use the hIOmon "-m" command option. For example, to display information about the hIOmon Manager service running upon the remote computer named "office1", enter "hIOmonCLI -m office1 -q mgr".

hIOmon Performance Monitor Support:

To use the hIOmon Performance Monitor support, simply open the Microsoft Performance Monitor and select the particular hIOmon performance objects of interest along with the specific instances and counters of interest.

Please note that the hIOmon PerfLib supports distinct "hIOmon Current Active File", "hIOmon Current Monitored Device" and "hIOmon Current Monitored Process" performance objects. The presence of instances for each of these performance objects is dependent upon the current hIOmon software configuration and monitored I/O operation activity.

“Sorted-Order” variants of the hIOMon performance objects are also supported; these variants enable instances of the respective performance object type that are provided by the hIOMon PerfLib for retrieval within a selected sort-order sequence. Both the hIOMon CLI and the hIOMon Browser support specifying the particular sort-order options to be used.

hIOMon Disk I/O Ranger Display Support:

When installed upon an existing hIOMon WIOP or WIOPF installation, the hIOMon UI AddOn extends the hIOMon Disk I/O Ranger Display so that it can optionally connect to a hIOMon Manager that is running upon a separate, remote computer. This allows the hIOMon Disk I/O Ranger Display to show in real-time the hIOMon summary I/O operation performance metrics that have been collected upon the remote computer. The hIOMon Disk I/O Ranger Display can also retrieve and display the summary I/O operation performance metrics that are contained in hIOMon Manager Export Files that reside upon the remote computer.

To use the hIOMon Disk I/O Ranger Display that is included with the “standalone” installation of the hIOMon UI AddOn software package, simply click on the “Disk I/O Ranger” desktop icon. The hIOMon Disk I/O Ranger Display provides functionality similar to that provided by the hIOMon WIOP or hIOMon WIOPF software that is installed upon the remote computer to which it is connected.

5. HINTS AND ISSUES

5.1 HINTS

The hIOMon WIOP and the hIOMon WIOPF allow you to take a “**top-down**” approach to analyzing, evaluating, and understanding the actual I/O operation performance of your particular devices, files, and processes/applications/workloads of interest. This approach enables you to empirically view the device and file I/O operation performance of your particular system from an overall perspective, and moreover using your own specific system as you normally do.

5.2 SOFTWARE ISSUES

None to report. Please see the hIOMon web site for any recent announcements.

6. TECHNICAL ASSISTANCE AND SUPPORT INFORMATION

6.1 OBTAINING ADDITIONAL INFORMATION FROM hyperI/O LLC

The hIOMon website provides additional information about hIOMon (including technical assistance and support information). You can also contact hIOMon Technical Support at hIOMonSupportInfo@hyperIO.com.

6.2 OBTAINING INFORMATION VIA THE INTERNET

The hyperI/O LLC website is located at www.hyperIO.com. You can also reach hyperI/O LLC via the hIOmon website (located at www.hIOmon.com).

6.3 ORDERING SOFTWARE

To license additional copies of the software, visit the hIOmon website or contact hyperI/O LLC:

Request by Phone: +1 303.415.2044

Request by Mail: hyperI/O LLC
4450 Arapahoe Avenue, Suite 100
Boulder, Colorado 80303-9102 USA

7. LEGAL STATEMENTS

7.1 TRADEMARK NOTICES

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7.2 LEGAL NOTICE

Information provided in this document and the software called the “hIOmon User-Interface (UI) AddOn”, the “hIOmon Workload I/O Profiler (WIOP)”, and the “hIOmon Workload I/O Profiler Files (WIOPF)” are provided “as is”. No implied warranties of merchantability and or fitness for a particular purpose are given.

Please read the hyperI/O LLC Software License Agreement (license.pdf) for the conditions and terms associated with the use of the hIOmon software product from hyperI/O LLC.

7.3 COPYRIGHT

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