

Hach WIMS Direct Server-Side Interface to OPC HDA

Q12260 Documentation



Be Right™

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1 - Documentation : Introduction

1.1 Interface Introduction

The **Hach WIMS Direct Server-Side Interface to OPC HDA** imports summarized values into Hach WIMS from a standard OPC HDA Server (see <http://www.OPCFoundation.org> for more information about OPC HDA).

This interface can be used with EMERSON Process Management, Delta V SCADA system with an OPC HDA Server. Historically, we have had to install the interface on the Delta V system and push data to the Hach WIMS client using either Microsoft or Oracle OLEDB connection. More information about Delta V Systems can be found at <http://www2.EmersonProcess.com>.

This Interface can be used with ICONICS, TrendWorX (which is an OPC HDA Server) with one exception: TrendWorX does not allow OPC HDA Item browsing with the WtHDAClient.dll that the Interface uses (see article 12279(See Section 5.2)). Instead, the first Tag is repeated over and over if you try to browse the Tags. The Interface will still work, you just won't be able to use the Tag Browser in Hach WIMS Client. To get around this issue a new utility was created, TWX2OPSXML. This utility reads in an ICONICS TrendWorX Data Logger XML Configuration file and exports an OPSDATAXML file that can be used by the browser (see article 12281(See Section 5.7)).

[Reference ID: 12268]

1.2 Software Requirements

The Interface and its components are supported and can be installed **only** on one of the following Microsoft Windows versions :

- Microsoft Windows 2000 Service Pack 4
- Microsoft Windows XP 32-bit Service Pack 2
- Microsoft Windows XP 32-bit Service Pack 3
- Microsoft Windows Vista 32-bit
- Microsoft Windows Vista 64-bit
- Microsoft Windows Vista 32-bit Service Pack 1
- Microsoft Windows Vista 64-bit Service Pack 1
- Microsoft Windows Vista 32-bit Service Pack 2
- Microsoft Windows Vista 64-bit Service Pack 2
- Microsoft Windows 7 32-bit
- Microsoft Windows 7 64-bit
- Microsoft Windows 7 64-bit Service Pack 1
- Microsoft Windows 2003 Server 32-bit Service Pack 1
- Microsoft Windows 2003 R2 Server 32-bit Service Pack 2

- Microsoft Windows 2003 Server 64-bit Service Pack 1
- Microsoft Windows 2003 R2 Server 64-bit Service Pack 2
- Microsoft Windows 2008 32-bit
- Microsoft Windows 2008 64-bit
- Microsoft Windows 2008 32-bit Service Pack 1
- Microsoft Windows 2008 64-bit Service Pack 1
- Microsoft Windows 2008 32-bit Service Pack 2
- Microsoft Windows 2008 64-bit Service Pack 2
- Microsoft Windows 2008 R2 64-bit
- Microsoft Windows 8 64-bit
- Microsoft Windows 2012 64-bit

[Reference ID: 12142]

1.3 Software Requirements Specific to Q12260

This interface has unique system requirements in order to run correctly. Whenever possible, it is best to install this interface on the same computer where the OPC Historian (OPC HDA) is running. Please note the following.

The interface has WtHDAClient.dll library included with it, this dynamic linked library should be located in the same folder as the application. The Interface uses the WtHDAClient.dll to communicate with an OPC HDA Server.

In order for this interface to run, OPCENUM must be running as a service and OPCDAAUTO.DLL must be properly installed. Both OPC components can be downloaded from the OPC Core Components at the OPC

Foundation: <http://www.opcfoundation.org/SiteMap.aspx?MID=Downloads>. Click on the **Redistributables** link. You must have a user login with the foundation to download files.

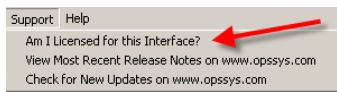
[Reference ID: 12915]

2 - Documentation : How To

2.1 _ Step-by-Step Instructions on How to Configure Interface

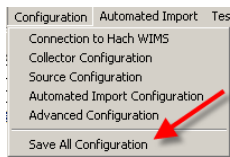
You will need to follow these steps in order to configure your interface :

1. You must have **Hach WIMS Database Management System** installed and running. This can be running from anywhere on your network, but can also be running on the same computer as your interface.
2. You must have **Hach WIMS Client** installed. Make sure you can log into Hach WIMS Database Server using Hach WIMS Client.
3. Run your interface in Interactive mode by clicking on its entry in your windows Start Menu.
4. Configure a connection to your Hach WIMS Server. Use **Configuration - Connection to Hach WIMS**(See Section 3.12) to do this.
5. Make sure you are properly licensed to run this interface. In Main Menu, select **Support -> Am I licensed for this Interface.**



If you pass this test, continue to step 6. If not, contact Hach Company Sales at 800-677-0067.

6. Upload interface definition file to Hach WIMS Server. Use **Utilities - Upload definition file to Hach WIMS**(See Section 3.19) to do this.
7. You will need to assign a collector record to your interface. First the record must be created. You will need to configure **Hach WIMS Client for a server side interface**(See Section 2.4) .
8. Now you are ready to assign the collector record created in *the previous step* to your interface. Use **Configuration - Collector Configuration**(See Section 3.11) to do this.
9. You need to link at least one Hach WIMS variable to the chosen collector record.
10. Configure the source so that interface can read from the source system.
Locate the '**Configuration -> Source Configuration**' article in the '**Topics specific for operation of Interface**' chapter to gain instructions on how to do it.
11. Save all configuration Settings by clicking on **Configuration -> Save All Configuration**.



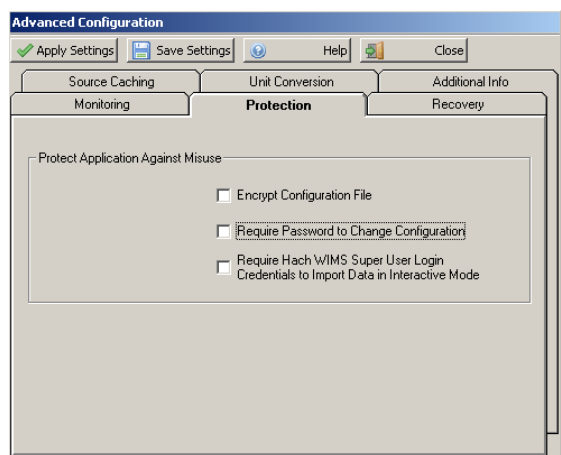
12. You are now ready to test the interface. Use **Test - Test Import All**(See Section 3.18) to do this

Furthermore, You may want to configure **Automated Import**. Use **Configuration - Automated Import Configuration**(See Section 3.10) to do this.

2.2 Change Configuration Protection Password

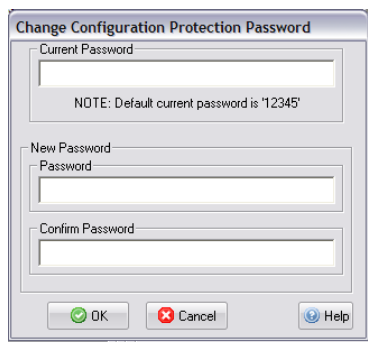
Requiring a password for configuration changes will prevent unauthorized or accidental tampering with your configuration from within the interactive mode.

From the interface, select **Configuration** and **Advanced Configuration**. Click on the **Protection** tab.



Click on the box next to **Require Password to Change Configuration** and **Save Settings** button.

Use this screen to set a new configuration protection password.



NOTE: The default password is '12345'. If you configure the interface to use a password and later remove the password check, it will reset to '12345' again.

2.3 Configuration is Password Protected

The configuration is password protected if you changed it in **Change Configuration Protection Password**(See Section 2.2) . You must enter the correct password in order to save any changes to the configuration of this interface.



See Advanced Configuration(See Section 3.5) if you want to disable the password protection.

NOTE:

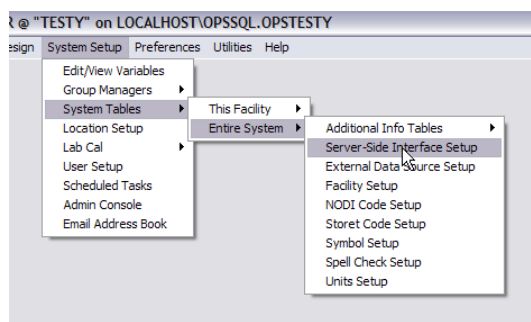
If your configuration is protected with a password, you must know the password before you can disable the password check.

[Reference ID: 12056]

2.4 Configure the Hach WIMS Client for a Server-Side Interface (SCADA2OPSSQL)

In order to use a **Hach WIMS Server-Side Interface**, you must do the following:

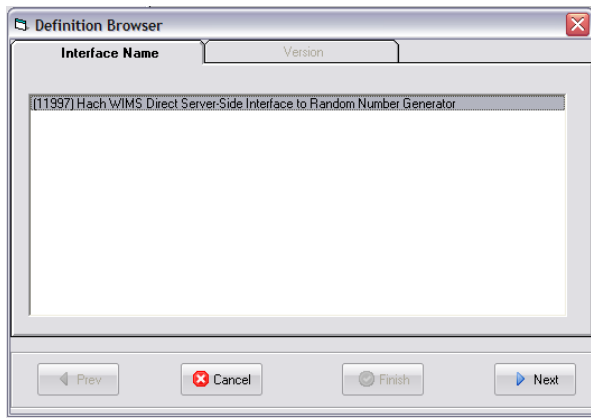
1. Start your **Hach WIMS Client** and navigate to the **System Setup -> System Tables -> Entire System -> Server-Side Interface Setup** menu selection:



2. If the "Server-Side Interface Setup" screen shows no interfaces, or the one you want to configure is not shown, you have to:
 - ◆ Is the interface definition file uploaded? Click the **New** button to determine if the definition file is uploaded, and see if it appears in the list of interfaces. If it is there, continue to step 3.
 - ◆ If the definition file is not uploaded, click the **New Definition** button and navigate to the g2_server_lu file located where the interface is installed. (Alternatively, you can select **Utilities - Upload Definition File to**

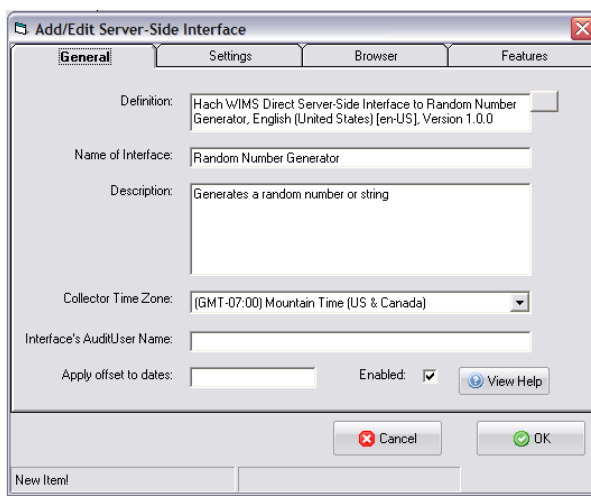
Hach WIMS(See Section 3.19))

- With the definition uploaded (or present), click the **New** button and create an instance of the server side interface. You can have multiple interface sources for the same definition.



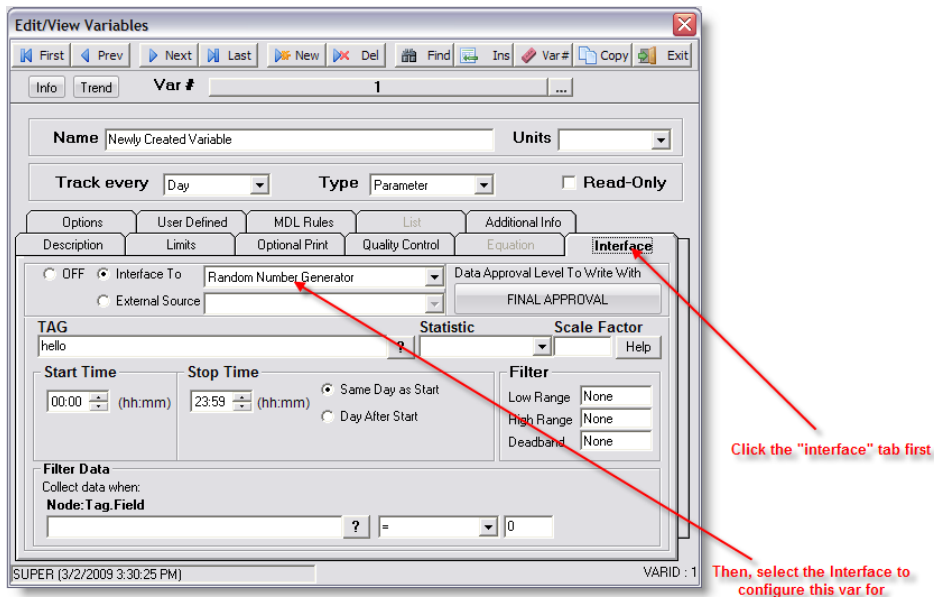
In this example, we are using the Random Number Generator interface. Select the name of your interface, click **Next**, and select the version.

- Configure the interface:



Make note of the "Name of Interface" field - this is how your interface will be identified. In this case - it is "Random Number Generator". Fill in a "Description" and select the "Collector Time Zone", in this case, it is set to Mountain Time (US & Canada). Click **OK** to create the interface record.

- Configure Browser - Click on the **Browser** tab and enter the requested information to allow the **Hach WIMS Client** the ability to browse tags from the source system. In some cases, you will need to install an OLE DB driver, on the Hach WIMS Client computer, that will allow communications to the source system. If it is impossible to configure this option, or you wish to do this later - uncheck the **Enable** button on the **Browser** tab.
- Go to **System Setup -> Edit/View Variables**.
- Go to the variable you wish to configure for storing interface data:



Click the **Interface** tab on the variable you are configuring, then click the **Interface To** radio button and select the interface needed for this variable. The area below will fill up with the settings needed to finish configuring this variable.

8. For detailed instructions on configuration of variables, look for the '**Supported Variable Configurations For Interface ...**' article in the '**Topics specific to the operation of this Interface**' chapter.

[Reference ID: 12041]

2.5 Hach WIMS Super User Credentials

To enable this feature, select **Configuration -> Advanced Configuration**(See Section 3.5) . Then check the "**Require Hach WIMS Super User Login Credentials to Import Data In Interactive Mode**" setting.

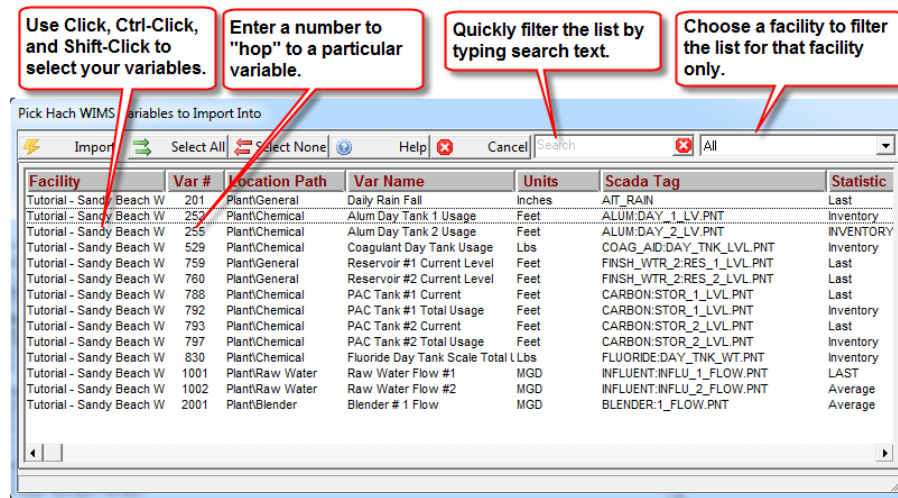
You must provide the correct user name and password in order to import data in interactive mode.

Contact your Hach WIMS Administrator for help if you do not know the username and/or password.

[Reference ID: 12057]

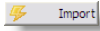
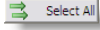
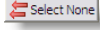
2.6 Pick Hach WIMS Variables to Import Into

Only variables assigned to this interface will be listed. Select the variables to import data into from the source.



HINT: You can hold the CTRL or CTRL/SHIFT buttons down when clicking in order to select multiple entries

Buttons:

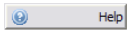
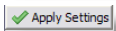
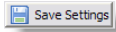


-  Import Import data for the selected variables.
-  Select All Select all variables in the list.
-  Select None Select no variables - deselects all variables from the list.

All other buttons are explained in Using Common Buttons(See Section 2.7) .

[Reference ID: 12059]

2.7 Using Common Buttons

Common Hach WIMS Interface Buttons:

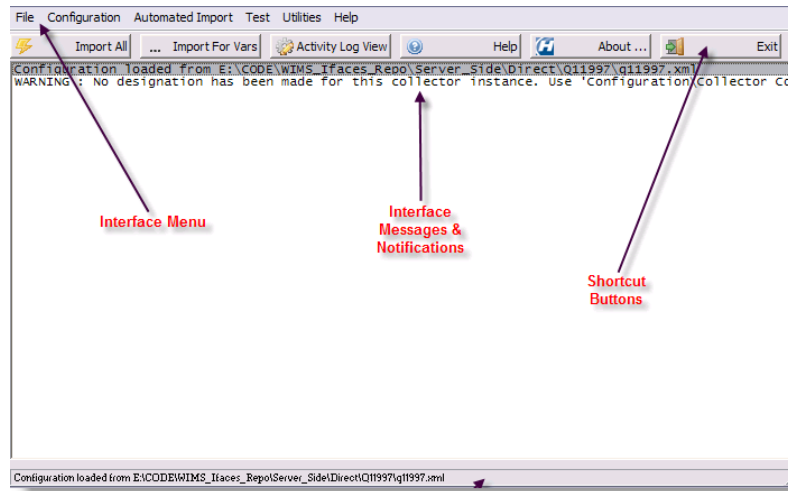
-  Help Displays help for the current interface screen.
-  Apply Settings Applies the current settings.
-  Save Settings Attempts to apply the current changes and save them permanently. The save will fail if the settings cannot be applied first.
-  Close Closes the current window - no changes are saved.
-  Cancel Cancel the current activity/operation.

[Reference ID: 12039]

2.8 Using Main Interface Screen

This is the main interface interactive screen.

When running in interactive mode, you can set the various interface configuration settings, monitor & control the interface service, as well as interactively collect data.



The main parts of the of the screen of interest are:

- **Main Menu**
- **The Shortcut Buttons:**

	Import All	Import all data(See Section 3.14) .
	Import For Vars	Import data for selected variables(See Section 3.15) .
	Activity Log View	Monitor service activity(See Section 3.1) .
	Help	Display help for the current window.
	About ...	Display general interface information.
	Exit	Exit the interactive interface session.

- The **Interface Messages & Notification** area - the white background area displays scrolling text regarding the interface's activity. All manner of data is logged here, including data collection status, errors, warnings and other general information regarding the interface's current activity.

Depending on the **Verbosity**(See Section 3.5) level set, you may or may not see all information.

If there is a directory called "Log" in the interface directory, the interface will also log to a text file of the form:

<mm_dd_yyyy__hh_mm_ss_interactive.log>

E.g., if the current date is 2/26/2009 and the current time is 3:02:13 PM, the file will be called:

02_26_2009__15_02_13_interactive.log.

- The status bar, at the bottom of the screen, displays miscellaneous information regarding the interface.

[Reference ID: 12036]

2.9 Using Select Date Range to Import

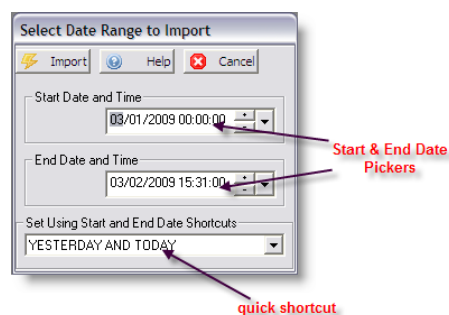
When importing data for one or more specified variables, you have to specify the date range of the source data you want to get.

You can do this in 2 ways:


1. Use both the **Start & End Date Pickers**

- OR -

2. Use a start/end date **quick shortcut**:



Buttons:

 Import data for the selected dates

Other buttons are described in **Using Common Buttons**(See Section 2.7) .

Principle 1: Data will be imported based on the **Start and End Date and Time** and how the variable's **Stop Time** is set up. The **Stop Time** must fall within the date range requested.

Principle 2: Data is stored on the date and time of the variable's **Start Time**.

For example: We set a variable with **Start Time** of 08:00 and a **Stop Time** of 08:00, and select **Day After Start** as shown below.

Then I run the interface to pull data for March 3, 2009 00:00:00 to March 4, 2009 08:01:00.

The interface will return a value for March 2 and March 3. Why? The stop time is our requested date range starting on March 3, 2009 with a stop time of 8 AM. The stop time is computed to March 3, 2009 08:00:00. Since we selected the stop as day after start, the start time is March 2, 2009 at 08:00:00. According to principle #2, the data point is stored on the start time.

So for our example:

Requested Date	Start Date and Time	Stop Date and Time
March 3, 2009	March 2, 2009 08:00:00	March 3, 2009 08:00:00
March 4, 2009	March 3, 2009 08:00:00	March 4, 2009 08:00:00

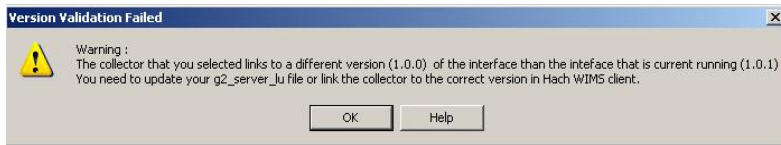
If we had set our date range from March 3, 2009 00:00:00 to March 4, 2009 07:59:59, then the interface would return only the first record, because stop time of March 4, 2009 08:00:00 in the second record, is past the end date and time of our range.

If we had set our date range from March 3, 2009 08:01:00 to March 4, 2009 08:01:00, then the interface would return only the second record, because the Stop Date and Time of the first record (March 3, 2009 08:00:00) does not fall within our start and end date range.

[Reference ID: 12058]

2.10 WARNING : Version Validation Failed

The version of the interface that you are using should match the version of the interface that the collector links to. If they **do not match**, you will be presented with the following warning message:

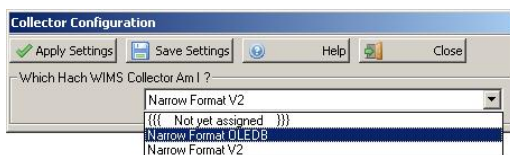


Click OK to continue.

To find out which version of the interface is running, click on the About box:

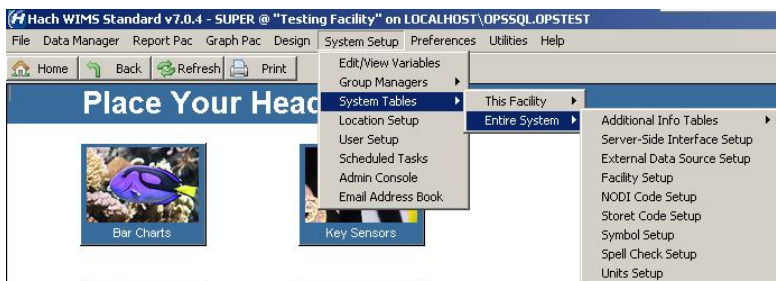


If you have already defined a Collector within Hach WIMS client that links to the appropriate version, you can select it from the Configuration / Collector Configuration screen:

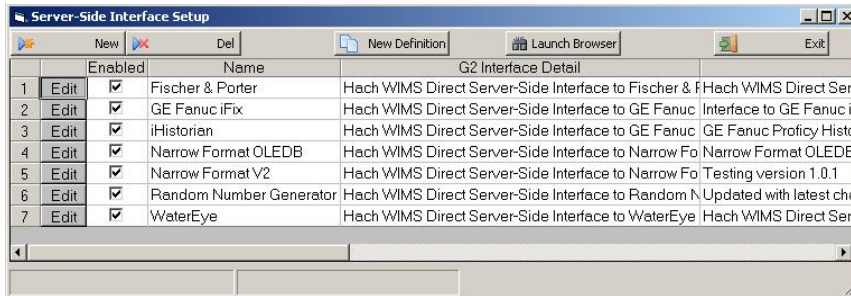


If there is not a collector in the list that links to the appropriate version, you will need to create a new collector or modify an existing one in Hach WIMS Client.

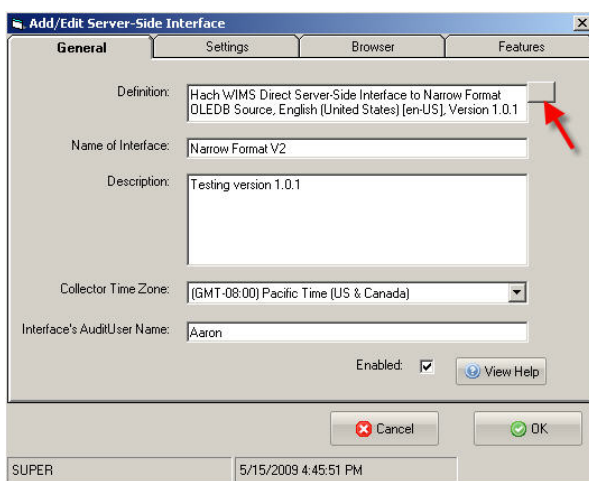
To modify an existing collector or add a new one, go to your Hach WIMS Client and click on System Setup / System Tables / Enter System / Server-Side Interface Setup from the main menu:



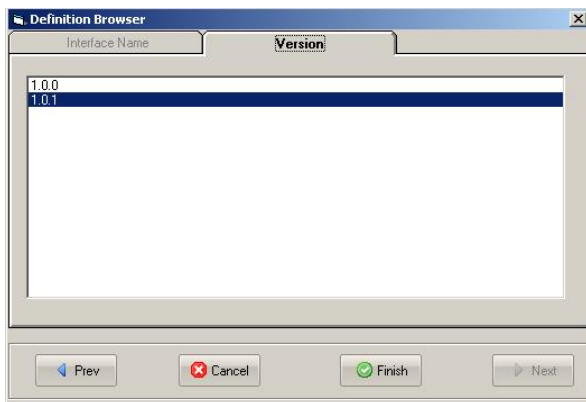
To add a new collector, click on New. To modify an existing one, click on Edit next to the appropriate collector:



If you are editing an existing collector, click on the blank button near the top right hand corner to open up the Definition Browser Screen:



In the Definition Browser screen, click on the appropriate version and click 'Finish':



If you don't see the appropriate version listed, then you need to update your g2_server_lu file. You can do that within the interface by clicking Utilities / Upload definition file to Hach WIMS from the main menu:

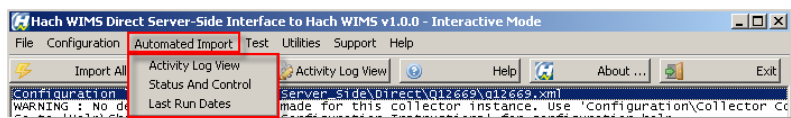


[Reference ID: 12230]

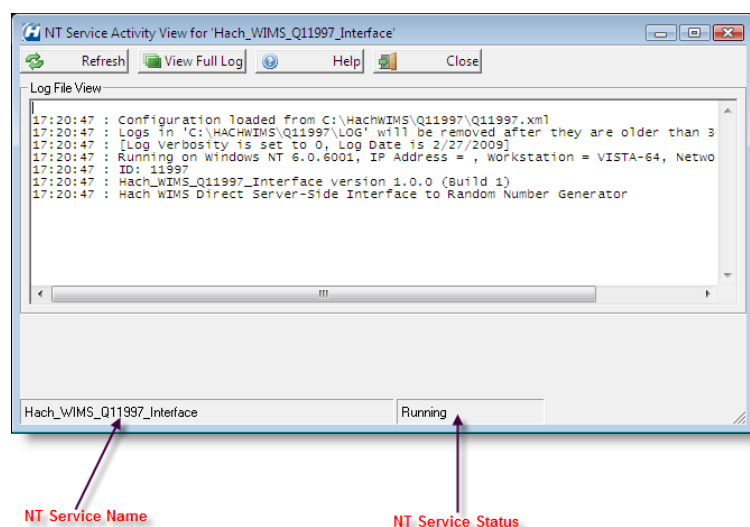
3 - Documentation : Main Menu

3.1 Automated Import - Activity Log View

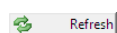
For Automated Import options, click the **Automated Import** button on the top menu bar of the interface.



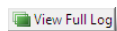
The **Activity Log View** lets you view the interface NT Service log.



Buttons:



Force refresh of the service log view. To shorten the refresh interval, see **Configuration - Advanced Configuration**(See Section 3.5) .



View the full service log.

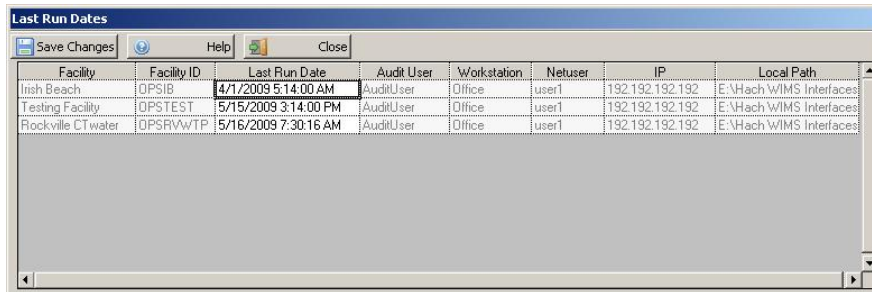
The rest of the buttons are explained in **Using Common Buttons**(See Section 2.7) .

NOTE:

If the log cannot be read, make sure the service name is correct and that it's running. See **Automated Import - Status and Control**(See Section 3.4) on how to start the service if it's not running (assuming the service name is correct) and see **Configuration - Advanced Configuration**(See Section 3.5) on how to view/change the service name.

3.2 Automated Import - Last Run Dates

The **Last Run Dates** screen lets you view the date and time when the interface successfully imported data for each facility that uses the interface. The screen also lets you change the last run date if need be. The only column that is editable is the Last Run Date. The other columns are there for informational purposes only.



Facility	Facility ID	Last Run Date	Audit User	Workstation	Netuser	IP	Local Path
Irish Beach	OPSI8	4/1/2009 5:14:00 AM	AuditUser	Office	user1	192.192.192.192	E:\Hach WIMS Interfaces
Testing Facility	OPSTEST	5/15/2009 3:14:00 PM	AuditUser	Office	user1	192.192.192.192	E:\Hach WIMS Interfaces
Rockville CT water	OPSRVWTP	5/16/2009 7:30:16 AM	AuditUser	Office	user1	192.192.192.192	E:\Hach WIMS Interfaces

[Reference ID: 12213]

3.3 Automated Import - Modify Last Ran Dates

This screen lets you modify the per-facility Last-Ran Date of the interface.

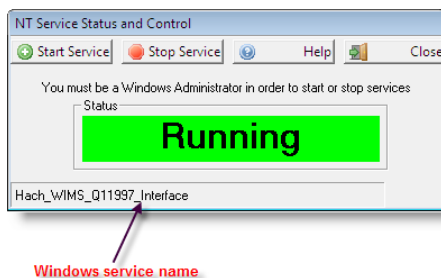
NOTE:

This is different than the default Last-Ran Date described in Configuration - Automated Import Configuration(See Section 3.10) , which is the default Last-Ran Date for ALL facilities that have not had any data imported.

[Reference ID: 12051]

3.4 Automated Import - Status and Control

The **NT Service Status and Control** screen lets you monitor the state of interface service, and start or stop the service (Note: you must be logged in as a Windows Administrator):

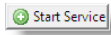


The name of the service is displayed in the bottom left (see screenshot) corner of the screen. This is the name of the service

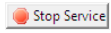
that the interactive program is configured to monitor.

If this is NOT the name of the service, you can change it from the **Configuration - Advanced Configuration**(See Section 3.5) screen.

Buttons:



Start the service, if it is not running.



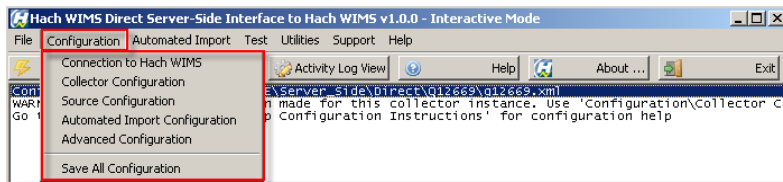
Stop the service, if it is running.

All other buttons are explained in **Using Common Buttons**(See Section 2.7) .

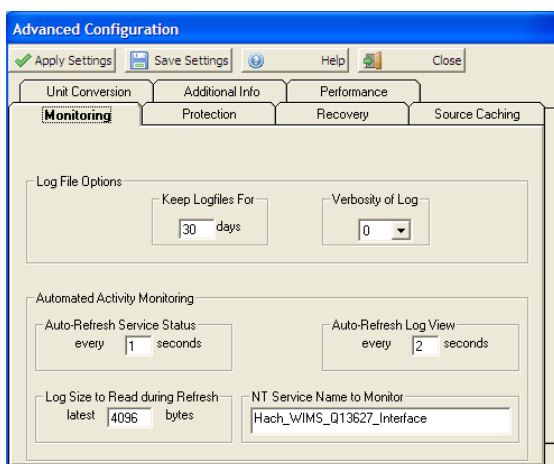
[Reference ID: 12047]

3.5 Configuration - Advanced Configuration

For Configuration options, click on the **Configuration** menu option at the top menu bar of the interface.



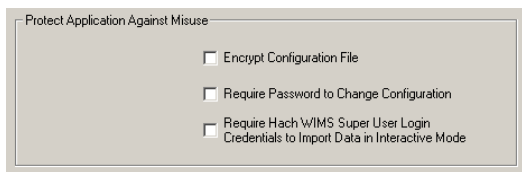
The **Advanced Configuration** screen can be used to configure various advanced interface settings:



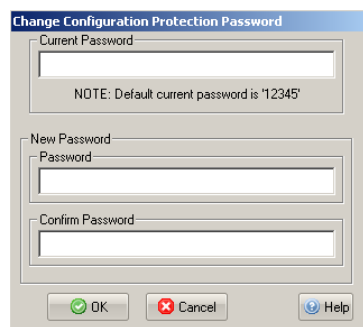
• Log File Options:

- ◆ Keep Logfiles - the number of days to keep log files in the Log folder, delete log files older than the number of days specified.

- ◆ Verbosity - the higher this number, the more messages will be logged in the log file and the log window.
This is usually meant for trouble-shooting purpose.
- **Automated Activity Monitoring** - use this option to configure the Automated Activity (service mode of the interface) options:
 - ◆ Auto-Refresh Service Status - when displaying the **Automated Import - Status and Control**(See Section 3.4) screen - how long to wait between status refreshes.
 - ◆ Auto-Refresh Log View - when displaying the **Automated Import - Activity Log View**(See Section 3.1) - the interval of time to wait before refreshing the log view.
 - ◆ Log Size to Read during Refresh - the maximum number of characters to actually read in when refreshing the log view.
 - ◆ NT Service Name to Monitor - the name of the NT service under which the interface runs. The default is usually fine. **Do NOT change this unless instructed by a Hach Support Engineer, or unless you installed the service under a different name and know what you are doing.**



- **Protect Application Against Misuse** - On the **Protection** tab, if you want more security in your interface configuration, you can configure:
 - ◆ Encrypt Configuration File - encrypt the contents of the interface configuration file to prevent unauthorized tampering.
 - ◆ Required Password to Change Configuration - require a password every time the user requests a configuration change. If no password is yet set, you are prompted to supply one.



- ◆ Require Hach Wims Super User Login ... - to prevent someone from accidentally overwriting data when running in interactive mode, you can set this option to require people to enter in a super-user ID and password before importing.

When Hach WIMS Connection breaks
Automatically Attempt to Re-Connect times
Wait seconds between connection attempts

When Source Connection breaks
Automatically Attempt to Re-Connect times
Wait seconds between connection attempts

- **When Hach WIMS/Source Connection Break** - on the **Recovery** tab, establishes the number of times to attempt to restore the connection to Hach WIMS/Source and the amount of seconds to wait between attempts.

Source Input Caching Options

- **Source Input Caching** - button on the **Source Caching** tab, is enabled when interface supports source input caching. Lets one specify caching conditions. Go to **Source Cache Input Configuration**(See Section 3.6) for more information.

Unit Conversion Options

- **Unit Conversion Options** - On the **Unit Conversion** tab, is enabled when interface supports unit conversion. Lets one specify various units and conversion factor. Go to **Configuration - Advanced Configuration: Unit Conversion**(See Section 3.9) for more information.

Additional Info Writer Options

- **Additional Info Writer Options** - On the **Additional Info** tab, is enabled when interface supports additional info. The additional info fields must be created in Hach WIMS Client first, then the fields can be mapped by pressing the **Configure Additional Info** button. Go to **Configuration - Advanced Configuration: Additional Info**(See Section 3.7) for more information.

Performance Throttle
☐ Enabled ☒ Disabled

Insert Artificial Wait between Source Polling
Every Milliseconds

Process Messages Before Wait
☒ Enabled ☐ Disabled

Process Messages After Wait
☒ Enabled ☐ Disabled

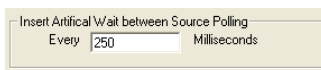
- **Performance Throttle** - on the **Performance** tab, there are several options related to throttling, or slowing down, the connection speed to the database. There are situations where an interface can run too many read/write operations

against a database which causes the database to become overwhelmed and incapable of processing other tasks - effectively shutting down other database operations. Throttling the connection speed causes our system to pause between queries and allow the database to process other requests before and/or after we pause the interface.

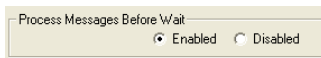
WARNING! Using the Throttle will slow down interface performance significantly. Only use this option if you are running against database performance issues due to too many read/write operations from the WIMS interface.

The following are important things to note about the Throttle option:

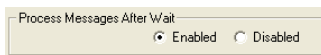
- This option is not intended to be used with normal interface setup. It should only be used if the source database is showing I/O processes being delayed explicitly because of the WIMS interface connection.
- This option is not intended for LIMS interfaces. If a LIMS interface does appear to be causing an I/O problem, the root cause is probably something else and throttling will not resolve.
- When in doubt, leave the throttle disabled.



- **Insert Artificial Wait between Source Polling** - Allows the user to specify the pause time between queries. This field only accepts whole numbers (no decimals) from 1 to 9999 and is measured in milliseconds. Example 250 milliseconds = 0.25 seconds. Use as little a pause as possible to achieve desired database performance.



- **Process Messages Before Wait** - Allows the user to specify if the database should process other events before the interface pauses.
Note: A user may opt to process other events before and after a pause; or neither if desired. The default is to enable both before and after.
- Example when enabled: The interface just completed a connection to the Source database - it will allow the database to process other events, then pause.



- **Process Messages After Wait** - Allows the user to specify if the database should process other events after the interface pauses.
Note: A user may opt to process other events before and after a pause; or neither if desired. The default is to enable both before and after.
- Example when enabled: The interface just completed a connection to the Source database - it will pause, then allow the database to process other events.

Buttons:

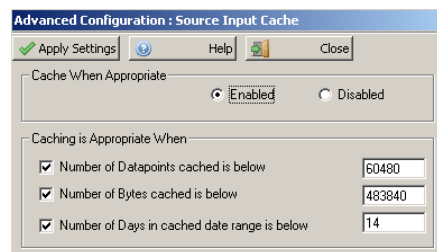
The buttons are explained in Using Common Buttons(See Section 2.7) .

[Reference ID: 12045]

3.6 Configuration - Advanced Configuration : Source Input Cache

Source Input Cache Configuration, is used to configure criteria for caching, if the interfaces supports caching and the option is **Enabled**. Caching is used to load more data into memory at one time, and retain it for processing variables instead of continuously rereading source data from disk. This will speed up processing, but uses more computer resources - such as memory. Set the parameters to set thresholds for processing chunks of data and so that the interface does not surpass the limitations of your computer.

(Note: Not all interfaces have this feature available)



Click **Apply Settings** to apply changes and return to parent form. Click **Close** to return without applying changes.

[Reference ID: 12132]

3.7 Configuration - Advanced Configuration: Additional Info

Additional Info, if enabled, is used to configure a cross reference map between fields in the source system and result additional info fields in Hach WIMS. This cross reference map will be then used by the interface during data import.

This feature can be turned off. Simply click the **Disable** radio button under **Write Data Into Additional Info Fields in Hach WIMS**.

The number of successful writes to additional information can be **Enabled** or **Disabled**. Click the appropriate radio button under **Log Number of Successfully Written Fields during Import**.

(Note: Not all interfaces have this feature available)

Advanced Configuration : Additional Info

Apply Settings Help Close

Write Data Into Additional Info Fields in Hach WIMS ☒ Enabled ☐ Disabled

Log Number of Successfully Written Fields during Import ☒ Enabled ☐ Disabled

	Enabled	Source Field Identifier	Target WIMS Facility Identifier.Field Identifier
1	<input checked="" type="checkbox"/>	LABNUMBER	OPSTEST.ASPEN_LABNUMBER
2	<input type="checkbox"/>		
3	<input type="checkbox"/>		
4	<input type="checkbox"/>		
5	<input type="checkbox"/>		
6	<input type="checkbox"/>		
7	<input type="checkbox"/>		
8	<input type="checkbox"/>		
9	<input type="checkbox"/>		
10	<input type="checkbox"/>		
11	<input type="checkbox"/>		
12	<input type="checkbox"/>		

1. Click on any button in the **Source Field Identifier** column to pick a source field.
2. Click on any button in the **Target WIMS Facility Identifier.Field Identifier** column to pick a target field.
3. Right click on any button, and click on **Clear Cell** to erase contents of a cell.

Source Field Identifier
LABNUMB
Clear Cell

Notice the example output below from Hach WIMS Client > Spread Report Design, additional info is only imported when there is a valid result imported. Also notice how we have the field set up in Additional Info and how we recall the data in Spread Reports.

Spread Report Design - Untitled

File Edit Locate Format Sheets Help

Jul 2008

Arial 8 B I U

F6 =AINFO(205,1,"ASPEN_LABNUMBER")

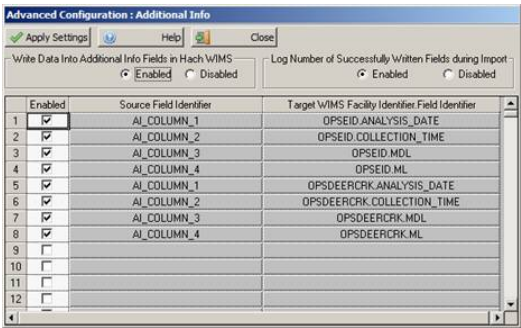
	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2													
3													
4													
5			Date	RESULT	COMMENT	LABNUMBER	APPROVEDDATE	COMMENTS	NOTES				
6			07/01/08	5.00	<5	2008070800	7/8/2008	cloudy sample	this is nasty				
7			07/02/08		J6								
8			07/03/08	10.00		20080708009	7/8/2008						
9			07/04/08		NA								
10			07/05/08	20.00		20080708011	7/8/2008						
11			07/06/08										
12			07/07/08										
13			07/08/08										
14			07/09/08										
15			07/10/08										
16			07/11/08										
17			07/12/08										
18			07/13/08										
19			07/14/08										

Additional Info Setup

New Exit

Column Name	Column Type	Length
LABWORKS_TEST	VARCHAR	50
ASPEN_LABNUMBER	VARCHAR	50
ASPEN_COMMENTS	VARCHAR	250
ASPEN_NOTES	VARCHAR	250
ASPEN_APPROVEDDATE	DATETIME	
ASPEN_DATAQUALIFIER	VARCHAR	20

NOTE: When interfacing to two (2) or more facilities you **MUST** map each facility. For example, I am importing data into the OPSEID facility database and the OPSDEERCRK facility. I would map AI_COLUMN_1 thru AI_COLUMN_4 for each facility:

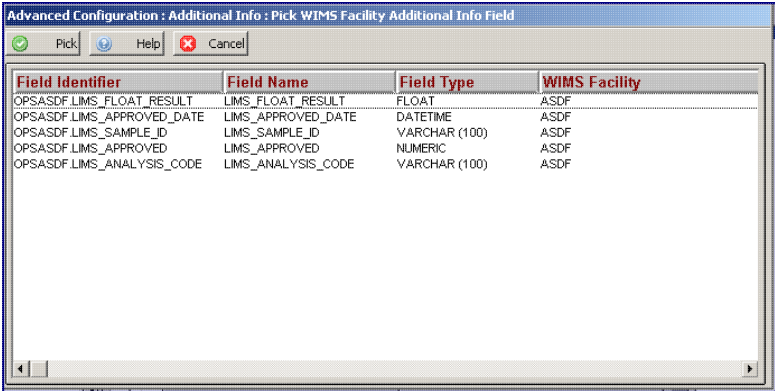


[Reference ID: 12598]

3.8 Configuration - Advanced Configuration: Additional Info : Pick WIMS Facility Additional Info Field

Pick WIMS Facility Additional Info Field window lists all available additional info fields for all facilities connected to your Hach WIMS server.

Select a row to highlight a field, and click the **Pick** button.



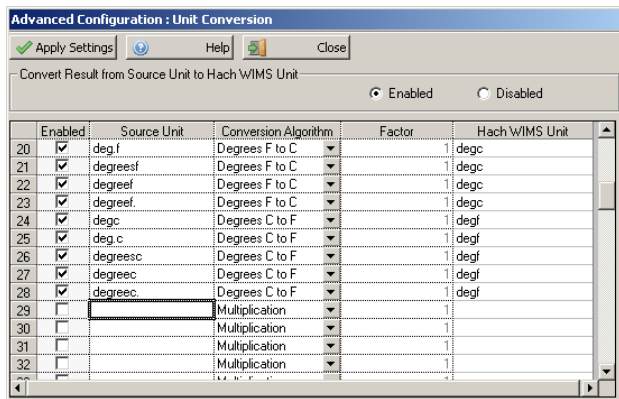
[Reference ID: 12599]

3.9 Configuration - Advanced Configuration: Unit Conversion

Unit Conversion, if enabled, is used to configure unit conversion when the "units" from the source are different than the "units" in Hach WIMS.

This feature can be turned off, simply click the **Disable** radio button under Convert Result from Source Unit to Hach WIMS Unit.

(Note: Not all interfaces have this feature available)



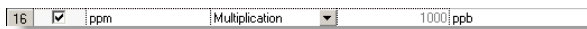
1. Under **Source Unit** enter the text value as it is in the source
2. Select the **Conversion Algorithm**



- ◆ **Multiplication** - Multiply the source result by the **Factor** before writing to Hach WIMS
- ◆ **Degrees F to C** - Convert degrees Fahrenheit to degrees Celsius
- ◆ **Degrees C to F** - Convert degrees Celsius to degrees Fahrenheit

1. Enter the **Factor** amount, how much to multiply the source result by before writing to Hach WIMS. When using the Degrees conversion, enter a 1 (one)
2. Enter the **Hach WIMS Unit** that the Hach WIMS variable will be using

For example, the source result is stored in parts per million ("ppm") and it needs to be converted in Hach WIMS as parts per billion ("ppb"). You could add the following conversion:



(Note: this is one of the default conversions included)

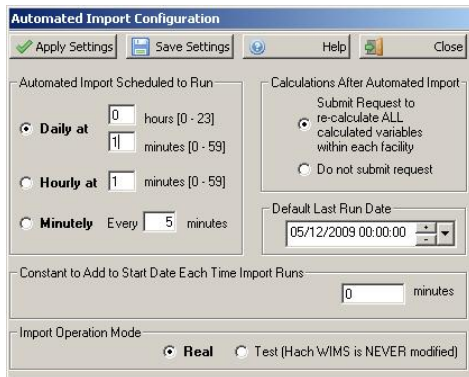
Click **Apply Settings** to apply changes and return to parent form. Click **Close** to return without applying changes.

[Reference ID: 12328]

3.10 Configuration - Automated Import Configuration

Each interface can be configured to run as a service. This is when you want to schedule an automatic retrieval of data, without user intervention.

The **Automated Import Configuration** screen allows you to configure the schedule, whether to submit calculation requests, the Last-Run Date, and the import operation mode:



- **Automated Import Schedule** - configure when the interface service is scheduled to run:
 - ◆ **Daily** -the interface will run ONCE per day, at the specified schedule. E.g., to run it at 2:30 am, you would enter "2" into the hours box and "30" into the minutes box. Note that time is entered in "military" format. To enter 4:45 pm, you would enter "16" into the hours box, NOT 4.
 - ◆ **Hourly** - the interface will run **every hour** at the specified minute after the hour
 - ◆ **Minutely**- the interface will run **every X minutes** where X is a number between 1 and 1440. E.g., to run it every 5 minutes, you would enter "5".
- **Calculations After Automated Import** - select this option if you would like the Hach WIMS AdoCalc service to recalculate all variables within **every** facility after an import operation completes.
- **Default Last Run Date** - this is the point in time from which the interface service will try to retrieve data, up until the current point in time. After a successful run, the current time will become the last run time. By default, this is set to one day prior to the current day.

E.g., assume today is February 25, 2009, if you have just installed the interface and have 3 months of historical data you want imported into Hach WIMS. You should enter November 25, 2008 as the Last-Run Date (3 months prior to February 25th). Once the interface completes its run, the Last-Run Date will be set to February 25, 2009 automatically. The next time it runs (assuming it runs Daily), February 26, 2009, it will only fetch **one** day's worth of data.

- **Constant to Add to Start Date Each Time Import Runs** - Enter the number of minutes to add to the Start Date when the interface runs in automatic mode. This allows the interface to capture data from previous runs that might not have been available at that time.
 - ◆ During automated import, interface queries source data for the following date range :
from (Last Run Date/time(See Section 3.2) + *Constant to Add to Start Date Each Time Import Runs*) *to* (current date / time)

If your source system does not yet contain the needed data at the time of automated import, use this setting to push back the **from** parameter. For instance, if you need the import to start 2 hours before Last Run Date/time(See Section 3.2) , you need to enter value of **-120** (negative 120) to *Constant to Add to Start Date Each Time Import Runs*

NOTE: Situations when you would need to input a positive value in this field are very rare.

Value of 0 (default) has no negative or positive effect on start date.

- **Import Operation Mode** -Real mode imports data into Hach WIMS where as Test does not actually import data, but tests the query capability and timing of the interface.

Buttons:

The buttons are explained in Using Common Buttons(See Section 2.7) .

[Reference ID: 12044]

3.11 Configuration - Collector Configuration

The **Collector Configuration** is the place where you configure the source of your data - the SCADA/LIMS system that holds the data you want to import.



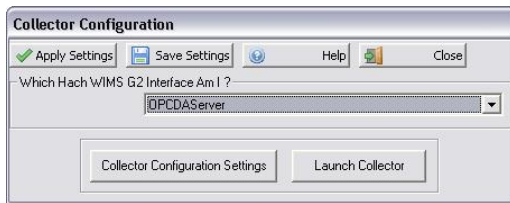
NOTE: Before you can configure the collector, you MUST configure the Connection to Hach WIMS(See Section 3.12) and you must setup the Hach WIMS client(See Section 2.4) .

Select **Which Hach WIMS G2 Interface Am I** for this interface. The names that appear in the drop-down box are the ones that were configured in the Hach WIMS Client. This name is then tied to this interface and is unique.

Buttons:

The buttons are explained in Using Common Buttons(See Section 2.7) .

If the Interface you are using has a separate Collector Utility that generates OPSDATAXML files that it reads from, you can configure and launch it from here.



Collector Configuration Settings Opens a screen that allows you to configure the Collector's settings

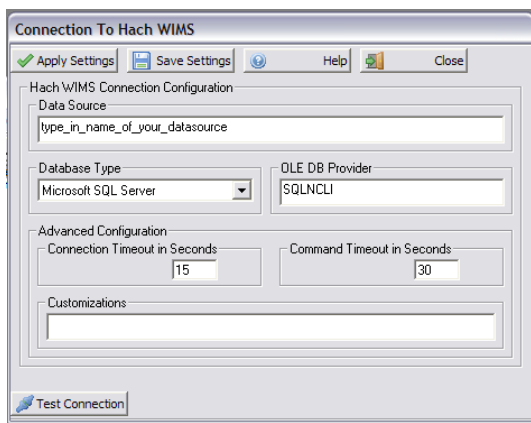
Launch Collector Starts the Collector utility

[Reference ID: 12042]

3.12 Configuration - Connection To Hach WIMS

The **Connection to Hach WIMS** screen lets you configure how the interface will connect to **Hach WIMS Database Server**.

This is one of the first items you configure when setting up a new interface.



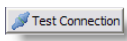
- **Data Source** - this field specifies, in loose terms, the "Database/Datasource server name" where your Hach WIMS system is configured to store data. "Database/Datasource server name" means different things depending on whether you are running against Oracle or MS SQL:
 - ◆ Oracle - you can type in either the Oracle TNS name or a string in the form of *host:port/SID*, if using the Oracle HOSTNAME adapter.
 - ◆ MS SQL - this is in the form of *host\sql_instance_name*
- **Database Type** -select the appropriate type of your Hach WIMS database
- **OLE DB Provider** - this specifies which "database driver" the interface will use when connecting to Hach WIMS and again depends on the database type:
 - ◆ Oracle - the default string should be fine
 - ◆ MS SQL - if connecting to MS SQL 2005 or later, use the native client to connect. Specify SQLNCLI as the provider. **NOTE: You will need to have the Microsoft SQL Native Client installed for this to work.** If connecting to MS SQL 2000, specify SQLOLEDB as the provider.

- **Connection Timeout in Seconds** - how many seconds the program should wait when establishing a connection to the Hach WIMS database before aborting.
- **Command Timeout in Seconds** - specifies how many seconds the program should wait for a query to complete before aborting the operation.

WARNING: Large values for these two settings can cause the program to not respond for a long period of time! Do NOT use 0 unless you know what you are doing - it will cause the program to wait indefinitely, and if your database server is down, the only way to cancel the operation is to forcefully quit the program.

- **Customizations** - this should be left empty unless you were told otherwise by a Hach Support Engineer or you know what you are doing.

Buttons:

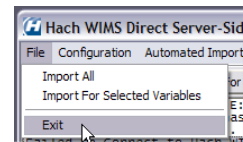


Test to see if the connection settings are valid and the interface is able to connect to Hach WIMS client. This will NOT **Apply** or **Save** the settings.

The other buttons are explained in Using Common Buttons(See Section 2.7) .

[Reference ID: 12037]

3.13 File - Exit



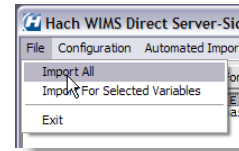
Terminates the interactive interface program.

NOTE:

Clicking "Exit" only closes the interactive interface session. Since the interface can be configured to run as a Windows Service, clicking "Exit" does NOT affect this service, it will continue collecting data. The service can be scheduled to collect data anytime, whether a user is logged on to the machine or not. The service for the interface will continue collecting data whether the interactive program is running or not.

[Reference ID: 12035]

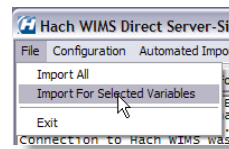
3.14 File - Import All



Imports all data for all variables.

[Reference ID: 12034]

3.15 File - Import For Selected Variables

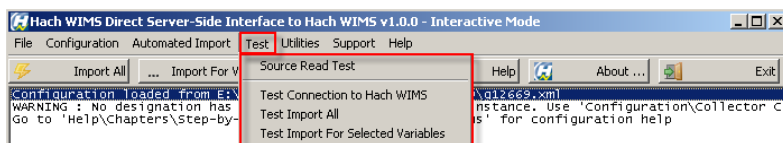


Imports data for the selected variables.

[Reference ID: 12038]

3.16 Test - Source Read Test SCADA to Hach WIMS

For testing options, click on the **Testing** menu option at the top menu bar of the interface.



The **Source Read Test** functionality is useful for source testing purposes.

Use this screen to look at source data for specific dates, using different statistics (MINIMUM, MAXIMUM, AVERAGE, etc).

This is useful when you want to look at source data on specific dates, WITHOUT doing an actual import. (No data will be overwritten on the Hach WIMS database.)

The 'Source Read Test' dialog box is a standard Windows-style window. It has a title bar 'Source Read Test'. Inside, there's an 'Input' section with a 'SourceTag' text box. Below that are 'Source Statistic', 'Start Date', and 'End Date' fields. 'Start Date' and 'End Date' are date pickers showing '03/01/2009 10:50' and '01/29/2009 12:00' respectively. There are three more input fields: 'Low Range Filter', 'High Range Filter', and 'Dead Band'. Below these are 'Filter Tag', 'Filter Operand', and 'Filter Value' fields. At the bottom, there are three buttons: 'Test Read Double', 'Test Read String', and 'Close'.

To do a test, you will need to specify a tag in the Source Tag field.

Then, for each tag, you can specify:

- The Source Statistic to apply (MINIMUM, MAXIMUM, AVERAGE, etc).
- The start and end dates you want data fetched.
- The high & low ranges, as well as the dead-band (optional).
- The filter tag - a second source tag that acts as a filter to the main selected tag (optional).

Buttons:

	Interpret the tag as a double (floating-point) tag and return a floating-point number.
	Interpret the tag as a string tag and return the result as a string.
	Closes the window.

[Reference ID: 12054]

3.17 Test - Test Connection to Hach WIMS

Perform a test against the Hach WIMS connection to see if the connection is valid

[Reference ID: 12052]

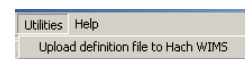
3.18 Test - Test Import All

This performs a **test** import for all interface-configured variables. Note that no actual data will be written to the Hach WIMS database.

[Reference ID: 12053]

3.19 Utilities - Upload Definition File to Hach WIMS

This feature allows you to upload the interface definition (g2_server.lu) file to the Hach WIMS database. This is needed in order to setup a collector record in Hach WIMS.



Once the definition file has been uploaded, proceed with creating a collector record in Hach WIMS Client.

The process to setup a collector record is outlined in How to configure the Hach WIMS Client for a server-side interface(See Section 2.4) .

[Reference ID: 12040]

4 - Documentation : Release notes

4.1 Release Notes for Hach WIMS Server-Side Interface Platform

Build 149 (9/16/2015)

- Menu item Support>Am I licensed for this interface now works with new licensing system.

Build 147 (8/21/2015)

- Added GetLocationPath to CommonGlobals (4660)

Build 146 (6/2/2015)

- Fixed error condition when LockDate is not set in the database (4605)

Build 145 (7/3/2014)

- Minor update of UI for Windows 7 (4431)
- Minor update of Automated Import Configuration for Windows 7 (4466)

Build 142 (10/1/2013)

- Improved Time/Date syncing issues experienced by some clients (4207)
- Added a database connection throttle (performance throttle) advanced configuration (See Section 3.5) option that pauses between source queries allowing other database process events to execute (4267)

Build 137

- Modified to handle the new licensing for SQL Server 2012.(4202)
- Handled out of memory error when the interfaces are ran with many variables and date ranges.(4158)
- A change was added to keep the database connection open during the import process.(4106)

Build 135

- Changed logging to user interface (LogToUI) to prevent an "Out of Memory" error when extensive amount of text lines are written to the interfaces list box. (4158)

Build 116

- Updated framework to handle time zone differences and how they affect direct and indirect interfaces

Build 100

- Compatible with Hach WIMS 1.3.8 Database version

Build 85

- Minor change to Advance Configuration to disable Additional Info button if the interface does not support additional info

Build 84

- Fixed a bug that caused interfaces to omit reading of Hach WIMS variables in rare cases when the natural order of records in the VARDESC table did not equal to 'order by varid' on Oracle platforms(3006)

Build 83

- Added support for importing of Additional Entry Fields. For interfaces that support this framework feature, go to Advanced Configuration / Additional Info in order to configure you conversion map (3075)
- Added support for User Interface to display Connection String when clicking on Source Configuration / View Applied Connection String (2821)
- Added support for User Interface to omit asking for Input Dates for interfaces where selecting dates does not make sense (2806)
- Fixed a bug that caused Floating Point rounding to overflow on very large numbers resulting in no rounding being performed on numbers (3016)
- Fixed a bug that caused help.chm to be improperly located by the user interface when interface executable was launched using Windows Shell command (2932)
- Fixed a bug that caused interfaces of common type SCADA2OPSSQL to halt importing in cases when users went around the program business rules and manually (in the backend) entered OPSROOT.FACILITY.FILENAME field in lowercase (2890)

Build 54

- Added support for Configuring and Launching a Collector Utility

Build 53

- Added support for LIMS2OPSSQL type of framework
- Added support for Unit Conversion

Build 48

- Fixed an interface crash if the selected OLEDB driver could not be found (2406)
- Added a MINUTELY mode of scheduling of automated service (2447)
- Displays a warning message when attempting to import into collector which is linked to incorrect version of g2_lu (2505)
- Added ability to view and edit Last Run Date for Facility UI (2626)

Build 36

- Fixed a loophole that may have allowed interface crash when UI log listbox was about to display more than 32000 lines of log (2495)

Build 34

- Fixed a bug that pulled up incorrect article or category when clicked on submenu Help / Chapters. Platform now requires setting of link constants for every interface custom configuration module (2488)
- Fixed a bug that took users to incorrect link upon clicking on menu item Support / Check for new Updates (2492)

Build 27

- Initial release to public

[Reference ID: 12033]

4.2 Release Notes for SCADA2OPSSQL Type of Hach WIMS Direct Server-Side Interface

Build 66(8/21/2015)

- Variable Browser relocated location path field next to variable name (4660)

Build 65(3/30/2015)

- Variable Browser Select All button no longer selects filtered variables (4582)
- Variable Browser now displays location path (4582)

Build 64 (7/3/2014)

- Additional logging added (4159)
- Added a database connection throttle allowing other processes (programs) to process events to run. (4267)
- Variable Browser improvements - added quick filter, filter by facility. (4385)
- Variable Browser UI improvement for Windows 7 (4466)

Build 60

- Added support for MAXTIME and MINTIME to the import process.(4185)
- Fixed problem importing text values.(4125)
- Added user option setting to keep the database connection open during the entire import process.(4106)

Build 57

- **Added a global variable to CommonGlobals to allow custom notes to the stats summary at the end of a run. I added the global variable to CommonGlobals and it is used in CommonImport (4132)**

Build 56

- Added a global variable to CommonGlobals and CommonImport to keep the CustomImport object alive so its connection would stay open. We were having a problem with a special database driver hanging when it was closed. (4106)

Build 55

- Fixed framework to properly handle Text Parameter type variables (4125)

Build 53

- Updated framework to handle time zone differences and how they affect direct and indirect interfaces

Build 47

- Added logging in CommTAGFilter routine CarryLastValue when verbosity is set to 9

Build 46

- Changed CommonImport to make sure start date is correct when using the Cache feature in Advanced Settings (only affects certain interfaces) (3261)
- Changed CommonTAGFilter to scrutinize data returned from CustomTAGFilter (only affects certain interfaces) (3313)
- Changed CommonTAGFilter to propagate execution error check down to lowest level, so that we can distinguish between an execution error and bad data (only affects certain interfaces) (3426)

Build 41

- Added to CommonTypeDateManager in Common_SCADA2OPSSQL; added code to compensate for daily var that have less than 1440 min/slot (i.e., 60 min from total day) so that it would get current day if the start and stop times have passed current time (Fortress 2673)

Build 40

- Added ability to view connection string in CustomConfig form

Build 37

- Added ability for SCADA2OPSSQL type of interfaces to define a global configuration tree

Build 36

- Fixed problem with statistics TIMELT, TIMEGT, and TIMEEQ not counting the very first record.

Build 34

- Added to caching function to support the following statistics for parameters using flat file databases: TOTAL, AVERAGE, MINIMUM, MAXIMUM, FIRST, LAST, DIFF, RANGE, COUNT, INVENTORY, TIMEGT, TIMELT, and TIMEEQ
- Added to caching function to support the following statistics for text parameters using flat file databases: MINTIME, MAXTIME, FIRST, LAST, COUNT
- Added to caching function to support the following filter operators on filter tags when using flat file databases: =, <, >, <=, >=, <>, and CYCLESTO

(Note: consult the "Topic specific to the operation of this interface" article "Supported Variable Configuration" to see whether your interface supports these available options or not)

Build 28

- Added ability to specify adjustment of start date in minutes when running in automated mode. This can be configured under Configuration / Automated Import Configuration (2445)
- Added support for caching of input to accelerate interface performance of interface that rely heavily on IO (2481)
- Added support for filtering for OLEDB types of SCADA2OPSSQL interfaces (2457)

Build 10

- Initial Release to Public

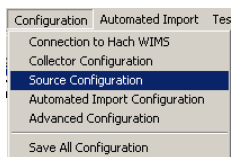
[Reference ID: 12068]

5 - Documentation : Topics specific to the operation of this interface

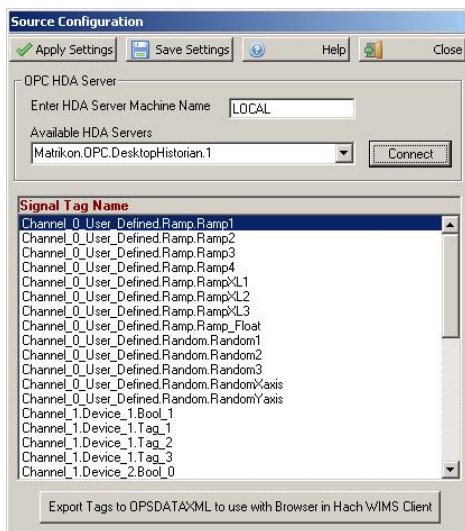
5.1 Configuration - Source Configuration Q12260

This is the Source Configuration screen for the Hach WIMS Direct Server-Side Interface to OPC HDA. In order for this Interface to work, you will need to have an OPC HDA running and have installed the WtHDAClient.dll. The WtHDAClient.dll is a 3rd part DLL that allows the Interface to communicate with OPC HDA Servers. If the OPC HDA is on another computer, some extra configuration steps will need to be taken. See article 10834(See Section 5.4) for instructions on how to configure DCOM for OPC.

In order to configure source connection from the interface, click **Configuration** and select **Source Configuration**.



The next screen will display parameters.



Fields:

- **Machine Name** - The name (or IP address) of the computer that contains the OPC HDA. Use LOCAL if the OPC HDA is on the local machine.
- **Available HDA Server** - This drop down list contains a list of all the OPC HDA servers on the provided machine. If the list is empty there is either no OPC HDA installed, WtHDAClient.dll is not installed or there is an issue with DCOM (see article 10834(See Section 5.4)).
- **Signal Tag Name** - A list of all the Tags in the OPC HDA (you must click the connect button before this list is populated)*.

Buttons:

- **Connect** - This will establish a connection to the OPC HDA and list all the available tags in the server.
- **Export Tags to OPSDATAXML to use with Browser in Hach WIMS Client** - Once you are able to successfully connect to the OPC HDA and you see all the available tags, click on this button. This button will export all the tags to an XML file that the Hach WIMS Client uses. When you save the file, please note where it is saved to (you'll need this information when you configure the Interface in the Hach WIMS client).

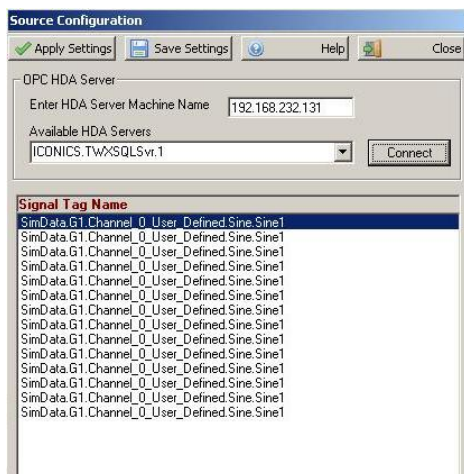
The other buttons are explained in Using Common Buttons(See Section 2.7) .

** The ICONICS TrendWorX (an OPC HDA Server) does not allow OPC HDA Item browsing with the WtHDAClient.dll that the Interface uses (see article 12279(See Section 5.2)). Instead, the first Tag is repeated over and over if you try to browse the Tags. The Interface will still work, you just won't be able to use the Tag Browser in Hach WIMS Client. To get around this issue a new utility was created, TWX2OPSXML. This utility reads in an ICONICS TrendWorX Data Logger XML Configuration file and exports an OPSDATAXML file that can be used by the browser (see article 12281(See Section 5.7)).*

[Reference ID: 12272]

5.2 OPC HDA Interface - Browsing OPC Items Results in Same Item Repeated Over and Over

In the Source Configuration Screen, when you connect to an OPC HDA Server, the same OPC Item/Tag is repeated over and over.



This occurs when connecting to OPC HDA Servers that don't support the OPCHDA_FLAT Browse Type (i.e. ICONICS TrendWorX). The WtHDAClient.dll that the Interface uses to communicate with the OPC HDA only supports this method.

From the manufacturer of the WtHDAClient.dll (WinTech):

The client requests a list of tags from the server using one of the following BrowseTypes:

Member	Description
OPCHDA_BRANCH	Returns only nodes that can have children. These may or may not be items.
OPCHDA_LEAF	Returns only nodes that cannot have children. These are always items.
OPCHDA_FLAT	Returns everything at and below this level including all children of children, all the way to the end, as fully qualified ItemIDs basically pretends that the address space at this level and below is FLAT. This parameter is ignored for FLAT address space.
OPCHDA_ITEMS	Returns all items at the current browse position. This means all objects at the current level which are valid objects to send to IOPCHDA_Server::GetItemHandles. Note: this browse type will normally be used instead of OPCHDA_LEAF to guarantee that all items are displayed.

The client dll positions the pointer at the root of the namespace and browses using OPCHDA_FLAT which should return a list of all items. It sounds like the server is not returning the proper list, however, you'd have to run it through a debugger to make sure. If the server does not support browsing using the OPCHDA_FLAT type, the code within the dll would have to change to browse each branch of the name space individually.

To get around this issue for ICONICS TrendWorx32 a new utility was created, TWX2OPSXML. This utility reads in an ICONICS TrendWorX Data Logger XML Configuration file and exports an OPSDATAXML file that can be used by the browser (see article 12281(See Section 5.7)).

[Reference ID: 12279]

5.3 Release notes for interface Q12260

Version 1.1.0 (Released on 12/7/2015)

- Fixed DIFF function (4623)
- Upgraded interface to Common Framework(See Section 4.1) Build 149

Version 1.0.9 (Build 119, Released on 1/24/2013)

- Updated to the latest common framework
- Fixed problem uploading the G2_Server_LU file

Version 1.0.8 (Build 83, Released on 5/11/12)

- Fixed a bug where the license could not be verified when installed on a server other than the client
- Added functionality to work with SQL Server 2012

Version 1.0.7 (Build 82, Released on 9/2/10)

- Upgraded to Common Framework build 116, SCADA Framework build 53, Updated framework to handle time zone differences and how they affect direct and indirect interfaces

Version 1.0.6 (Build 66, Released on 7/30/10)

- Upgraded interface to Common Framework Build 100

Version 1.0.5 (Build 57, Released on 4/30/10)

- Fixed problem in loading tags from source in Source Configuration

Version 1.0.4 (Build 55, Released on 4/12/10)

- Fixed problem with interface failing and unable to continue unless service was restarted (CSCP 51958)

Version 1.0.3 (Build 41, Released on 10/22/09)

- Upgraded interface to Common Framework Build 85

Version 1.0.2 (Build 19, Released on 6/12/09)

- HoldLastRunDate set to False by default instead of True

Version 1.0.1 (Build 18, Released on 6/12/09)

- Updated framework because changes were needed in order to accomplish LIMS2OPSSQL common type (2693)

Version 1.0.0 (Build 15, Released on 6/11/09)

- Initial release

[Reference ID: 12269]

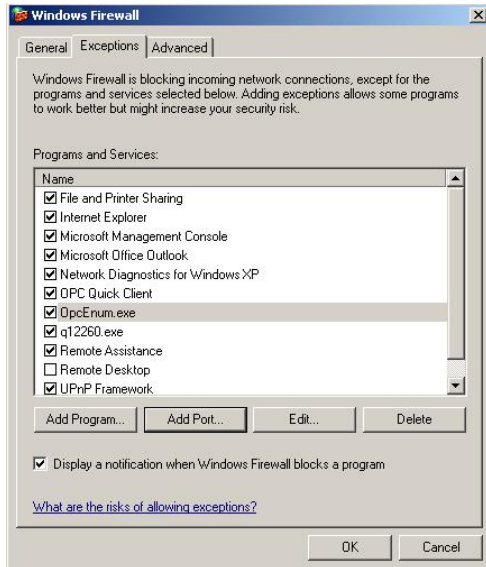
5.4 Setting up DCOM for OPC Interfaces

This article will cover setting up DCOM for OPC interfaces to work over networks. This article was written for Windows XP

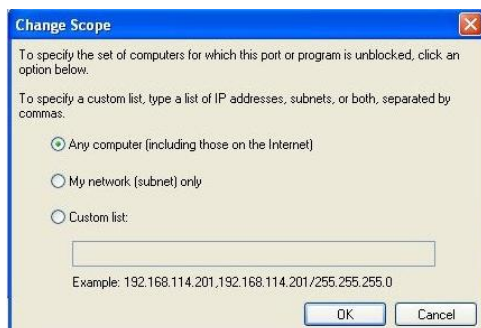
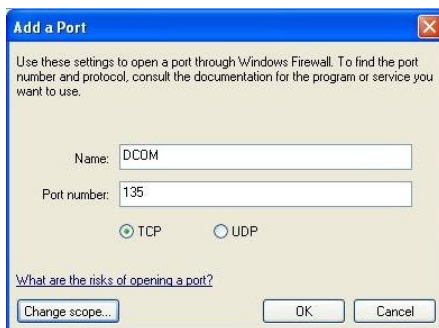
SP2 users but it should also be relevant for Windows Vista users.

Configuring Windows Firewall

If there is a firewall between the two computers, simply add the interface EXE, OPCENUM.exe and any other OPC Client and OPC Servers that you want to communicate with to the exception list of the firewall.



Add Port named DCOM, port number 135, and TCP type to the exception list:



(Excerpt from OPC Foundation paper: *Using OPC via DCOM with Microsoft Windows XP Service Pack 2*)

Configuring DCOM

DCOM has settings for:

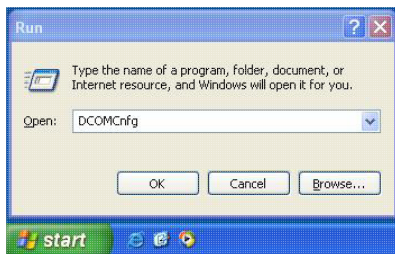
- Machine Default
- Each Server

Configuring DCOM Machine Default

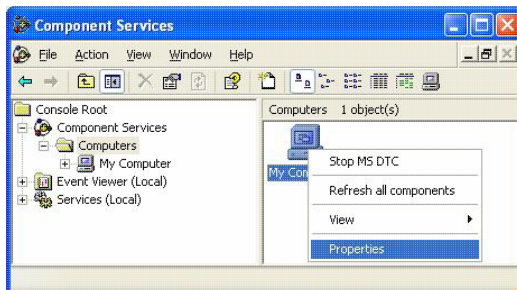
Follow these steps to configure the DCOM machine default settings for OPC

Communications using Windows XP Service Pack 2:

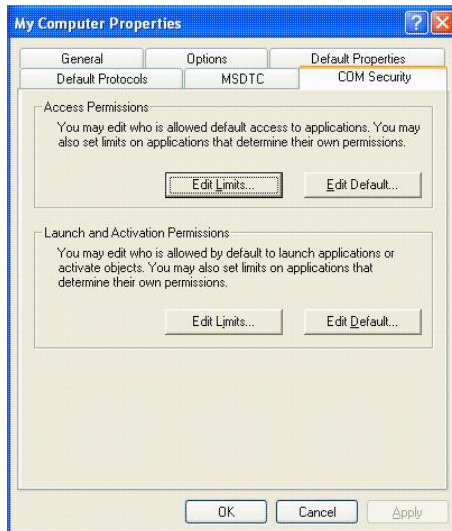
1. Go to Run and type **DCOMCnfg** and click on **OK**



2. Click on **Component Services** under the Console Root to expand it.
3. Click on **Computers** under Component Services to expand it.
4. Right click on **My Computer** in the pane on the right and select Properties:



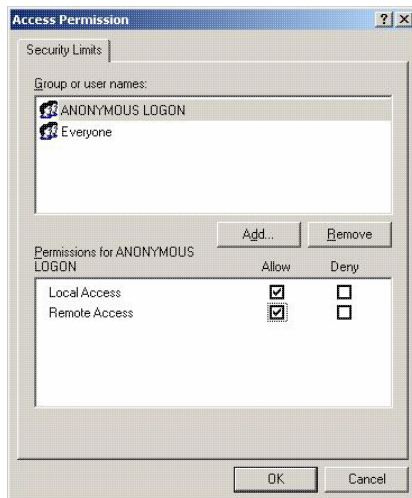
5. Go to the COM Security tab and note these are the four permission configurations that we will have to edit:



6. Click **Edit Limits** button to edit **Access Permissions** to change the access limits.

7. Check the **Remote Access** box for **ANONYMOUS LOGON** and click **OK**

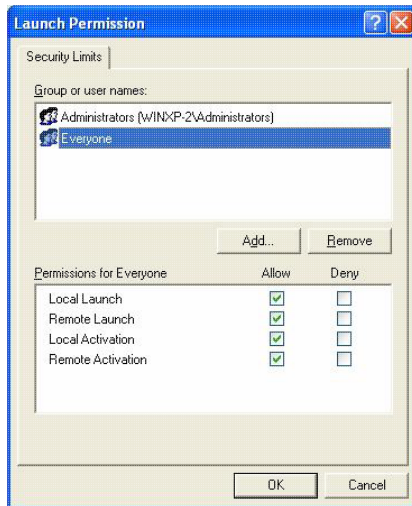
NOTE: This setting is necessary for the **OPCENUM.EXE** to function. Also, some OPC Servers and Clients that set their DCOM "Authentication Level" to 'None' and require this setting to allow for an anonymous connection.



8. Click **Edit Limits** button to edit **Launch and Activation Permissions** to change the launch and activation limits.

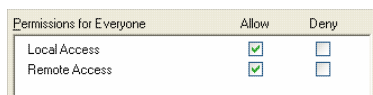
9. Check the **Remote Launch** box for **Everyone** and click **OK**

NOTE: Since **Everyone** includes all authenticated users, it is often desirable to add these permissions to a smaller subset of users in bigger plants with many users. One suggested way to accomplish this is to create a group named "OPC Users" and add all user accounts to this group that need to execute any OPC Server or Client application. Then substitute "OPC Users" everywhere that **Everyone** appears in the following configuration dialogs.



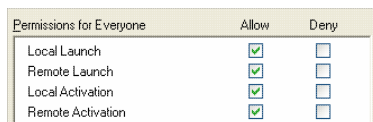
10. Click **Edit Default ...** button to edit **Access Permissions** default permissions.

11. For each user/group that will need access to OPC communication, make sure that both the **Local Access** and **Remote Access** checkboxes are checked under **Allow**. Click **OK**.



12. Click **Edit Default ...** button to edit **Launch and Activation Permissions** default permissions.

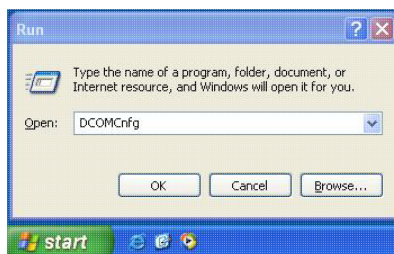
13. For each user/group that will need access to OPC communication, make sure that both **Local** and **Remote** checkboxes are checked under **Allow**. Click **OK**.



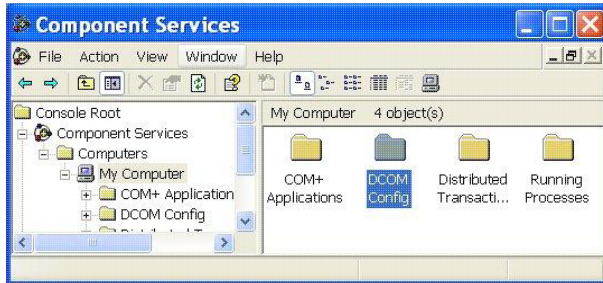
Configuring DCOM Each Server

Follow these steps to configure DCOM for a specific COM server for OPC.

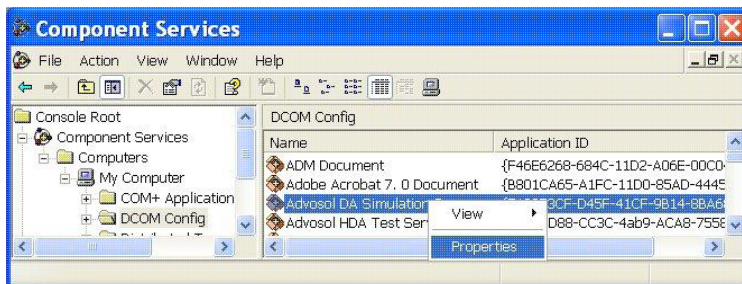
1. Go to **Start -> Run** and type **DCOMCnfg** and click on **OK**.



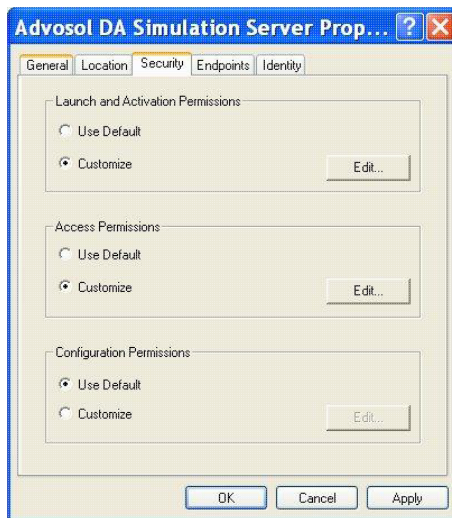
2. Click on **Component Services** under the **Console Root** to expand it.
3. Click on **Computers** under **Component Services** to expand it.
4. Right click on My Computer in the pane on the right and select Properties
5. Double Click DCOM Config



6. Select the OPC Server, right click the selection and then click Properties



7. In the server property page select the Security tab



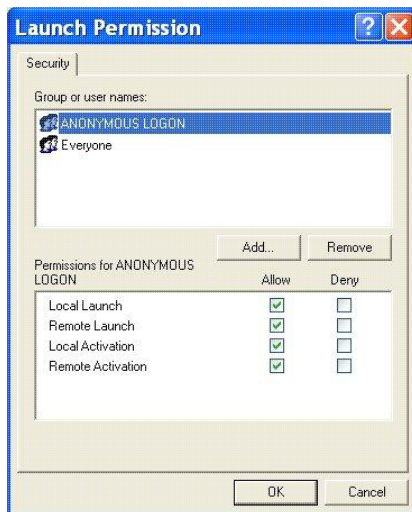
8. Edit the server permissions settings by selecting **Customize** and click the **Edit** button.

9. Edit the **Launch and Activation Permissions**

For each user/group that participates in OPC communication (e.g. .OPC Users.), make sure that both the **Local Allow** and **Remote Allow** checkboxes are both checked.

NOTE: This setting is necessary for OPCEnum.exe to function and for some OPC Servers and Clients that set their DCOM 'Authentication Level' to 'None' in order to allow anonymous connections.

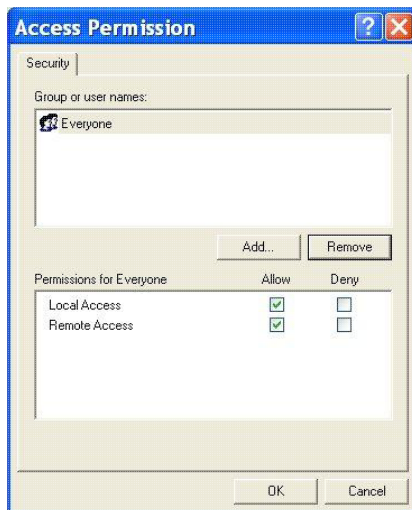
NOTE: Since Everyone includes all authenticated users, it is often desirable to add these permissions to a smaller subset of users. One suggested way to accomplish this is to create a group named .OPC Users. and add all user accounts to this group that will execute any OPC Server or Client. Then substitute "OPC Users" everywhere that Everyone appears in these configuration dialogs.



10. Edit the Access Permissions

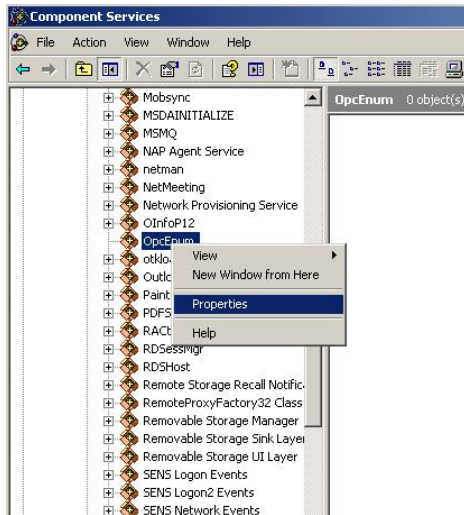
For each user/group that participates in OPC communication (e.g. .OPC Users.), make sure that both **Local** and **Remote** pairs of checkboxes are checked.

NOTE: The Launch and Access users are not necessarily the same, even for a single client application. Windows uses the thread security token for the launch/activation but the process token for the access. The two security tokens may be different.



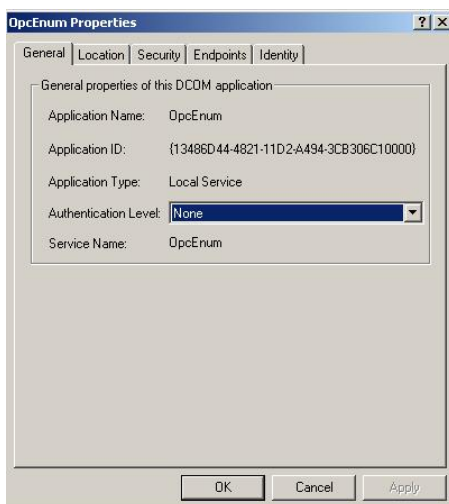
Configuring OpcEnum

OpcEnum is a program that scans your registry for a list of OPC Servers on your computer. Similar to how you just configured the OPC Server you also have to configure OpcEnum. Right click OpcEnum from the DCOM list and choose properties:



Configure the OpcEnum settings according to the screens below:

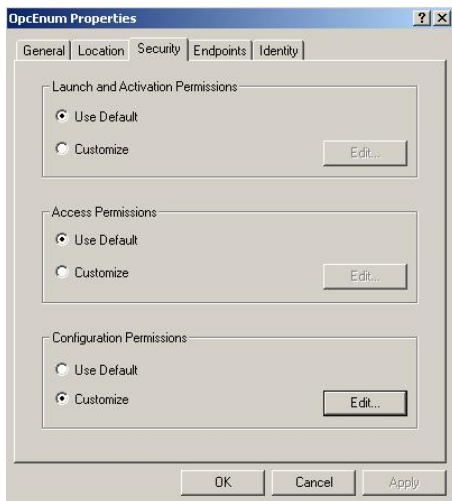
General tab:



Location tab - select Run application on this computer:



Security tab - **Configuration Permissions - Customize:**



For **Configuration Permissions**, choose **Customize** and click the **Edit** button. Add the user "Everyone" and make sure that it has **Full Control** rights. You may also want to add the Users Interactive, Network and System and also give them full control.

Other Considerations

- 1) Enable File Sharing on both computers. Make sure the two computers can share files with each other.
- 2) Have the same login/password combination on both computers
- 3) Make sure the computers are part of the same domain/workgroup
- 4) Make sure OpcEnum is running
- 5) Disable the firewall. If this clears up the problem turn the firewall back on and add the appropriate programs and ports to the exception list.

[Reference ID: 10834]

5.5 Supported variable configurations for interface Q12260

Supported variable configurations for the **Hach WIMS Direct Server-Side Interface to OPC HDA**.

To configure a variable to hold values from OPC HDA, select **Edit/View Variables** in the client and select the **Interface** tab.

Then click **Interface To** radio button. The drop down box next to the option is now enabled, click the drop down arrow and choose the OPC HDA interface name (name given when configuring the interface).


Now you are ready to configure a tag for an OPC HDA system. The **Tag** name and a **Statistic** are all that are mandatory.


- **TAG**
Matrikon.OPC.DesktopHistorian.1.Channel_1.Device_1.Tag_1 This is the OPC HDA tag name.
- **Statistic**
AVERAGE

This is a listing of all the statistics supported by this interface. This includes the following statistics for a specified time period.

AVERAGE	Take the average of the data points
TOTAL	Take the sum total of all values

MINIMUM	Get the minimum value	
MAXIMUM	Get the maximum value	
FIRST	Get the first value	
LAST	Get the last value	
DIFF	Calculate the difference between the first and last values. If the first value is larger than the second then it will perform the following calculation: $(10 ^ {(\text{Ceil}(\text{LOG}(\text{first_value}) / \text{LOG}(10)))) - \text{first_value} + \text{last_value}$ Ceil will cause the value to round up	
RANGE	Calculate the absolute value of the difference between the minimum and maximum values	
COUNT	Counts the number of data points.	
MINTIME	The date and time when the minimum value occurred.	
MAXTME	The date and time when the maximum value occurred.	
TIMEGT(x)	Counts the number of data points greater then 'x'.	
TIMELT(x)	Counts the number of data points less than 'x'.	
TIMEEQ(x)	Counts the number of data points equal to 'x'.	
INVENTORY	Running total of used volume. Only decreases in value are counted. Use the DEADBAND option in Hach WIMS variable setup to eliminate erroneous readings due to noise or vibrations.	

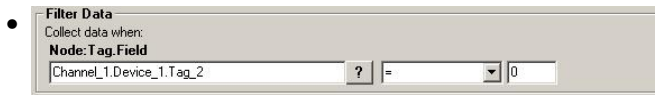
- Scale Factor**
 This is the value to multiply the result by when using parameter variable types. Commonly used to convert from one unit base to another. For example to convert gallons per minute (GPM) to gallons per day (GPD), set the scale factor to 1440 (1440 minutes per day).

- Filter**
 All three fields must have numeric values or the word None (as shown). The Low Range and High Range will crop data from the source. For example to eliminate negative numbers from a particular tag, set the Low Range to 0 (zero) - this will get any values equal to or greater than 0 (zero). The Deadband is used for the statistic Inventory and will eliminate noise levels up to the value specified. For example, if you enter .5 next to Deadband, any value change of .5 or less, will be ignored.

- Start Time** **Stop Time**


- ♦ Start Time will set the beginning of the time slot for this variable.
 - ♦ Stop Time will set the ending time for the time slot.

- ◆ Same Day as Start is only used by daily variables and it means the stop time is on the same day as the start time.
- ◆ Day After Start is also only used by daily variables and it means the stop time is a day after the start time.



Allows you to filter data based on another tag. For example, flow rate while not in backwash, but during backwash we don't want flow rates uploaded to Hach WIMS.

- ◆ Node:Tag.Field is the node, tag, and field associated with what you want to filter by, in our example it would be the backwash state.
- ◆ Middle field is the filter operator. This can be <, >, =, <=, >=, <>, or CYCLESTO.
- ◆ Last field is the filter value. So when the 'backwash state' is greater than 0 (not backwashing) then our system will get values. When the value drops to zero or negative, do not get values.

[Reference ID: 12271]

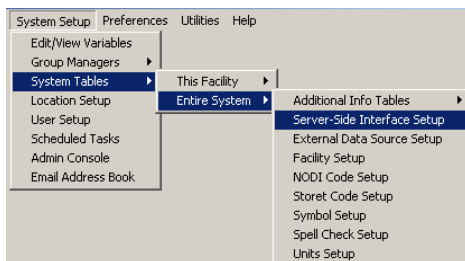
5.6 Using Interface Browser Q12273

Using the interface browser for **Hach WIMS Direct Server-Side Interface to OPC HDA**.

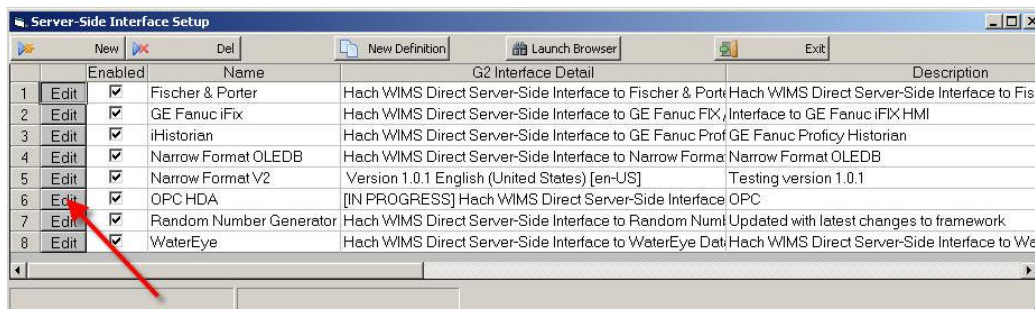
Step 1: While in the Hach WIMS client, select **Edit/View Variables** and click the **Interface** tab.

Step 2: The browser connection must be properly configured. In the Hach WIMS client:

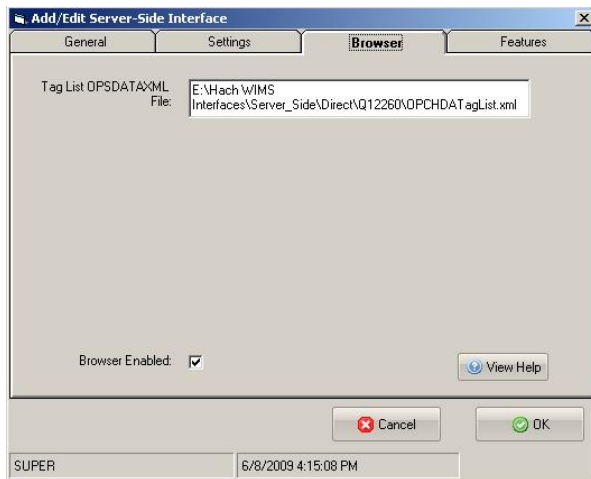
- Select **System Tables -> Entire System -> Server-Side Interface Setup**.



- Select the **Edit** button for the OPC HDA entry that you want to enable the browser for.

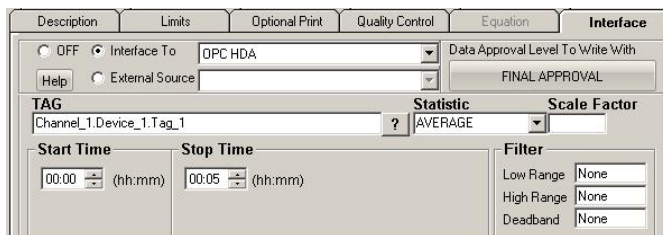


- Click on the **Browser** tab and enter the location of the exported tag list OPSDATAXML file generated in the Source Configuration section of the Interface. The browser will search this file for the available Tag Names. Make sure **Browser Enabled** is checked and click **OK** button.

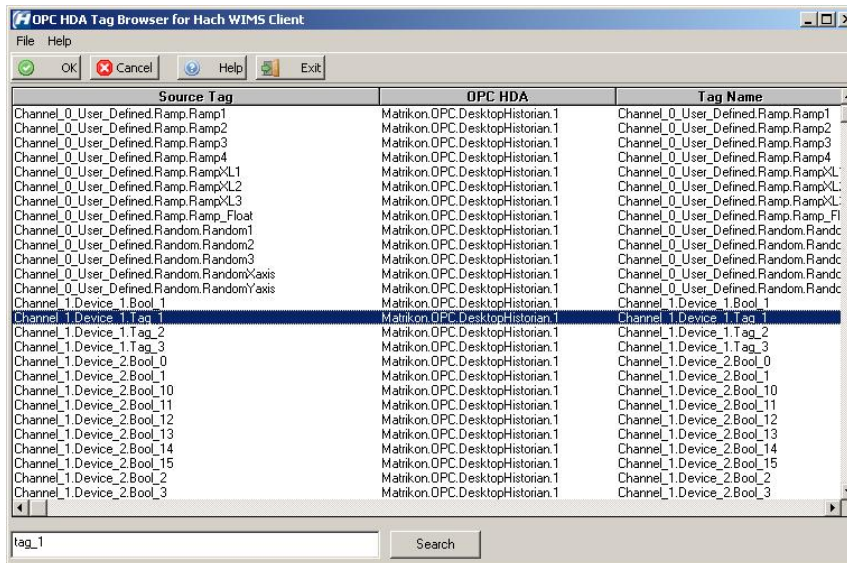


You are ready to view tags from the HMI. Click on **System Setup -> View/Edit Variables** and click on the **Interface** tab.

Click the button with a ? (question mark) on it as shown below:



The browser will load:



Select the appropriate Source Tag and click OK.

[Reference ID: 12270]

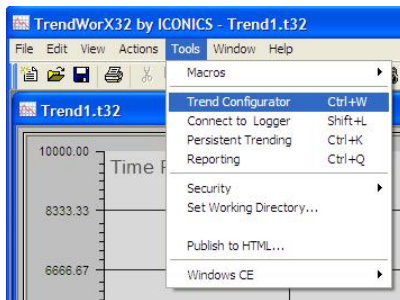
5.7 Using the TWX2OPSEXML Utility

Using the **TWX2OPSEXML** utility to convert an ICONICS TrendWorX Configuration XML file into an OPSDATAXML file to be used by the Hach WIMS Client. This utility reads through the configuration XML file generated by TrendWorX looking for OPC HDA Tags that can be used by Hach WIMS Client. It should be installed on the same computer and in the same directory as the OPC HDA Interface.

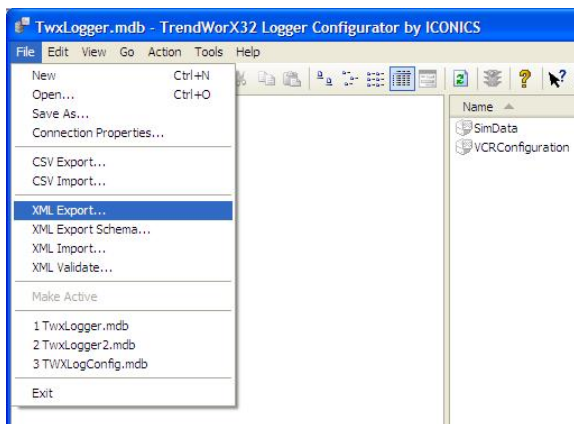
This utility provides a work around for the OPC HDA Interface (Q12260) inability to browse the OPC HDA Tags from the ICONICS TrendWorX OPC HDA Server (see article 12279(See Section 5.2)).

ICONICS TrendWorX32

The first step is to generate a TrendWorX Configuration XML file. In TrendWorX32 by ICONICS, click on the menu Tools and select Trend Configurator.



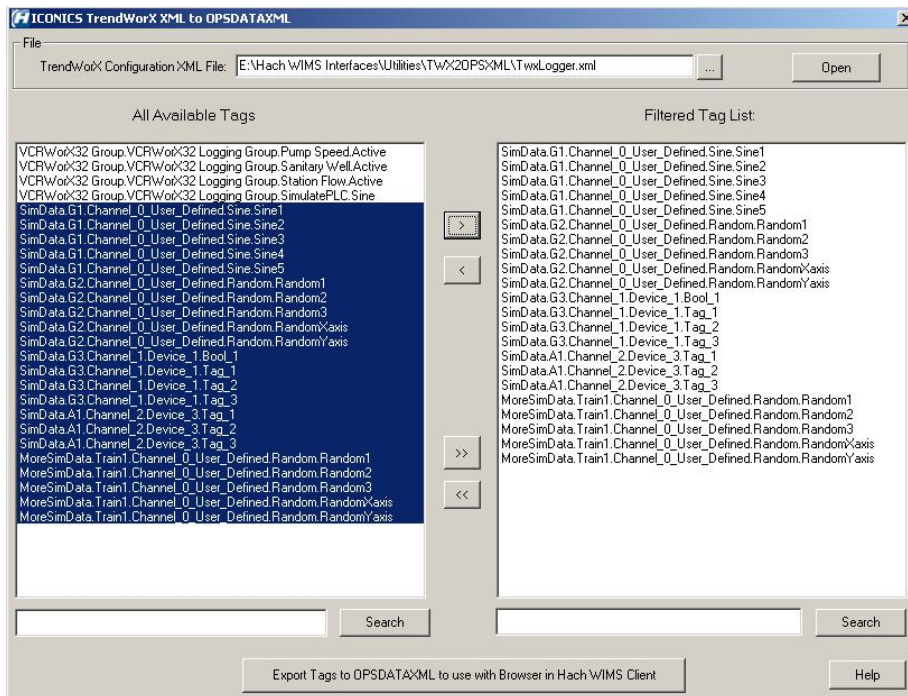
When the TrendWorX32 Logger Configurator by ICONICS loads, click on the menu File and select XML Export... This will create the XML file that the TWX2OPSEXML utility will need.



Remember where the file is saved to. If the TWX2OPSEXML utility is on another computer make a copy of the file and take it over to the computer that has the utility.

TWX2OPSEXML Utility

Once you have the TrendWorX configuration xml file you need to open it up in the TWX2OPSEXML Utility. You can browse to the file and then click open:



All Available Tags: This is a list of all the tags that are available in the ICONICS TrendWorX32 system. This list will probably contain items that you aren't interested in. Highlight the items that you are interested in and click on '>' to add them to the filtered list.

Filtered Tag List: This is the list of tags that will be available to the Hach WIMS Client.

Search Boxes: The search boxes allow you to search the list of tags for a particular string. The search will start from the currently selected tag (or the top if nothing is selected) so you can continue to press the search button to find the next match.

Help: Opens up your Internet Browser to this document.

Export Tags to OPSDATA XML to use with Browser in Hach WIMS Client: This generates an XML file containing the filtered tags that the Source Tag Browser in Hach WIMS Client will be able to read.

[Reference ID: 12281]