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Scheduler

User's Guide

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1. Introduction

The Scheduler is a system tray application that is designed to run in the background. Scheduler works in conjunction with LogView in that the normal Workspace/Project/Datalogger configuration used by LogView is also used by the Scheduler. Any configured and connectable datalogger available in the current workspace can be scheduled for collection and export.

The typical use scenario is that the Scheduler would be used after the logger (to be scheduled) was fully configured in LogView and most likely had at least an initial data collection performed.

Figure 1 shows the system tray popup with the Scheduler icon circled in red.



Figure 1 - Scheduler installed and running in System Tray

2. Installing Scheduler

It is assumed that Scheduler will be installed on a PC where a LogView workspace has already been defined and that valid connections (such as COM ports) to any dataloggers have already been established. It is also assumed that the user is familiar with the Windows Operating System of their PC and can easily navigate to various folders on said PC.

2.1 Requirements

The installation of the Scheduler requires the following:

- A personal computer (PC) operating on Windows 7, 8 or 10 with at least 50 Mbytes of free memory.
- A previously downloaded Scheduler installer in “.zip” form (available on the Geokon website: <http://www.geokon.com/software>).

2.2 Unzipping the Downloaded Installer

The Scheduler installer is downloaded from Geokon’s website as a compressed “.zip” file. Before the installer can be launched it must be “unzipped” by right-clicking on the file, “SchedulerInstall.zip” to bring up the context menu shown in Figure 2.

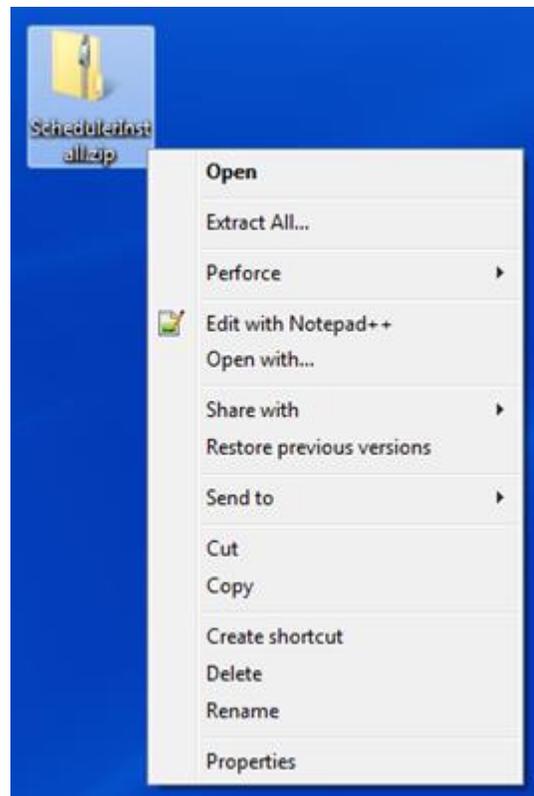


Figure 2 - Right-click Context Menu

From the context menu, left-click on "Extract All..." to show the "Extract Compressed (Zipped) Folders" dialog box shown in Figure 3.

Left-click on the "Extract" button to extract all the contents of the zip file to the destination folder. In the example shown in Figure 3, the destination folder is "SchedulerInstall" on the desktop of user "wtucker". Alternately, click on the "Browse" button to select a different folder before clicking on "extract"

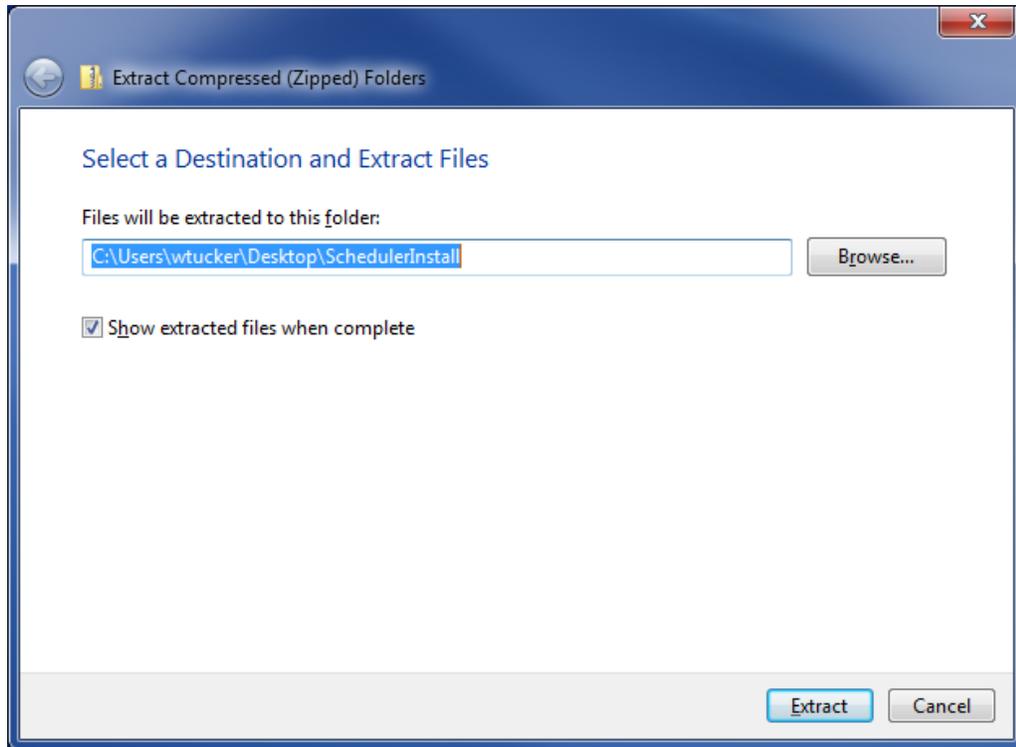


Figure 3 - Extract Compressed Folder dialog

2.3 Launching the Scheduler Installer

Once the installer has been “unzipped”, the install process can be launched by double-clicking on the file “SchedulerInstall.exe” from the install folder (Figure 4).

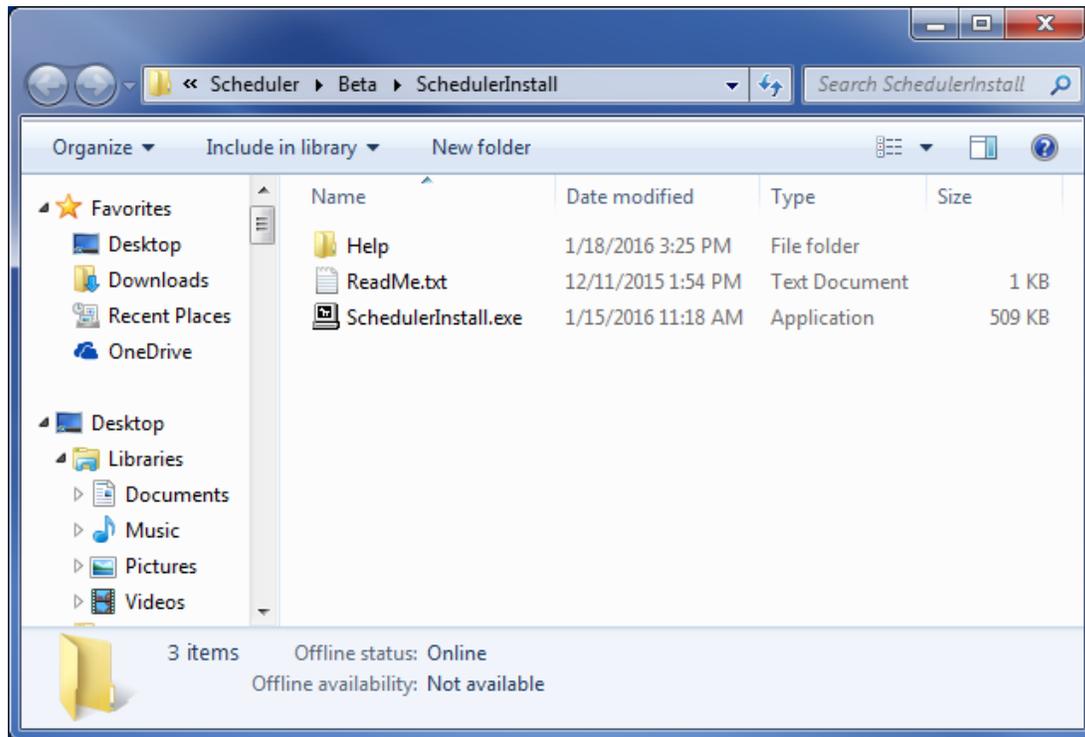


Figure 4 - Install Folder

In the Welcome Screen (Figure 5) click on “Next” to advance to the “Choose Users” screen.

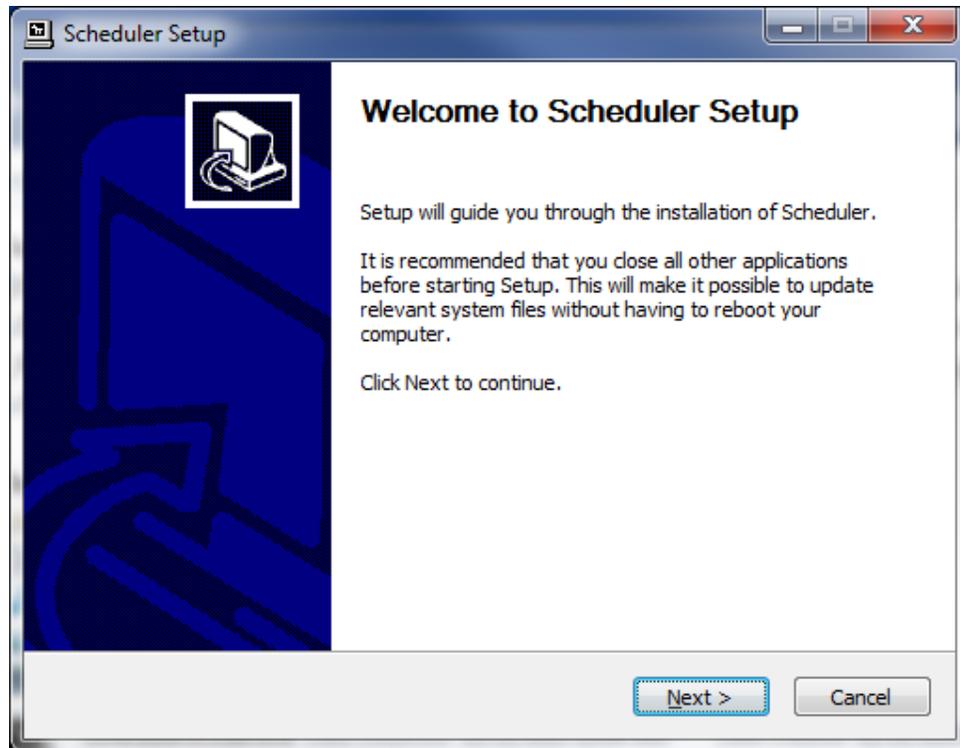


Figure 5 - Welcome Screen

The "Choose Users" screen (Figure 6) offers the choice of installing the program for all users or only the current user. After making a selection click on "Next" to advance to the "License Agreement" screen.

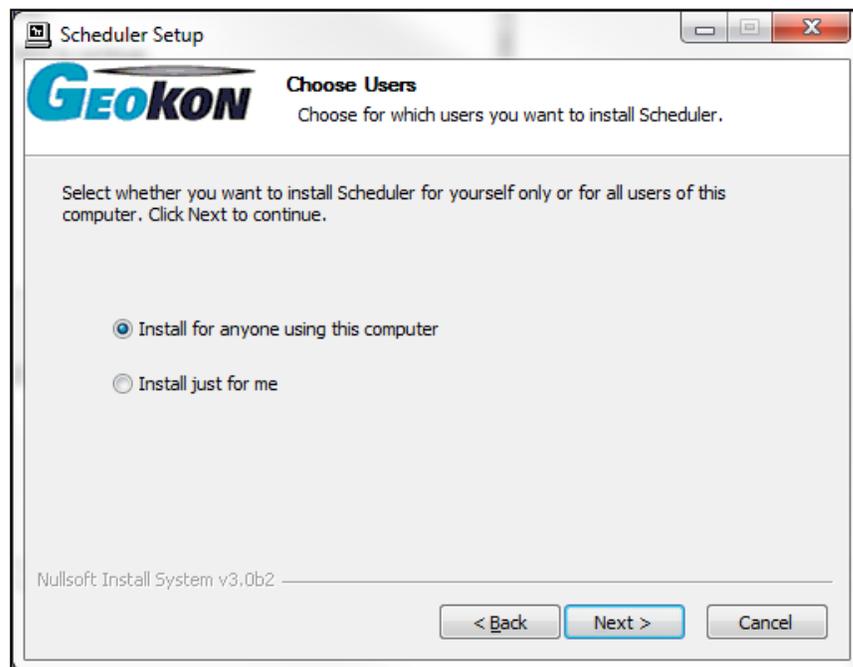


Figure 6 - Choose Users

In the "License Agreement" screen (Figure 7) click on the "I Agree" button once you have read and accepted the license terms. (Note: You must select "I Agree" to continue with the installation.)

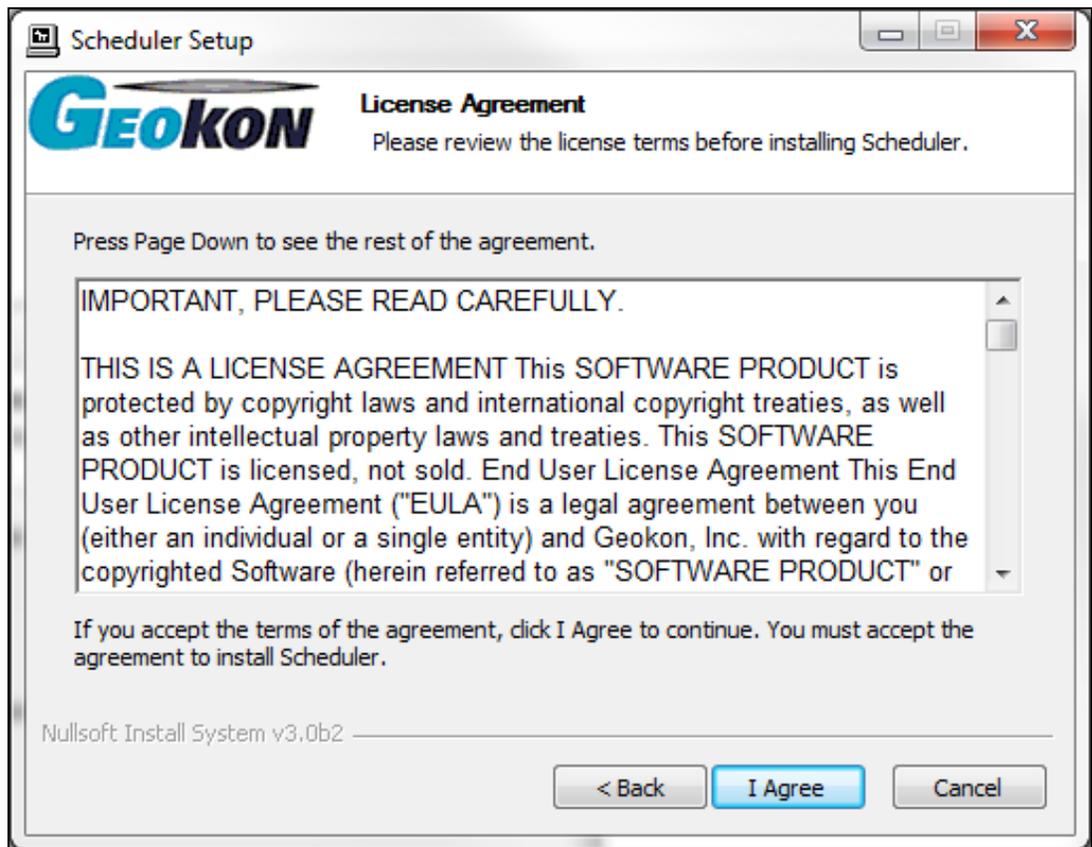


Figure 7 - License Agreement

Once you have agreed to the terms and conditions you will need to choose a "Start" menu folder to install shortcuts in (Figure 8). The default folder is "Geokon".

Once a folder has been selected click on "Install" to continue.

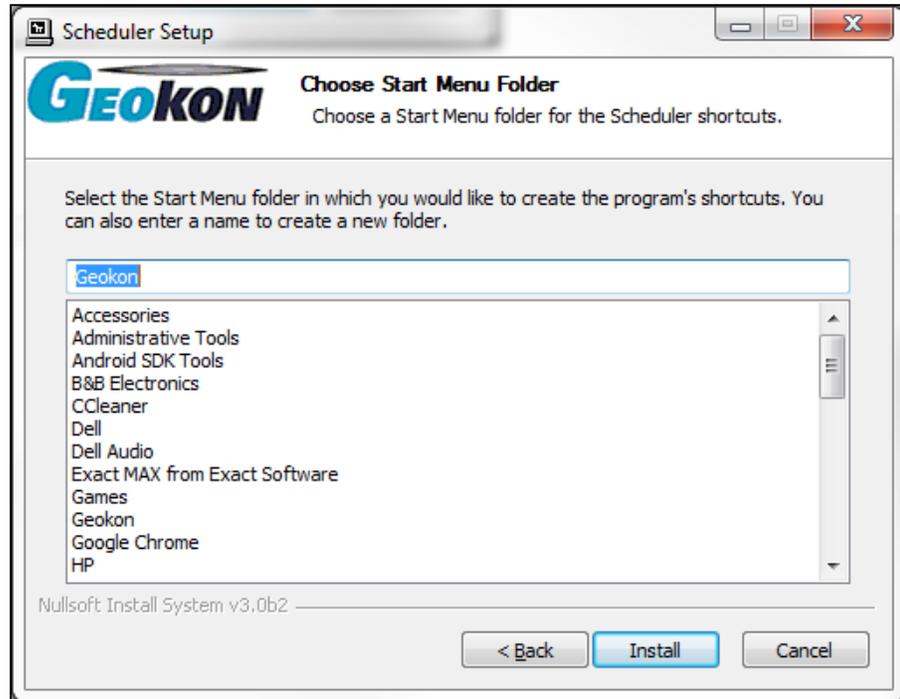


Figure 8 - Choose Start Menu

At this point the Scheduler program will automatically begin installing onto the computer. Once the installation has completed click on "Next" to continue (Figure 9).

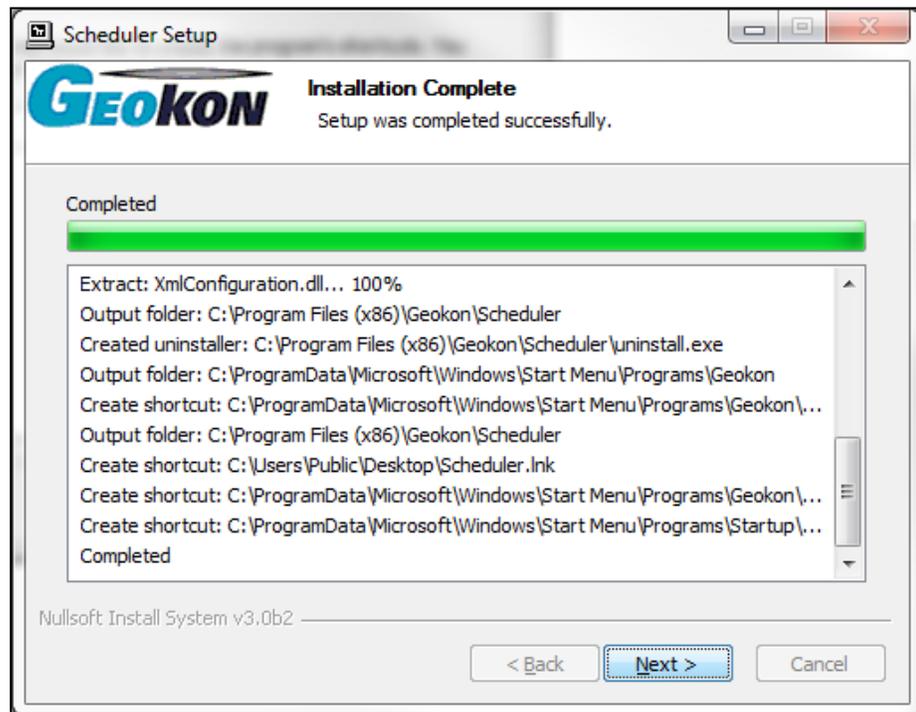


Figure 9 - Installation Complete

Scheduler has now been successfully installed onto the computer. Click the box next to "Launch Scheduler Application" if you wish to launch Scheduler immediately.

Click "Finish" to dismiss the screen and complete the install (Figure 10).

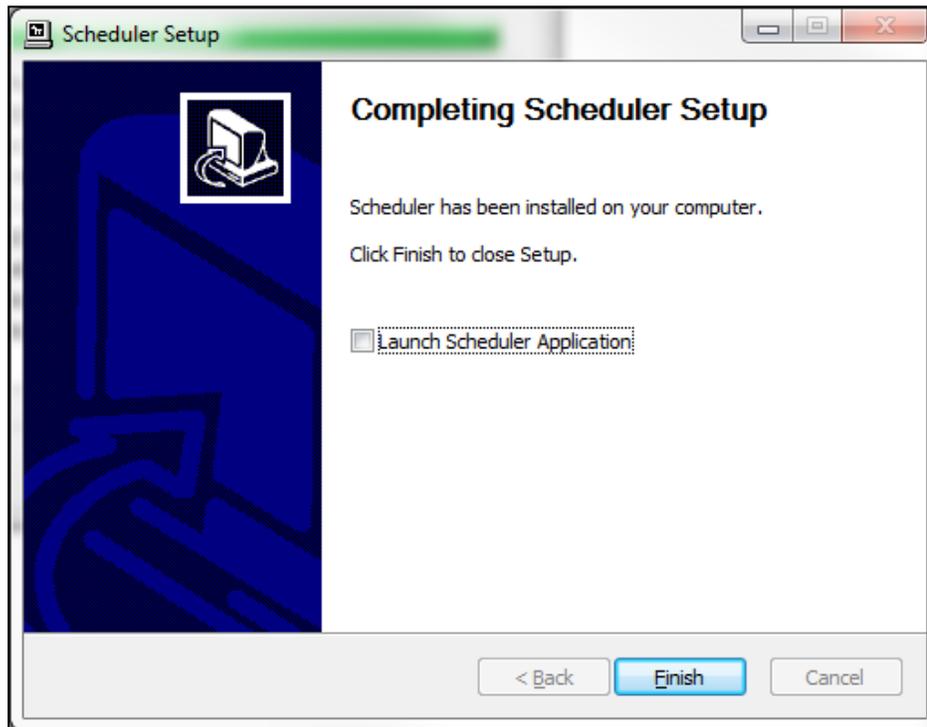


Figure 10 - Launch Scheduler

2.4 Starting the Scheduler the First Time

If the "Launch Scheduler Application" checkbox in the "Completing Scheduler Setup" screen of the installer was **not** checked (see Figure 10) then the application will have to be manually started the first time OR the PC will need to be re-started.

To start the Scheduler manually, click on the "Scheduler" icon in the "Start" menu.



2.5 Starting the Scheduler with an Argument

Optionally, the Scheduler can be launched with a command line argument, "-s", to automatically start up any logger with a collection scheduled. This can be done from a "Command Prompt" window by typing the following:

```
C:\>cd \Program Files (x86)\Geokon
C:\Program Files (x86)\Geokon>cd scheduler
C:\Program Files (x86)\Geokon\Scheduler>Scheduler -s
```

Alternatively, a "batch" file, can be created that contains the line:

```
Start "" "C:\Program Files (x86)\Geokon\Scheduler\Scheduler" -s
```

Double-clicking on a "batch" file (a file of any name with a ".bat" extension) will execute "batch" commands within the file. In the case above, the "Start" command causes the executable file, "Schedule.exe", to be launched with a "-s" command line argument.

Lastly, since the Scheduler is designed to run in the system tray, a "shortcut" is installed in the "Startup" folder. If it's desired that Scheduler always launches with the "-s" argument then this "shortcut" will need to be edited so that the shortcut "Target" points to the batch file described in the previous paragraph.

While the exact procedure for editing a Startup shortcut varies slightly between various operating systems, the basic steps are as below:

1. Click on the "Start" or "Windows" button (usually in the lower-left of the screen).
2. From the resulting "Start" menu, click on "All Programs".
3. Scroll down and click on the "Startup" folder icon.
4. Right-click on the "Scheduler" icon.
5. From the resulting context menu, click on "Properties" and the dialog below (Figure 11 Figure 11 - Startup Shortcut Properties) will be shown.
6. Edit the "Target" to point to the path and "batch" file name that will be used to launch Scheduler with an argument.
7. In Figure 11, the target is a file called "runScheduler.bat" on the desktop of user "wtucker".

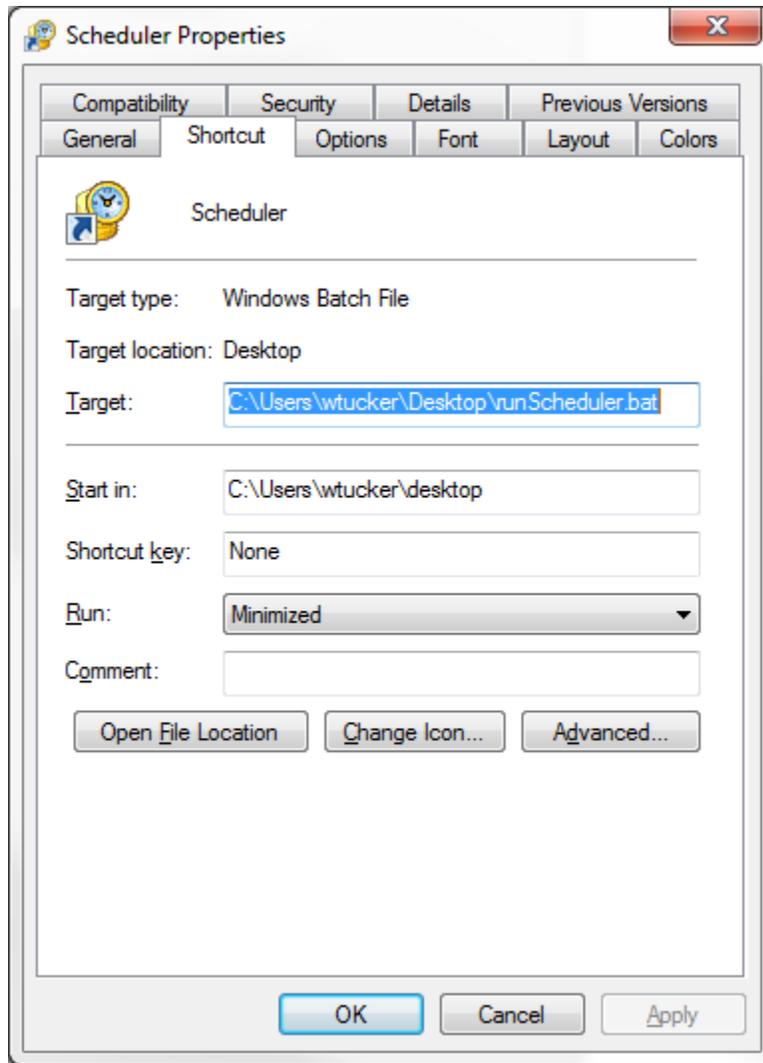


Figure 11 - Startup Shortcut Properties

3. Configuring the Scheduler

After installation, Scheduler will automatically start up when the host PC is booted. As seen in Figure 1, Scheduler installs to the system tray and is accessed from the list of system tray icons. Right clicking on the Scheduler icon will display the context menu shown in Figure 12.

3.1 Selecting Scheduled Dataloggers

The first step of the collection/exporting process is to select datalogger(s) that data will be collected from. This is accomplished either by double-clicking on the system tray Scheduler icon (see Figure 1) or by right-clicking on the Scheduler icon then left-clicking on the "Select Scheduled Loggers" context menu item (see Figure 12). Both methods result in the "Select Scheduled Loggers" dialog being displayed (see Figure 13).

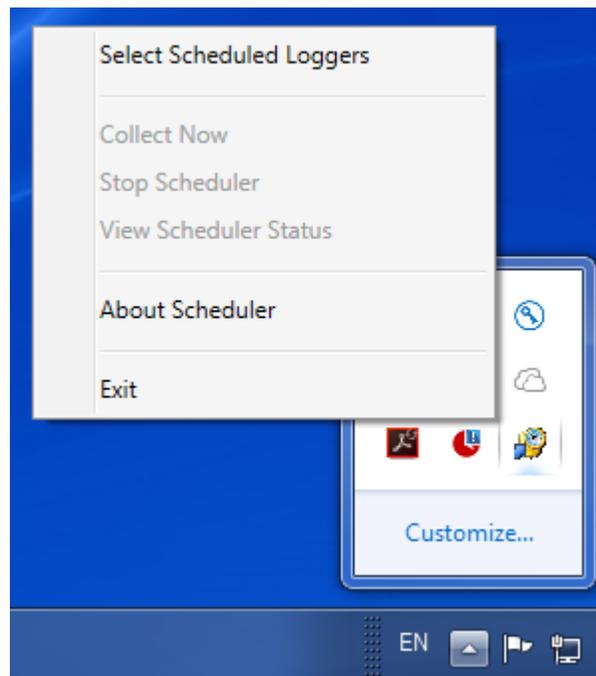


Figure 12 - Scheduler Context Menu

As can be seen in Figure 13, Dataloggers appear below Projects and Projects appear beneath a master Workspace, just as in LogView. Loggers that have been previously "scheduled" are shown beside green circles while "unscheduled" loggers are shown beside red circles.

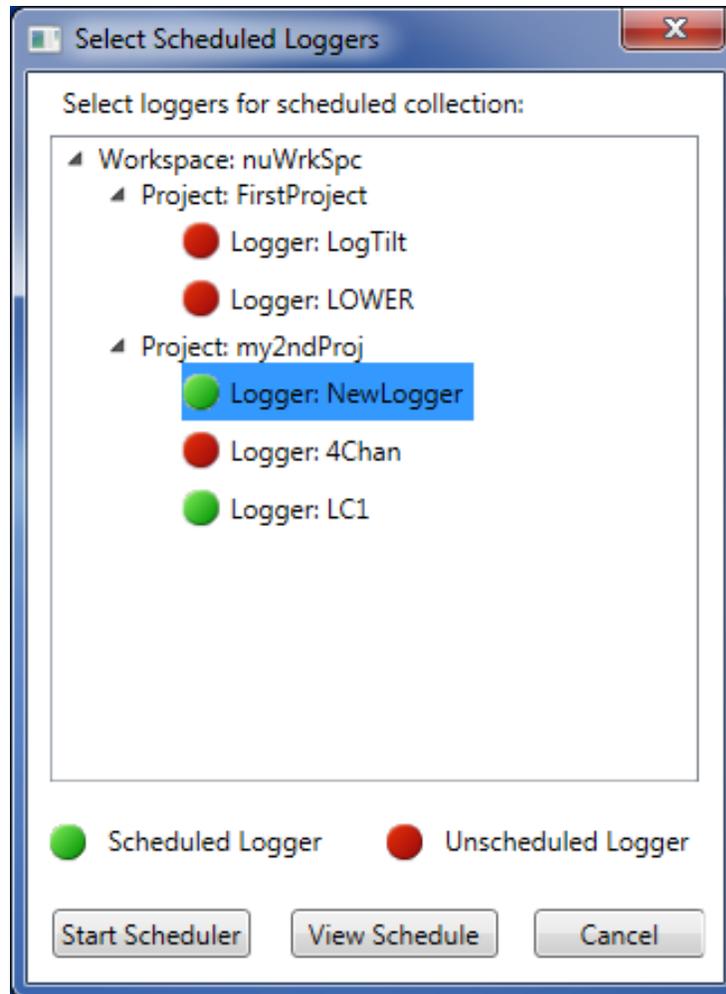


Figure 13 - Select Scheduled Loggers Dialog

Also like LogView, you can select a different workspace from this "Project Explorer" like tree. The following section (3.1.1) details how to switch workspaces.

3.1.1 Changing Workspaces

By right-clicking on the displayed workspace in the Select Scheduled Loggers dialog, a context menu is shown with one menu item, "Change workspace" (Figure 14). Click this menu item to display the Workspace Selection dialog (see Figure 15) allowing the user to open any previously opened workspace or select a workspace from the file system.

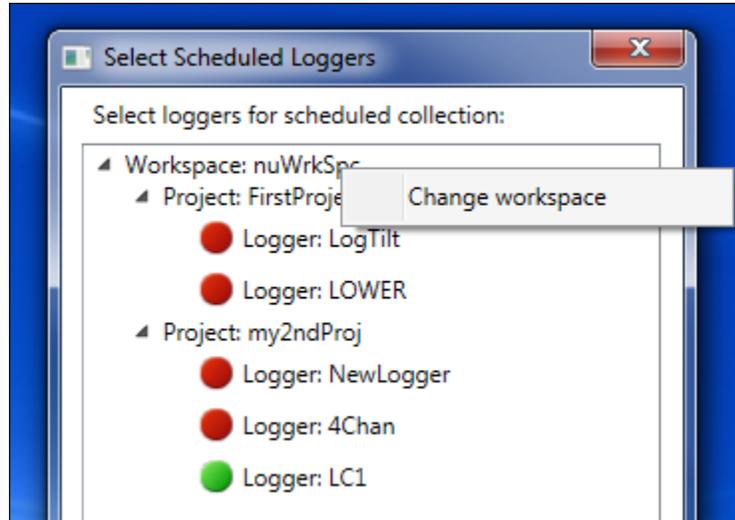


Figure 14 - "Change Workspace" Context Menu



Figure 15 - Select Workspace Name Dialog

As seen in Figure 15, the current workspace is displayed in the "Workspace names:" combo box. Click on the "arrowhead" to the right of the current workspace name to see the drop-down list of available workspaces (Figure 16). Click "Select" to select the workspace choice and to return to the "Select Scheduled Loggers" dialog (Figure 13).

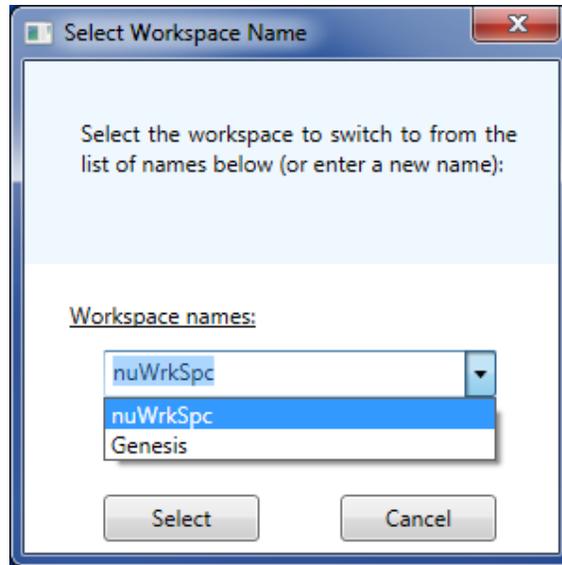


Figure 16 - Select Workspace from Drop-Down List

Alternatively, a new name can be entered in the workspace name selection box. If "Select" is clicked and Scheduler recognizes the name as a workspace it has opened before, it will simply re-open the existing workspace and return to the "Select Scheduled Loggers" dialog (Figure 13).

If the entered workspace name is new to Scheduler then a workspace folder selection window is displayed (see Figure 17) where the user will be prompted to choose or create a folder on the PC where the workspace resides.

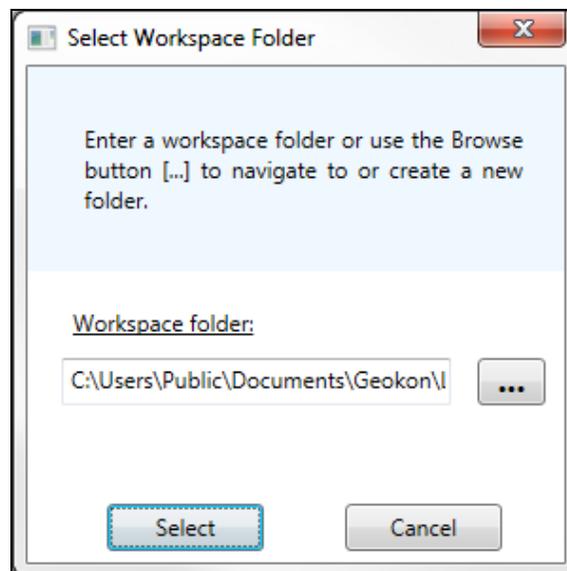


Figure 17 - Select Workspace Folder Dialog

The "Workspaces folder" entry (see Figure 17) is initially populated with a default workspace location consisting of a folder name the same as the workspace name, following a special shared folder reserved for workspaces.

For Windows PC devices, this shared workspace folder is located at:

```
C:\Users\Public\Documents\Geokon\LogView\Workspaces
```

The Scheduler will append the name of the new workspace to this shared folder and use it as the location to look for an existing (or new) workspace. The user is also free to select their own location, either by entering it directly, or the browse [...] button may be used to navigate to a different folder location (or to create a new folder). When satisfied with the workspace name and location, click on "Select" to open the existing workspace (or create a new one).

If the name of the workspace entered is different than the workspace found in the workspace folder, a warning dialog will be displayed (Figure 18).

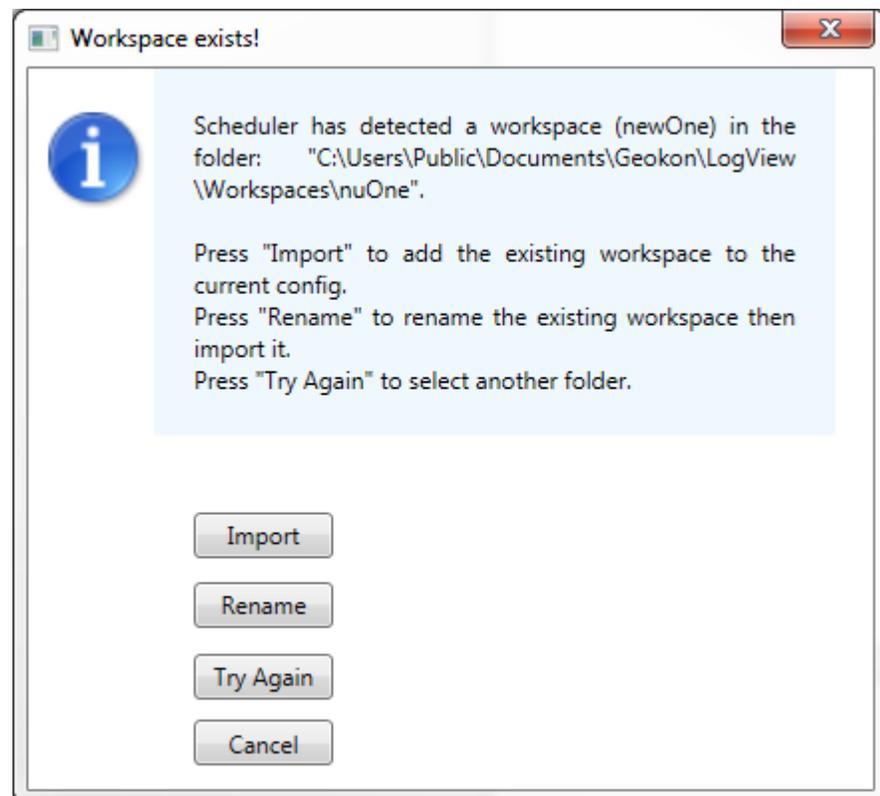


Figure 18 - Workspace Exists Dialog

Click on "Import" to use the existing workspace's name or click "Rename" to rename it with the entered workspace name.

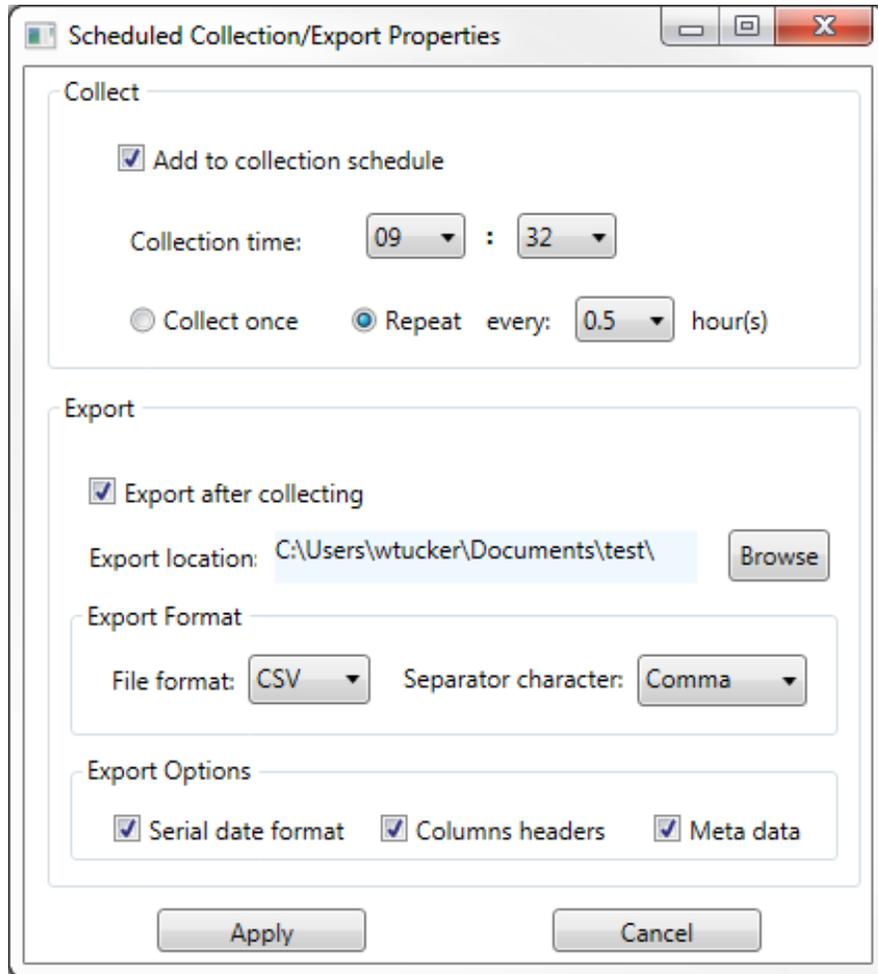


Figure 19 - Scheduled Collection/Export Properties Dialog

3.1.2 Scheduler Properties

To view the “schedule” properties, in the “Select Scheduled Loggers” dialog (Figure 13), click on a logger to select it, then click on the “View Schedule” button to display the “Schedule Collection/Export Properties” dialog (Figure 19). This dialog can also be displayed by right clicking a datalogger from the “Select Schedule Loggers” dialog and then clicking on “View Schedule Properties” from the resulting context menu.

The Scheduler Properties Dialog (see Figure 19) contains two sets of properties, one set for collection and one set for exporting. The sections below describe these sets in more detail.

3.1.2.1 Collection Properties

The Collection Properties are described in more detail below:

- Add to collection schedule** - The most important of the Collection Properties; if unchecked, the Scheduler will **not** perform a collection (or export) on this datalogger.
- Collection Time** - Set the hour (0 - 23) and the minute (0 - 59) when the collection should start. Setting the Collection Time to "22:30" will cause the Scheduler to start a data collection for this datalogger at 10:30 PM. **Note:** if the collection time is set to a value *before* the current time then the collection **will not** start until the following day.
- Collect once** - If this radio button control is selected then the Scheduler will perform only one collection at the time specified in the "Collection Time".
- Repeat every:** - If this radio button control is selected then the Scheduler will perform an initial collection at the time specified in the "Collection Time". After that the Scheduler will perform a collection at the interval specified in the drop-down box just to the right of the "every:" label. The collection interval is specified in hours and is selected from the following set: .25, .5, 1, 2, 3, 4, 6, 8, 12 and 24.

3.1.2.2 Export Properties

If the datalogger is scheduled for collection in section 3.1.1, there are several more properties that must be configured to successfully export the raw data that is collected. The properties are describe in detail below:

- Export after collecting** - Must be checked to command the Scheduler to perform an export of the raw data collected from the selected datalogger immediately following the collection.

Export location - Choose the folder where the raw data file will be exported to. Use the "Browse" button to use an Explorer Window to select the "Export folder".

File Format - Select one of the following:

VDV - Data file(s) are exported in a format that is easily imported into Vista Data Vision software. The exported data is formatted and saved as a ".dat" file in the export folder. For the datalogger selected in Figure 13, the export file name would be in the format, "NewLogger_YYYYMMdd_HHmmss.dat". Along with the exported data file, a "NewLogger_YYYYMMdd_HHmmss.txt" file is also saved in the export folder. This file is used by Vista Data Vision software to provide column names for the exported data. When "VDV" is selected for File Format, all other selections below are disabled.

CSV - Data files are exported in a Comma Separated Value (CSV) format, which is easily opened by Microsoft Excel. For the datalogger selected in Figure 13, the export file name would be in the format, "NewLogger_YYYYMMdd_HHmmss.csv", when saved in the export folder, "C:\Users\wtucker\Documents\test\".

DAT - Data files are exported in a standard text data format (.dat) similar to CSV format. For the datalogger selected in Figure 13, the export file name would be in the format, "NewLogger_YYYYMMdd_HHmmss.dat", when saved in the export folder, "C:\Users\wtucker\Documents\test\".

TXT - Data files are exported in a standard text data format (.txt) similar to CSV format. For the datalogger selected in Figure 13, the export file name would be in the format, "NewLogger_YYYYMMdd_HHmmss.txt" when saved in the export folder, "C:\Users\wtucker\Documents\test\".

Separator Character - Select one of the following:

Comma - Fields are separated within a data file by a comma (,) character.

Semicolon - Fields are separated within a data file by a semicolon (;) character.

Tab - Fields are separated within a data file by a tab (ASCII 09) character.

Export Options:

Serial date format - When checked, all date and time columns, except the year (yyyy), are replaced with a decimal number representing the number of days since 1/1/1900. The number will contain a fractional part which represents a percentage of 24 hours. For instance, the number, 40532.75394, represents the date: 12/20/2010 and the time: 18:05:40. This option is **not** available when Export File Format is set to: *VDV*.

If unchecked, the date and time columns are determined by the parameters set in the "Data Collection Options" tab of the LogView's DataLogger Settings Dialog. See the LogView online help section on "DataLogger Settings - Data Collection Options".

Column headers - When this option is selected, a line of text is added to the exported data file containing data column names. This option is **not** available when Export File Format is set to: *VDV*.

Meta data - When this option is selected, several lines of text are added to the top of the export file. LogView metadata consists of: workspace and project names, scan interval, collection date and number of sensors. This option is **not** available when Export File Format is set to: *VDV*.

After all Collection and Export properties have been set, click on "Apply" (see Figure 19) to save the changes and dismiss the Schedule Properties window.

3.2 Starting the Scheduler

After properties of all dataloggers that are scheduled have been set, click on the "Start Scheduler" button (see Figure 13) to start the Collection/Exporting scheduling process. The Scheduler context menu items, "Collect Now", "Stop Scheduler" and "View Scheduler Status" be enabled (see Figure 20) when the Scheduler is running. These enabled context menu items are described in more detail below:

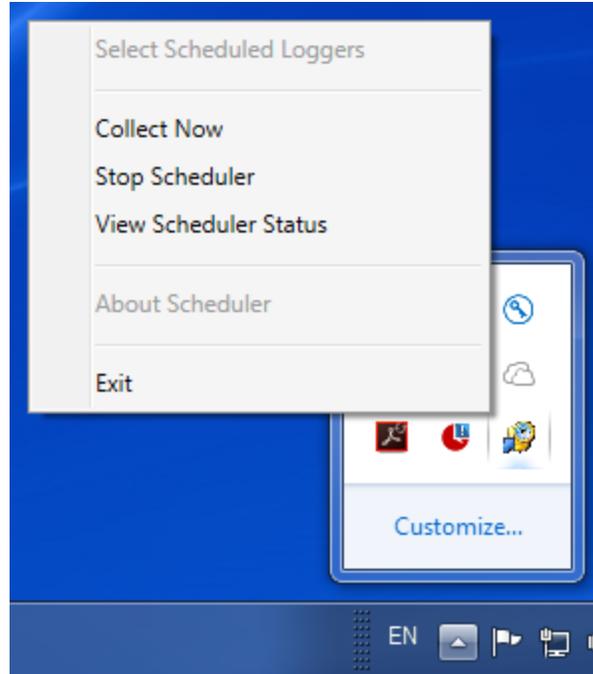


Figure 20 - Scheduler Started

3.2.1 Collect Now

Clicking on the "Collect Now" context menu item initiates an immediate collection/export of data from all dataloggers that are scheduled for collection. The dataloggers are collected/exported from in the order that they appear in the "Scheduled Loggers" tree (Figure 13).

3.2.2 Stop Scheduler

Clicking on the "Stop Scheduler" context menu item immediately aborts all scheduled collections/exports and returns the Scheduler to idle mode, waiting for a new schedule to be defined (see Figure 12).

3.2.3 View Scheduler Status

Clicking on the "View Scheduler Status" context menu item displays a dialog containing a list of the dynamic statuses for all pending collections and exports (Figure 21). This list contains an entry for every scheduled datalogger.

Logger Name	Event Time	Previous Status	Current Status
LOWER	12/22/2015 16:22:27		Waiting to Start
LC1	12/22/2015 16:54:20	Export Done (3)	Waiting to Start

Figure 21 - Scheduler Status Dialog

For a complete list of the all the statuses for an individual datalogger, click on a row in the list, enabling the “History” button. Click on the “History” button to display the Status History screen containing all current and previous statuses for the selected datalogger (Figure 22).

Event Time	Event Status
1/14/2016 15:20:31	Waiting to Start
1/14/2016 15:25:00	Connecting...
1/14/2016 15:25:06	Collecting...
1/14/2016 15:25:21	Disconnecting...
1/14/2016 15:25:21	Collection Done (1)
1/14/2016 15:25:32	Exporting...
1/14/2016 15:25:34	Export Done (1)
1/14/2016 15:25:34	Waiting to Start
1/14/2016 15:40:00	Connecting...
1/14/2016 15:40:03	Collecting...
1/14/2016 15:40:13	Disconnecting...
1/14/2016 15:40:24	Waiting to Start
1/14/2016 15:55:00	Connecting...

Figure 22 - Status History Screen

4. Scheduler Operation

In addition to the "Scheduler Status" dialog, a pair of log files are maintained to record scheduler events as well debug Scheduler errors. These log files are called, "CollectionStatus.log" and "TrayTest.log" and are located in the following folder:

```
C:\Users\CURRENT_USER\Documents
```

The "CollectionStatus.log" file contains generic Scheduler status messages while the "TrayTest.log" file contains more specific program related messages.

The Scheduler is a multi-threaded program that is capable of scheduled collections on several dataloggers at the same time, provided that each datalogger has a unique connection, for example, COM Port, TCP/IP connection, etc.

Despite the fact that the scheduler can perform simultaneous collections, this may not always be a good idea. When connections are not robust (cell modems, etc.), it can be difficult deciphering multiple log entries with time stamps close together.

It is also recommended that the scheduled collection interval be longer than datalogger scan interval. In other words if the datalogger is set to take readings every 30 minutes, it's a good idea to have the scheduled interval be greater than or equal to 30 minutes as well. Otherwise there will be scheduled collections where nothing is collected and the Scheduler will flag this as an error. The next scheduled collection will likely result in data collected but the error statuses remain and may be disconcerting to some users.