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hyperI/O LLC

**hIOmon™**

REST API

Version 9.7.4667.0 (February 2024)

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\*\*\*\* hIOmon REST API ReadMe File \*\*\*\*

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### NOTICE !

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

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**1. INTRODUCTION**

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**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 “Representational State Transfer (REST) Application Programming Interface (API)” and the associated web server service 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 REST API from hyperI/O LLC. The EUSLA is contained in the “hIOMonLicense.pdf” document file. This file can be found within the “wwwroot\Documents” folder located where the hIOMon REST API software was installed. It can also be accessed via a web browser directed to the following URL presented to the hIOMon REST API web service: <http://...../Documents/hIOMonLicense.pdf>

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 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 REST API” software provides a REST API interface with a web service component. This web service component runs as a Microsoft Windows service.

The hIOMon REST API can be used to retrieve information about the hIOMon software (e.g., the

current hIOMon Manager status, the status of the active hIOMon ETW I/O Monitor, and usage information for both the hIOMon Manager and hIOMon ETW I/O Monitor). It can also be used to perform limited control over the operation of the hIOMon I/O operation monitoring software, including the configuration of the various hIOMon software components.

In addition, the hIOMon REST API can retrieve a robust set of I/O operation performance metrics that have been collected and automatically summarized by the hIOMon ETW I/O Monitor software, including in real-time and from a hIOMon Manager Export File.

## Features

The hIOMon REST API software installation package includes and features the following:

- The **hIOMon REST API Web Service**, which runs as a Windows service. This service obtains the requested hIOMon information and automatically summarized I/O operation performance metrics from the associated hIOMon Manager, which is active on the same computer upon which the hIOMon REST API Web Service is installed.
- The hIOMon REST API interface enables the retrieval of the unique hIOMon “**Performance Threshold Range Metrics**” and the hIOMon “**Data Transfer Size (DTS) Metrics**”, which have been collected and automatically summarized by hIOMon upon an individual device, file and/or process basis. Moreover, the retrieval can be based upon a user-specified sorted order.
- Supports the retrieval of **real-time** summary I/O operation performance metrics
- Also supports the retrieval of **historical** summary I/O operation performance metrics that have been exported/saved to CSV or TSV formatted hIOMon Manager Export Files
- Supports **coalescing** hIOMon Manager Export Files, with an extensive variety of coalesce options (coalescing upon a daily, weekly, monthly, quarterly, and yearly basis)
- The summary I/O operation performance metrics can be retrieved within a **JSON** format.
- Supports the **hIOMon Disk I/O Ranger Display**, which displays the hIOMon “Performance Threshold Range and DTS Metrics” within a user-configurable “Bar Chart” format as well as a graphical format. Both real-time and historical summary I/O operation performance metrics (i.e., from hIOMon Manager Export Files) can be retrieved and displayed by the hIOMon Disk I/O Ranger Display.

The hIOMon REST API web service supports the hIOMon Disk I/O Ranger Display application, which runs as a Microsoft Windows HTML Application (HTA) and is included within the hIOMon WIOP and hIOMon WIOPF software packages. It also supports the “**On-The-Web (OTW)**” version of the hIOMon Disk I/O Ranger Display that is included within the hIOMon REST API software package. The OTW version is “online/Internet

based”; it effectively enables you to connect to the hIOmon REST API web service in a secure fashion and use the hIOmon Disk I/O Ranger Display software within a supported Web Browser.

- Supports the **configuration** of various hIOmon software components (e.g., hIOmon Filter Selections, hIOmon Manager Export Files, and the hIOmon Manager operation along with hIOmon ETW I/O Monitor operation)
- Supports the submission of hIOmon summary I/O operation performance metrics to a Microsoft **Azure Log Analytics Workspace**
- Utilizes the latest Microsoft **.NET 8.0** high-performance framework for building modern, cloud-based, Internet-connected applications
- Supports a **HTTPS/SSL** option that enables the secure, encrypted transfer of data between the hIOmon REST API Web Service and the client (e.g., web browser)
- **JSON Web Token (JWT)** support for generating and using JWT authorization tokens (including hIOmon Disk I/O Ranger Display support for using JWT tokens)
- **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 REST API software installation package is installed alongside an existing hIOmon “Workload I/O Profiler (WIOP)” or hIOmon “Workload I/O Profiler for Files (WIOPF)” installation (i.e., upon a computer that already has the hIOmon WIOP or hIOmon WIOPF software package installed).

The hIOmon REST API software is provided as 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 REST API software in the supported Windows operating system environments.

The hIOmon REST API software has the following minimum system requirements:

- IBM PC (or 100% compatible)
- 170 MB (megabytes) or more of free hard disk space for the hIOmon software components at installation

- Microsoft .NET 8.0, which is included within the hIOMon REST API software installation package
- Microsoft Windows operating systems currently supported by the Microsoft .Net 8.0 version, including Windows Server 2016, Windows Server 2019, and Windows Server 2022 (Final Release or above); note that only the **64-bit** version of these operating systems is supported.
- Microsoft Visual C++ Runtime Libraries. Note that these libraries are automatically installed as part of the hIOMon software installation process.
- Pentium® 233 MHz or faster processor
- 512MB or more RAM

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## **2. LATE-BREAKING NEWS**

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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 the hIOMon REST API software supports Version 9.7.4667.0 of the hIOMon WIOP and WIOPF software packages. It also supports the retrieval/extraction of user-selected summary I/O operation performance metrics directly from a hIOMon Manager Export File.

This version continues support for Microsoft .NET 8.0.

Prior versions introduced support for using the hIOMon Client Communication software to communicate with the hIOMon Manager (rather than using WinRM and the hIOMon WMI Support). Communication with the hIOMon Manager is required to retrieve the hIOMon I/O operation performance metrics and to modify the hIOMon software configuration.

As with the prior versions, this version includes the “hIOMon REST API Class Library” that provides extensive, detailed descriptions of the hIOMon REST API.

### **2.2 KNOWN PROBLEMS**

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

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### 3. INSTALLATION

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This section contains instructions for installing the hIOMon REST API software under the supported Windows operating system versions.

NOTE: The hIOMon REST API software components support only the 64-bit version of these operating systems.

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 REST API software.

#### 3.2 INSTALLATION INSTRUCTIONS

Please note that the hIOMon REST API software should only be installed **after** the hIOMon WIOP or WIOPF software has already been installed.

To install the hIOMon software:

1. Quit all open programs.
2. When installing the downloaded version of the hIOMon REST API 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 operating systems is named “hIOMonRESTapiInstall64.exe”.

Simply run the “hIOMonRESTapiInstall64.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, 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)” for the installation process to proceed.

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

4. The Windows Installer installation process provides a “Custom Installation Option” to enable the Windows Installer installation process to automatically run the “Install-hIOmonRESTAPIService.ps1” PowerShell script file as part of the installation process. This is a **recommended** option (and so is enabled by default).

If you decide not to enable this installation option, then you must manually run the “Install-hIOmonRESTAPIService.ps1” PowerShell script file after the Windows Installer installation process has completed.

The “Install-hIOmonRESTAPIService.ps1” PowerShell script file:

- Unzips the hIOmon REST API web service files.
- Installs the hIOmon REST API web service as a Windows service.
- Generates a “hosting.json” file. This file specifies the URL (i.e., IP address(es) and Port, e.g., <http://xxx.xxx.x.x:pppp>) that the installed hIOmon REST API web service is to service. See the “appExtendedSettingsHelpInformation.txt” file (located within the folder where the hIOmon REST API software was installed) for the default port used by the hIOmon REST API web service.
- Sets the hIOmon Manager’s maximum buffer size for messages transferred between the hIOmon Manager and the hIOmon WMI support to 4 MiB.
- Enables “hIOmonRESTAPI” as a source for the Application Event Log
- Starts the hIOmon REST API web service.
- Unzips the “hIOmon REST API Class Library” documentation files.

The second “Custom Installation Option” enables the Windows Installer installation process to automatically run the “Set-hIOmonRESTapiFirewallRule.ps1” PowerShell script file as part of the installation process. This is also a **recommended** option (and so is enabled by default).

The “Set-hIOmonRESTapiFirewallRule.ps1” PowerShell script file adds a Windows Firewall rule for the hIOmon REST API Web Service. If you decide not to enable this second installation option, then you must manually run this PowerShell script file after the Windows Installer installation process has completed.

5. The setup takes a few minutes.

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

6. **Activation** of the subscription-fee time period. The hIOmon REST API software is immediately ready to use after the software installation process has completed. A “temporary licensing period” is established when the hIOmon REST API software is

installed. This period is seven (7) days in length; it begins upon the date that the hIOmon REST API software is installed. The expiration date of this period is the day following the last day of the temporary licensing period. The hIOmon REST API software **will no longer be operable** when this expiration date is reached.

This temporary expiration date can be removed, and the full subscription-fee time period instated by the activation of a "hIOmon Extension Key". The requisite "hIOmon Extension Key" must be obtained from hyperI/O LLC and then activated during the temporary licensing period (i.e., before the temporary expiration date is reached).

A "hIOmon Extension Key" is a specific software character-string value generated by hyperI/O LLC based upon the particular hIOmon Product ID and installation date of the installed hIOmon REST API software package. When activated, the proper hIOmon Extension Key will remove the temporary licensing period and advance the expiration date in accordance with the actual hIOmon REST API software installation date and the time period purchased by the subscription fee (e.g., 30 days from the date when the hIOmon REST API software was installed).

Both the hIOmon Product ID and the actual hIOmon REST API software installation date must be provided to hyperI/O LLC when obtaining a hIOmon Extension Key; these are required so that the proper key value can be generated. Use the GET method with ".../SettingshIOmonRESTapi" to retrieve the hIOmon Product ID, software installation date, and current expiration date for the installed hIOmon REST API software.

Note that the hIOmon REST API software will verify the installation date used to generate a hIOmon Extension Key when you attempt to activate the key (i.e., the actual installation date is not verified when the hIOmon Extension Key is generated).

Use the PATCH method with ".../SettingshIOmonRESTapi" to activate a hIOmon Extension Key. You can also use the "Activate Key" function provided by the hIOmon Disk I/O Ranger Display.

### **3.3 Uninstalling the hIOmon software**

Use the Windows "Control Panel" to remove the installed hIOmon REST API software. Select "Add/Remove Programs" within the "Control Panel", then select "hIOmon REST API" within the list box and click on "Remove" to remove/uninstall the hIOmon software.

As part of the uninstall process for the hIOmon REST API, the Windows Installer will automatically invoke the hIOmon "Service Installation" (hIOmonServiceInstall.exe) program to run the "Uninstall-hIOmonRESTAPIService.ps1" PowerShell script file. This script file will:

- Remove the hIOmon REST API web service as a Windows Service
- Remove "hIOmonRESTAPI" as a source for the Application Event Log
- Remove the Windows Firewall rule for the hIOmon REST API Web Service
- Delete all of files located within the "hIOmonRESTapi" folder where the hIOmon REST



API software was installed

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

Please note that the hIOmon REST API software should be uninstalled **before** the hIOmon WIOP or WIOPF software is uninstalled.

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## **4. OPERATION**

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### **4.1 GETTING STARTED**

#### **Swagger and the Swagger UI (SwashBuckle User Interface):**

The hIOmon REST API software package includes Swagger support. Swagger can generate the “swagger.json” file that provides machine and human readable documentation for the hIOmon REST API.

In addition, the SwashBuckle UI provides an interactive GUI for describing and executing the hIOmon REST API.

The SwashBuckle can be accessed by going to the following URL using a web browser:

<http://xxx.xxx.xx.xx:pppp/hIOmonRESTapi-docs/index.html>

where “xxx.xxx.xx.xx” is an IP address being serviced by the hIOmon REST API web service, and “pppp” is the associated port number. See the “appExtendedSettingsHelpInformation.txt” file (located within the folder where the hIOmon REST API software was installed) for the default port used by the hIOmon REST API web service.

#### **Documentation:**

As mentioned above, the Swagger UI (SwashBuckle) provides interactive documentation of the hIOmon REST API.

The “hIOmon REST API Class Library” web pages provide additional detailed documentation about the hIOmon REST API, including descriptions of the hIOmon REST API HTML methods. This information can be accessed directly using the hIOmon REST API web service:

<http://xxx.xxx.xx.xx:pppp/Documents/index.html>

## Configuration:

The hIOMon REST API software provides several configuration options. These configuration options are primarily contained within the “appExtendedSettings.json” file, which is located within the “.../hIOMonRESTapi” folder where the hIOMon REST API software was installed.

The configuration options include:

- Separate options to allow or disallow the ability to perform POST, PUT, PATCH, and DELETE html methods using the hIOMon REST API web service. By default, the options are set to allow.
- Separate options to allow or disallow the ability to perform GET html methods to retrieve the various automatically summarized I/O operation performance metrics collected by the hIOMon software and GET html methods to retrieve information about various hIOMon software components. By default, the options are set to allow.

Also included are options to allow or disallow the ability to retrieve the contents of hIOMon Manager Export Files and whether a permission code is required along with the GET html method request to retrieve the content of hIOMon Manager Export Files. By default, the option for retrieval is set to allow.

- An option to enable or disable HTTPS SSL support within the hIOMon REST API web service. By default, this option is set to disable. Also see the “HTTPS SSL Support” section below.
- Options to enable and configure the use of JSON Web Token (JWT) authorization tokens. JWT support is enabled by specifying a “secret” string value that must be at least 16 characters in length; this string value is used to sign the tokens. By default, the JWT support is not enabled. The JWT configuration options are under the “JWTTokenOptions” key within the configuration file.

An option is also provided to specify the duration before the JWT token created by the hIOMon REST API web service expires.

An additional option enables you to specify a password that must be provided by users requesting a token. This password string will apply to all users unless a “permitted users” configuration file (named “hIOMonRESTAPIJWTpermittedUsers.json”) is used. This file enables you to limit JWT tokens to specific users and associated passwords; simply rename the “hIOMonRESTAPIJWTpermittedUsersTemplate.json” file and enter the user names and associated email address and password for those users permitted to request a token. An option is also provided to indicate that the content within this file is in Unicode character format.

A token can be requested by issuing a POST request with a body containing in JSON format the user name, e-mail address, and password to:

/hIOMonRESTapi/v1/SettingshIOMonRESTAPI/JWTToken

- An option to enable or disable the hIOMon REST API web service support for the “On-The-Web (OTW)” version of the hIOMon Disk I/O Ranger Display; see the “hIOMon Disk I/O Ranger Display Support” section below. By default, this option is set to disable. Please note that the CORS support option (described below) should also be enabled when this option is enabled to avoid network transport endpoint errors encountered by the hIOMon Disk I/O Ranger Display OTW.

An option is also provided to allow or disallow requests by the hIOMon Disk I/O Ranger Display OTW to be performed that control the operation of the hIOMon I/O operation monitoring software (such as modifying and loading hIOMon Filter Selections). Such requests are provided by the hIOMon Disk I/O Ranger Display software version that is included, for example, within the hIOMon WIOPF software package. By default, this option is set to disallow.

An additional option is provided to indicate whether the contents of the hIOMon Disk I/O Ranger Display OTW “permitted user” configuration file is composed of Unicode characters. By default, this option is set to false.

An option is also provided to indicate whether user sign-ins are to be logged to the “hIOMonDIOROTWusers.json” file. By default, this option is set to true/enabled.

- An option to enable or disable the hIOMon REST API web site Cross-Origin Resource Sharing (**CORS**) support. All cross-origin requests are allowed when enabled. This option must be set to enable to allow the use of the hIOMon Disk I/O Ranger Display OTW. By default, this option is set to disable.
- An option to enable or disable the Swagger support provided by the hIOMon REST API web service. By default, the option is set to allow.
- An option to enable or disable hIOMon REST API support for submitting hIOMon summary I/O operation performance metrics to an Azure Log Analytics Workspace. By default, the option is set to false/disabled.

Also included is an option to require a permission code when performing a hIOMon REST API request to start, for example, the submission of hIOMon summary I/O operation performance metrics to an Azure Log Analytics Workspace. See the “Azure Log Analytics Workspace Support” section below for additional details.

Note that these configuration options can only be changed by directly modifying the “appExtendedSettings.json” file. The hIOMon REST API can be used to activate a hIOMon REST API Extension Key, which is also included (along with the hIOMon REST API Product ID) within the configuration file.

The expiration date of the hIOMon REST API software can be extended by activating a hIOMon REST API Extension Key, which can be purchased at the hIOMon web site.

See the “**appExtendedSettingsHelpInformation.txt**” file (located within the folder where the hIOMon REST API software was installed) for additional information about the various hIOMon REST API web service configuration options.

## HTTPS SSL Support:

By default, the hIOMon REST API web service provides http support. HTTPS SSL support can be enabled by:

- Setting the “UseSSL” option to true within the “appExtendedSettings.json” file
- Modifying the “hosting.json” file (located within the same file) to specify <https://...> instead of <http://...> for the IP address(es) along with the respective SSL port number
- Modifying the Windows Firewall rule for the hIOMon REST API Web Service to specify the SSL port number
- Restarting the hIOMon REST API web service after the changes above have been made

Note that this HTTPS support requires that a proper SSL certificate has been installed.

## hIOMon Disk I/O Ranger Display Support:

The hIOMon Disk I/O Ranger Display application software that is installed as part of the hIOMon WIOP and hIOMon WIOPF software packages and which supports remote computer connection using the hIOMon REST API can be used together with the hIOMon REST API web service. This allows the hIOMon Disk I/O Ranger Display application to show the hIOMon I/O operation performance metrics (including real-time metrics) that have been collected upon the remote computer and to retrieve these metrics using the hIOMon REST API.

Historical summary I/O operation performance metrics (i.e., from hIOMon Manager Export Files) can be retrieved from the remote computer using the hIOMon REST API and then displayed by the hIOMon Disk I/O Ranger Display.

In addition, the “On-The-Web (OTW)” version of the hIOMon Disk I/O Ranger Display software is included in the hIOMon REST API software package. This OTW version runs within a supported Web Browser and can be accessed at the web site made available by the hIOMon REST API web service. Supported Web Browsers include the latest version of Internet Explorer, Microsoft Edge, Firefox, Chrome, and Safari.

The specific URL for the hIOMon Disk I/O Ranger OTW includes “/hIOMonOnTheWeb/hIOMonDiskIORanger/hIOMonDiskIORangerOTW.html”; for example (where “x.x.x.x” is the IP address and “pppp” is the port number):

<http://x.x.x.x:pppp/hIOMonOnTheWeb/hIOMonDiskIORanger/hIOMonDiskIORangerOTW.html>

The hIOMon DIOR Display OTW can be accessed using either HTTP or HTTPS as configured by the administrator of the hIOMon REST API web site (see the “HTTPS SSL Support” section above). See the hIOMon Disk I/O Ranger Display help information for how to specify a web site address (i.e., a remote computer) using the hIOMon REST API and HTTPS.

Note that by default access to the hIOMon Disk I/O Ranger Display OTW is **not** enabled. To

enable access, within the “appExtendedSettings.json” file set the “AllowUsage” option (under the “DIOROTWsupport” key) to true and set the “UseCORS” configuration option to true.

A “Session Sign-In” pop-up window is immediately shown upon access. The session (i.e., a period reflecting the use of the hIOMon Disk I/O Ranger Display OTW) begins after the user has successfully performed a “session sign-in”. The “Settings” button and the “Trender Display” button located at the bottom of the “hIOMon Disk I/O Ranger” display window will both be enabled once the user has successfully signed-in.

A “Session Sign-In” requires that the user enter their name, email address, and optionally an access code (i.e., passcode). If enabled, the “hIOMonDIOROTWusers.json” file is used to record individual user sign-ins.

A “Session Sign-Out” pop-up window will appear to notify the user that their session has ended. It will be displayed when the user closes the hIOMon Disk I/O Ranger Display OTW web browser window. Note that for some browsers (e.g., Firefox, Edge, and Safari) a “Close” button will appear to the right of the “Trender Display” button upon the main display window. Click on this “Close” button before exiting the hIOMon Disk I/O Ranger Display.

You can explicitly limit access to the hIOMon Disk I/O Ranger Display OTW to specific users. Simply rename the “hIOMonDIOROTWpermittedUsersTemplate.json” file to “hIOMonDIOROTWpermittedUsers” and enter the usernames and associated email address for those users permitted to access the hIOMon Disk I/O Ranger Display OTW software. You can also optionally specify an access code that must be entered by the user during the Session Sign-In.

Set the “UnicodeUserConfigFiles” option under the “DIOROTWsupport” key within the “appExtendedSettings.json” file to true to indicate that the “hIOMonDIOROTWpermittedUsers.json” and “hIOMonDIOROTWusers.json” files are in Unicode format.

For additional information, see the hIOMon Disk I/O Ranger OTW help information at:

<http://x.x.x.x:pppp/hIOMonOnTheWeb/hIOMonDiskIORanger/DIOROTWhelp.htm>

### **hIOMon Support for Azure Log Analytics Workspaces:**

hIOMon summary I/O operation performance metrics can be submitted directly to a specified Azure Log Analysis Workspace. The metrics can be submitted periodically at a user-specified interval (including an optional starting date/time and ending date/time).

You can select the particular hIOMon summary I/O operation performance metrics that are to be submitted. These include any of the hIOMon “Performance Threshold Range Metrics” and the hIOMon “Data Transfer Size” metrics. In addition, specific monitored items (e.g., monitored device) can be explicitly included or excluded.

Issue a GET request to the following URL to obtain the names of all hIOMon summary I/O

operation performance metrics that can be submitted to an Azure Log Analytics Workspace:

.../hIOmonRESTapi/v1/SettingshIOmonSupportMSAzureLAWorkspace/SubmittableMetricNames

Note that the hIOmon summary I/O operation performance metrics available for submission to an Azure Log Analytics Workspace include all metrics provided by the “ReadWriteFull” hIOmon REST API GET method.

Configuration parameters related to the submission operation (e.g., the particular metrics to be submitted) can be provided within the HTML request body or by a parameter file. See the “**hIOmonAzureLAWorkspaceMetricsParameterFileHelpInformation.txt**” file (located within the folder where the hIOmon REST API software was installed) for additional information about the various configuration options with a parameter file.

See the “hIOmonRESTapi.html” file (q.v., the “Documentation” section above) for additional detailed documentation about the hIOmon REST API support for Azure Log Analytics Workspaces.

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## **5. HINTS AND ISSUES**

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### **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.

The hIOmon REST API provides a simple, quick, and easy-to-use way to access these I/O operation performance metrics.

### **5.2 SOFTWARE ISSUES**

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

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## **6. TECHNICAL ASSISTANCE AND SUPPORT INFORMATION**

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### **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](http://www.hyperIO.com). You can also reach hyperI/O LLC via the hIOmon website (located at [www.hIOmon.com](http://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

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## 7. LEGAL STATEMENTS

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### 7.1 TRADEMARK NOTICES

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****                               End of hIOmon REST API ReadMe          ****  
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