

LGH File Inspector for Wonderware InTouch User Guide



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LGH File Inspector

LGH File Inspector is the application you use to read Wonderware InTouch historical log files, analyze and export the results to Microsoft Excel. These historical log files are created daily by Wonderware InTouch SCADA applications and are commonly referred to as LGH files because they have a file extension of .lgh.

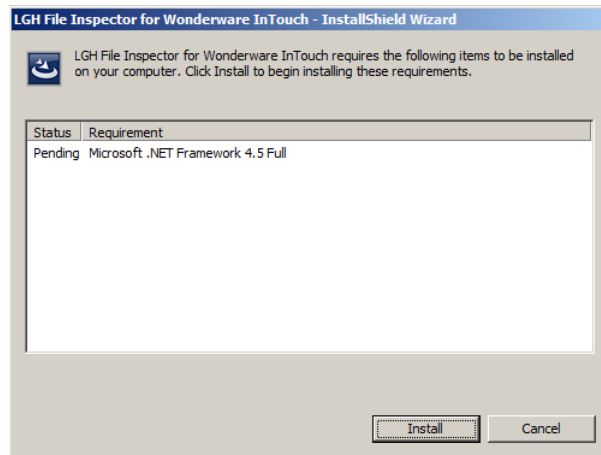
The LGH File Inspector application supports the following features:

- Automatic tag discovery
- Querying of data using a
 - Start Date and Time
 - Duration (length of query)
 - Interval (the amount of time between rows of data)
- Export of query results to a new or existing Microsoft Excel workbook
- Export of query results to a new or existing comma separated value (CSV) file.
- Saving configured queries to a file.
- Configuring automatic actions to execute when an LGH File Inspector Query file is opened directly by double-clicking the file from Windows or when executed from the Windows Task Scheduler program.

Installing LGH File Inspector

To install the application,

- Click **setup.exe** from the installation folder containing the setup.exe file. The LGH File for Wonderware InTouch – InstallShield Wizard will appear.
- If the Microsoft .NET 4.5 Framework is not detected on your system, you will be asked to install it or cancel the installation altogether. Click the Install button to install the .NET 4.5 Framework and continue the installation.



Note: A system reboot may be required for some operating systems after .NET has been installed.

- Step through the Wizard to continue until the installation is complete.



- The application will be installed by default to the following folder:
 - C:\Program Files\WorkSmart Automation\LGHFileInspector\ (32-bit OS)
 - C:\Program Files (x86)\WorkSmart Automation\LGHFileInspector\ (64-bit OS)
- Shortcuts are automatically installed on the Windows Start menu in the program group:
 - WorkSmart Automation.
 - LGH File Inspector for Wonderware InTouch

Remarks:

WorkSmart LGH File Inspector requires .NET 4.5 and can be installed on the following operating systems:

- Windows Vista SP2 (x86 and x64)
- Windows 7 Service Pack 1 (x86 and x64)
- Windows 8 (x86 and x64)
- Windows 10 (x86 and x64)
- Windows Server 2008 SP2 (x86 and x64)
- Windows Server 2008 R2 SP1 (x64)
- Windows Server 2012

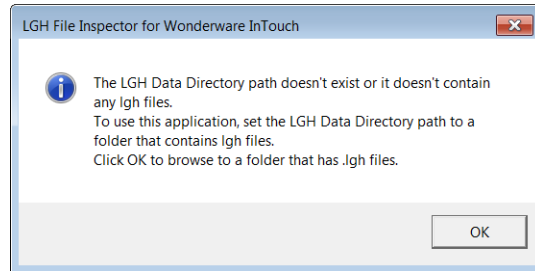
Note: Windows 8 and Windows Server 2012 include the .NET Framework 4.5.

For best results, install on a machine that has a multi-core processor and at least 2 GB of RAM.

Starting LGH File Inspector

To start the application, click its icon (*LGH File Inspector for Wonderware InTouch*) from the **Windows Start Menu**.

If the application is being run for the first time you will need to tell it where your .lgh files exist. The following message will appear informing you that it needs to know the location of the files. Click **OK** to begin browsing to the folder on your computer where the .lgh files exist.



Once the LGH File Data Directory path is set, LGH File Inspector will automatically discover the tag names found in the most recent .lgh file and present them in the Tags Available to Query list. Once the list is populated, you can begin using LGH File Inspector.

Remarks:

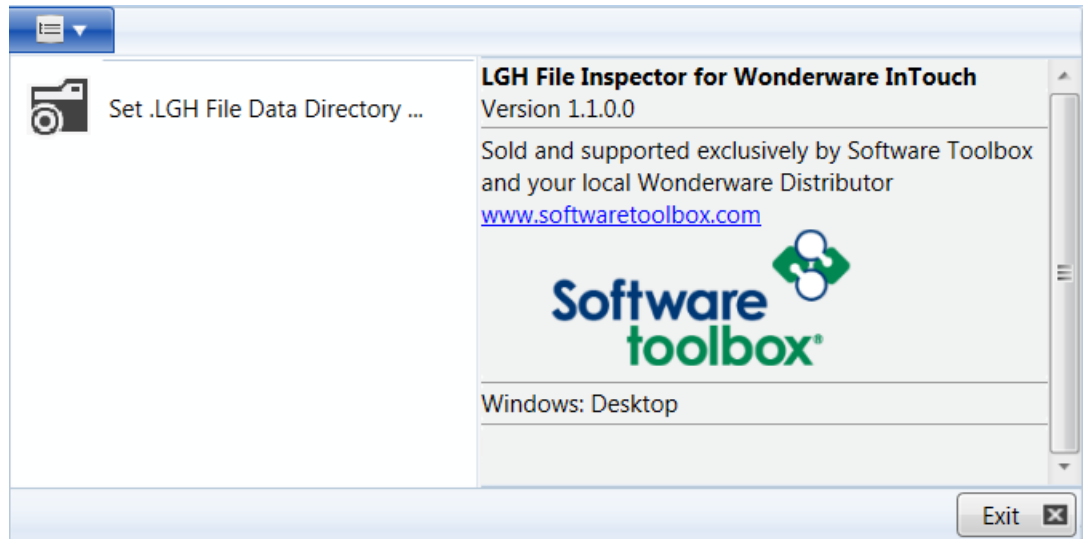
LGH File Inspector .LGH File Data Directory can be set to a local or network path. Performance is improved when the .lgh files are on the same machine as LGH File Inspector.

The LGH File Data Directory path can be changed at any time using the Set **.LGH File Data Directory...** menu item from the **Application** menu.

Changing the LGH Data Directory

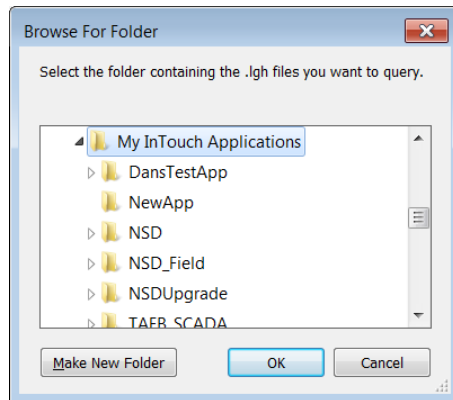
To change the setting of the LGH directory to a different location, perform the following steps:

1. Click **Set .LGH File Data Directory...** from the **Application** menu.



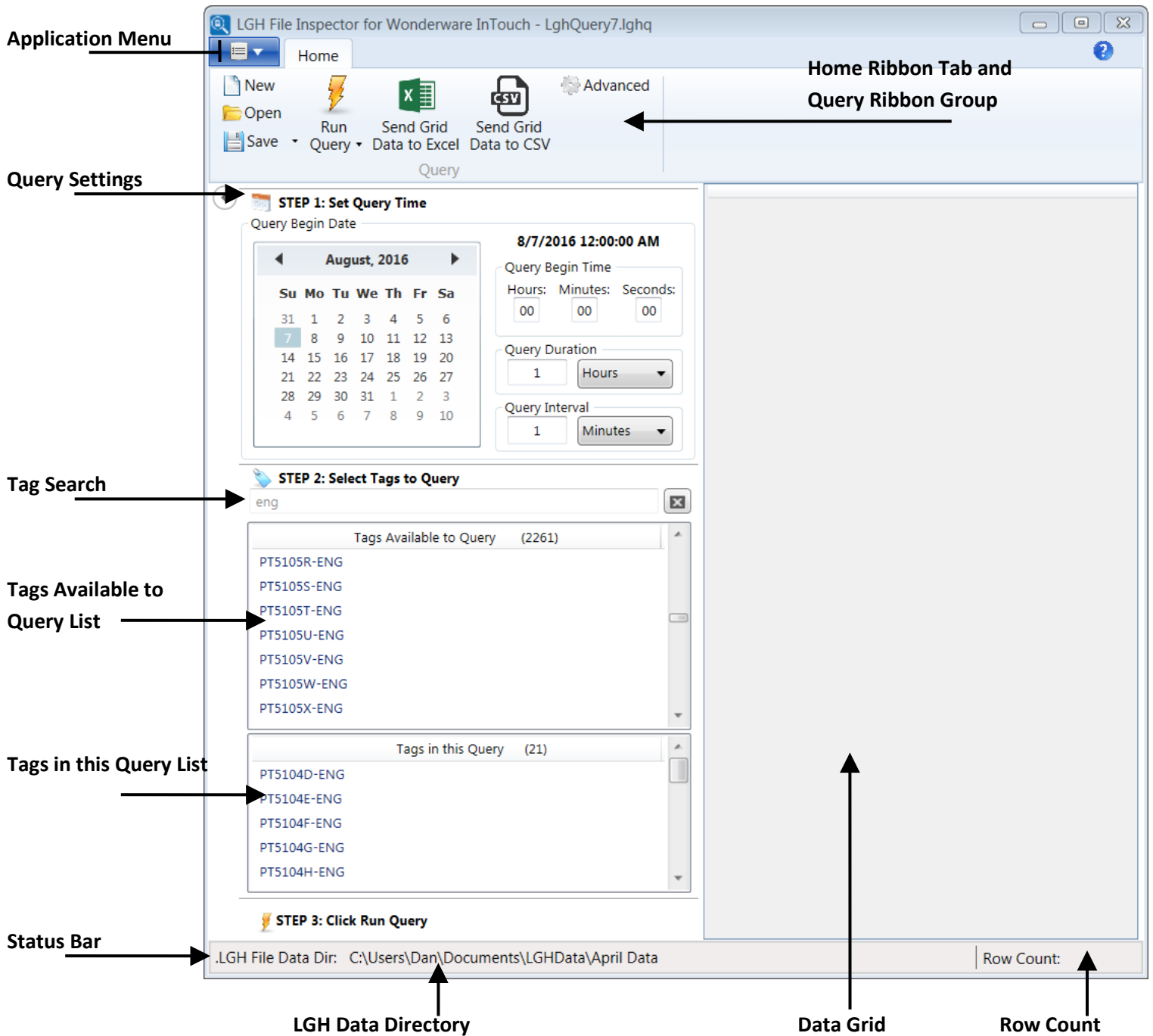
The **Browse for Folder** dialog window will appear.

2. Browse to the new location of your .lgh files and click **OK**.



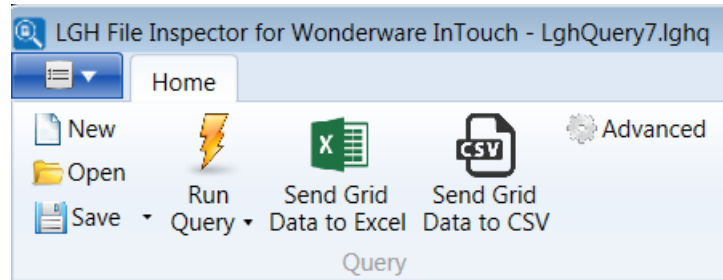
LGH File Inspector Application Window

The following graphic displays the application workspace:



Query Ribbon Group

The following graphic displays the Query Ribbon Group located on the Home Ribbon Tab of the application.



New – Creates a new query with default settings.

Open – Opens an existing LGH File Inspector query file.

Save – Saves changes to the active query.

Save As – Saves a copy of the active query as new file.

Run Query – Executes the active query and sends results to the data grid.

To Data Grid – Executes the active query and sends results to the data grid.

To Excel Workbook – Executes the active query and sends results to an Excel Workbook

To CSV File – Executes the active query and sends results to an CSV file.

Send Grid Data to Excel – Displays the **Send Grid Data to Excel** window that provides options for exporting data in the Data Grid to an Excel workbook.

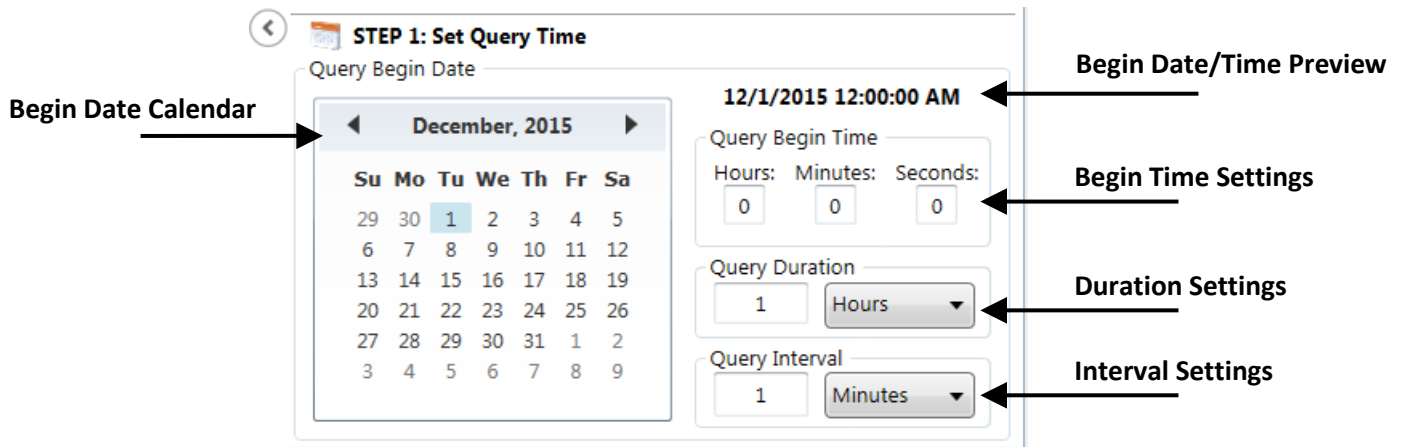
Send Grid Data to CSV – Displays the **Send Grid Data to CSV** window that provides options for exporting data in the Data Grid to a CSV file.

Advanced – Displays the **Advanced Query Settings** window where you can configure actions the query will perform when it is opened outside of the LGH File Inspector Application.

Query Step 1: Set Query Time

The following graphic displays the **STEP 1: Set Query Time** area. This area is where ad-hoc query settings are configured and previewed including:

1. Begin Date Calendar
 - Select query beginning date
2. Begin Time hours, minutes, and seconds
 - Enter query beginning hours, minutes and seconds
 - Hours accepts whole numbers from 0-23
 - Minutes and seconds accept whole numbers from 0-59
3. Query Duration (the length of time to query for)
 - Enter number and unit of time
 - Accepts whole numbers from 0-999
4. Query Interval (how often to space data)
 - Enter number and unit of time
 - Accepts whole numbers from 0-999



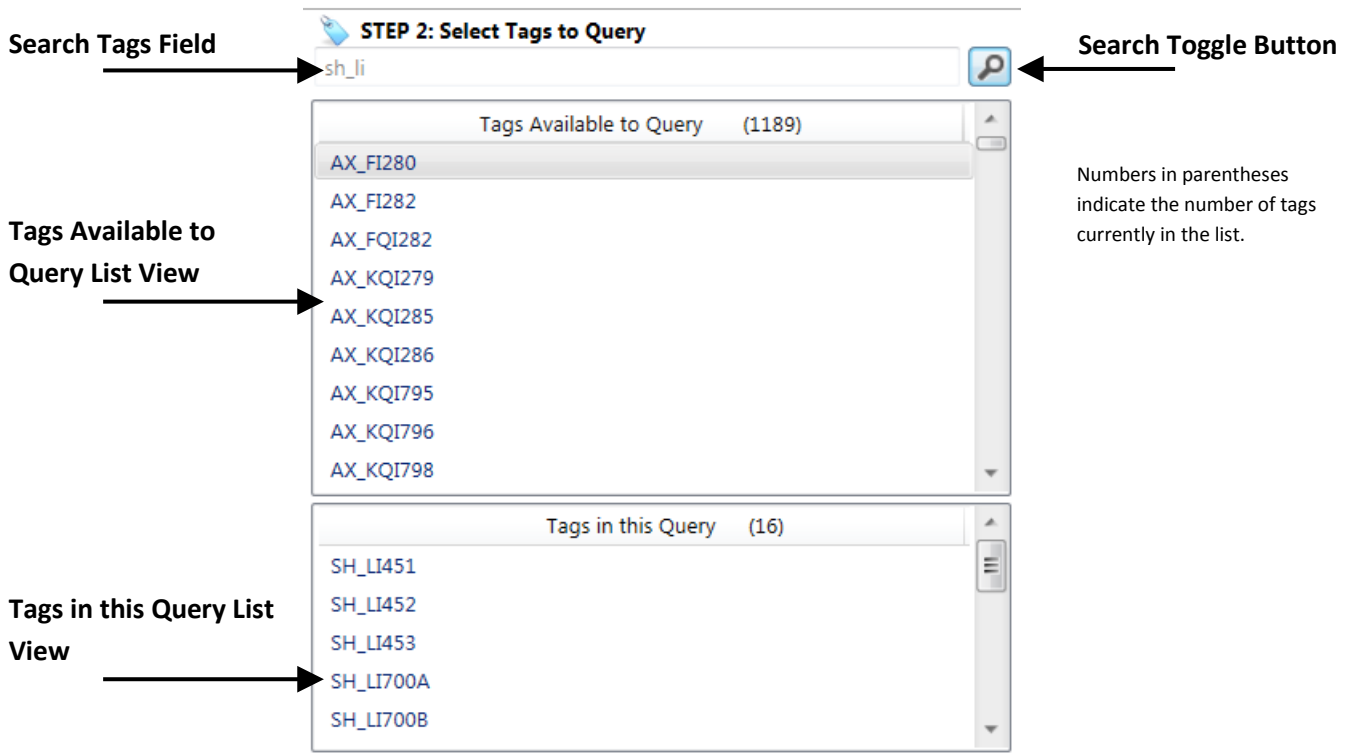
Remarks:

The result of the query settings can be previewed in the **Begin Date/Time Preview** display.

Query Step 2: Select Tags to Query

The following graphic displays the **STEP 2: Select Tags to Query** area. This area is where the tags to query are selected for querying.

1. Search for tags of interest in the tag search field by entering words to search for and then click the **Search Toggle** button. Any tags containing the text will be returned.
2. Select one or more tags from the **Tags Available to Query** list. Use **Shift + Click** or **Ctrl + Click** to select multiple tags.
3. Drag and drop selected tags on to the **Tags in this Query** list.



Remarks:

To add tags to the **Tags In this Query** list, select the tags to query and then drag and drop them on the **Tags in this Query** list or right-click and choose **Add selected tags to query**.

To remove tags from the **Tags in this Query** list, select the tags to remove and press the keyboard **Delete** key or right-click and choose **Remove selected tags from query**.

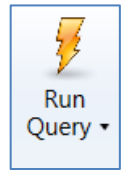
LGH File Inspector limits the number of tags in a query to 1024.

Query Step 3: Click Run Query

The following graphic displays the **STEP 3: Run Query** area. This area is where the query can be executed.

STEP 3: Click Run Query

1. After completing steps 1 and 2, click the **STEP 3: Click Run Query** button or the **Run Query** button on the **Query Ribbon Group** to run the query.



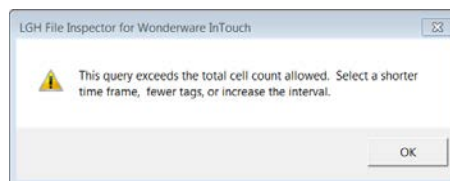
The default destination for the query results is the Data grid. To send the query results directly to an Excel Workbook, click the drop-down menu arrow and choose To Excel Workbook.

Remarks:

Menu items will be disabled and a progress window and progress bar will be displayed while the query is executing. Once the query is complete, the number of rows returned can be viewed from the application **Status Bar** in the lower right corner of the window.

Query results will be displayed in the Data Grid. Click on a column header to toggle sorting on that column from highest to lowest and lowest to highest values. Rows of data can be copied into the Windows clipboard by right-clicking and choosing one of the copy menu items.

If you configure a query that exceeds the maximum cell count allowed (~15,000,000), you will get the following error message:

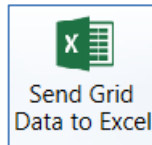


You've exceeded the application's maximum cell count and the query will not be allowed. As the message says, you have a couple of choices:

1. Configure a shorter time frame to query for by reducing the Query Duration time.
2. Reduce the number of tags for the query.
3. Increase the Query Interval time.

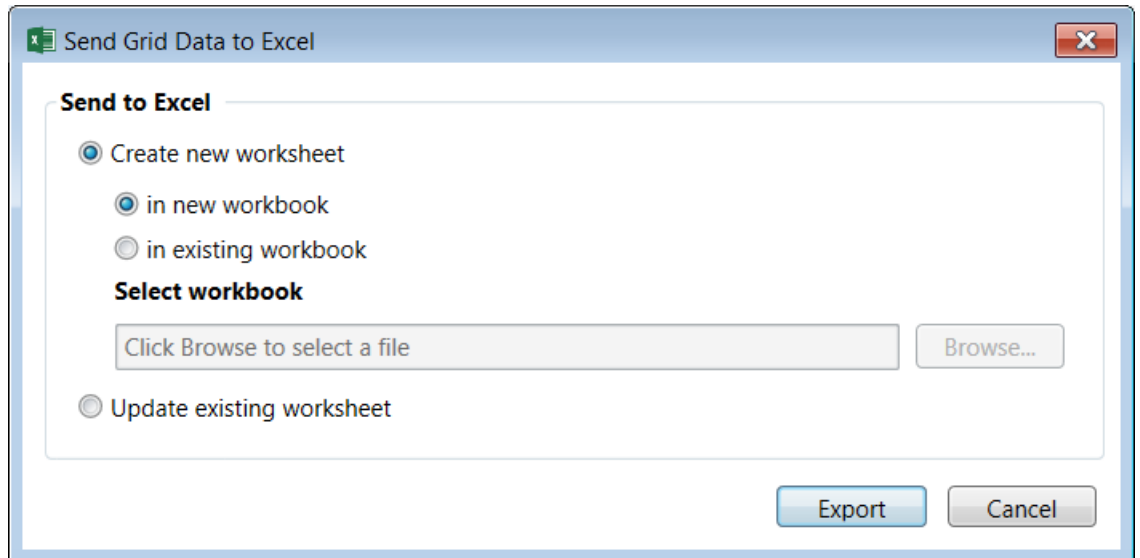
Send Grid Data to Excel Window

The following graphic displays the **Send Grid Data to Excel** window. This window is accessed by clicking the **Send Grid Data to Excel** button from the **Query Ribbon Group**.



The window displays all options for exporting query results to:

- Create a new worksheet in an existing workbook
- Create a new worksheet in a new workbook
- Update a worksheet in an existing workbook



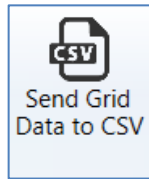
Remarks:

Excel will open automatically to display the results of the operation. The workbook must be saved from Excel in order to retain the query data.

Use caution when exporting to an existing worksheet. When data is exported to an existing worksheet, that worksheet's entire contents are cleared before the query results are copied to the worksheet.

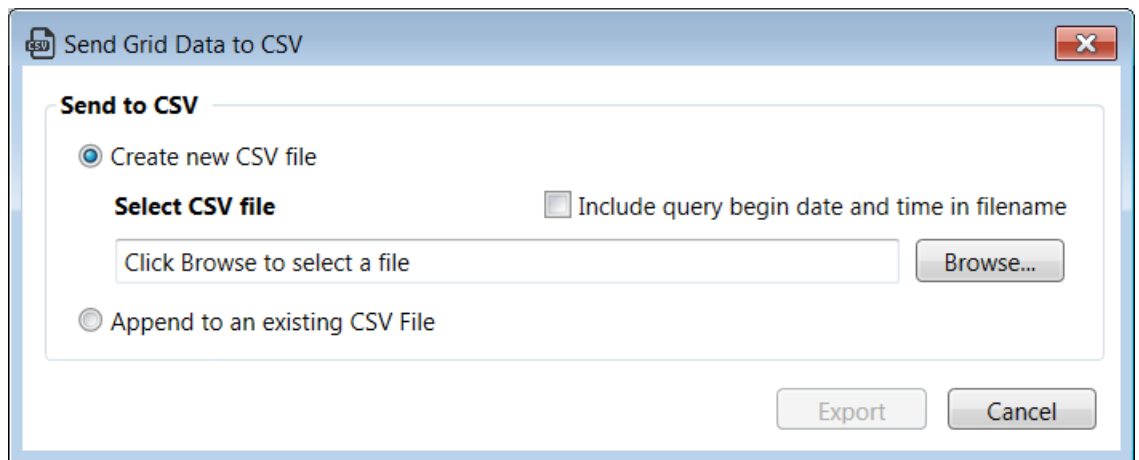
Send Grid Data to CSV Window

The following graphic displays the **Send Grid Data to CSV** window. This window is accessed by clicking the **Send Grid Data to CSV** button from the **Query Ribbon Group**.



The window displays all options for exporting query results to:

- Create a new CSV
- Include Query Begin Date and Time in filename
- Append an existing CSV file



Remarks:

The CSV file location will open automatically with the file selected.

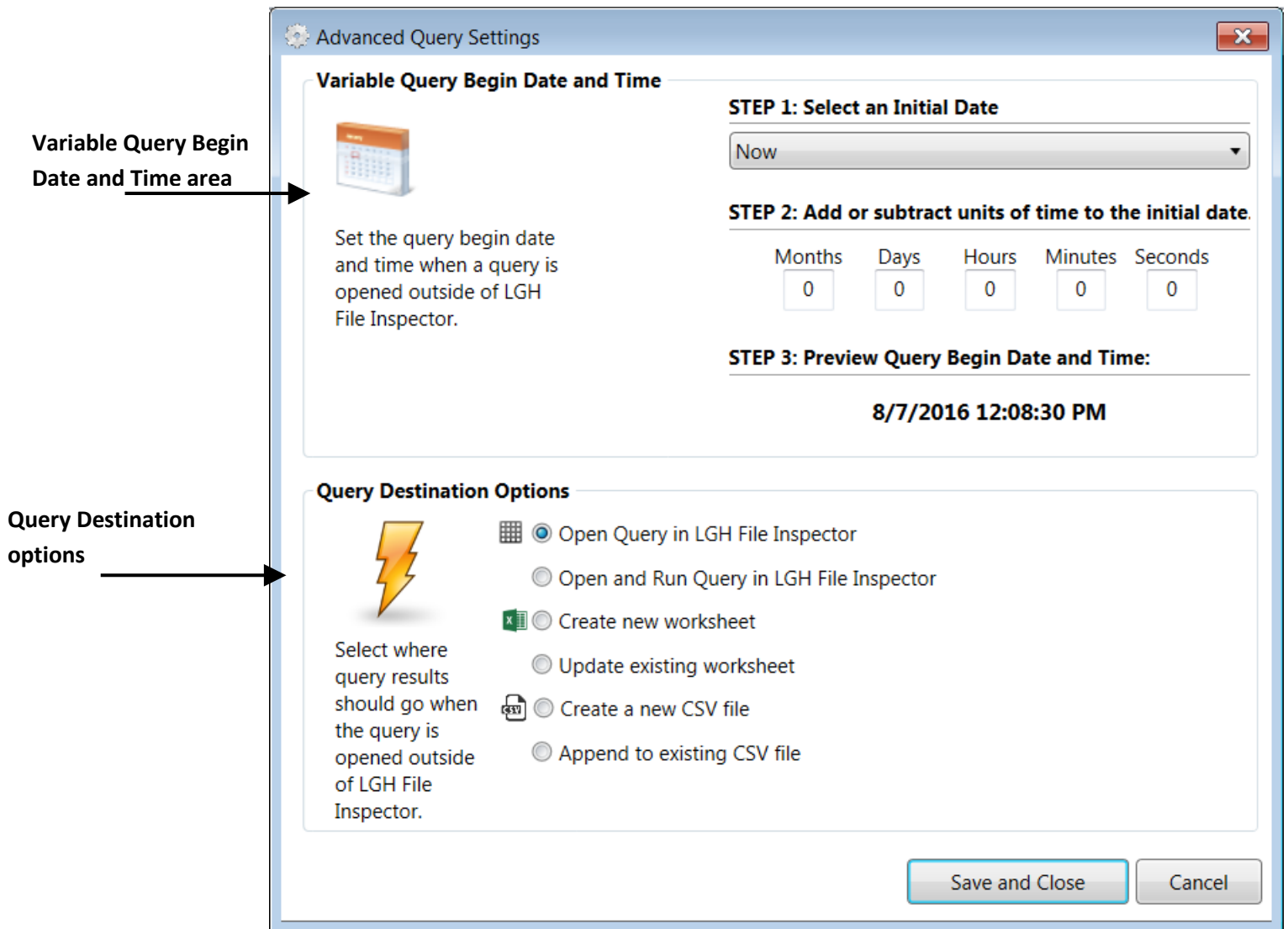
If the CSV file already exists, it will be overwritten. Use the **Include query begin date and time in filename** option to generate a unique file for each query. The date is formatted as -YYYY-MM-DD-hh-mm-ss. For example, assume a filename of C:\MyCSVFile.csv and query begin date of August 9, 2016 11:15 AM. The file name would be C:\MyCSVFile-2016-08-09-11-15-00.csv.

Advanced Query Settings

The LGH File Inspector query can be configured to perform different actions automatically when opened from outside of the LGH File Inspector application. For example, double-clicking the query filename or scheduling the LGH File Inspector in a scheduling utility like Windows Task Scheduler.

Advanced query settings are configured from the **Advanced Query Settings** window.

The following graphic displays the LGH File Inspector **Advanced Query Settings** window. You can configure a variable query beginning date and time the query will be set to when it executes automatically and the destination of the query's results: LGH File Inspector, Excel workbook, or a CSV file.



Variable Query Begin Date and Time

When a query is executed automatically, its beginning date and time are first set according to the query's **Variable Query Begin Date and Time** configuration.

Perform the following steps to configure the **Variable Query Begin Date and Time** for your query:

1. Select an *Initial Date* from the **Initial Date** drop down menu in **STEP 1**. The following initial date settings are available:

Initial Date Selection	Description	Example current date of: <i>March 4, 2016 10:47:38</i>
Now	The current time is set.	Mar 4, 2016 10:47:38
This Minute	The current minute is set. Seconds are rounded down to zero.	Mar 4, 2016 10:47:00
This Hour	The current hour is set. Minutes and seconds are rounded down to zero.	Mar 4, 2016 10:00:00
Today	The current date is set. Hours, minutes, and seconds are rounded down to zero.	Mar 4, 2016 00:00:00
First Day of Week	The first day of the week for the current date is set. Hours, minutes, and seconds are rounded down to zero.	Feb 28, 2016 00:00:00
First Day of Month	The first day of the month for the current date is set. Day of month is set to the 1 st ; hours, minutes, and seconds are rounded down to zero.	Mar 1, 2016 00:00:00
First Day of Year	The first day of the year for the current date is set. The date is set to January 1 st ; hours, minutes, and seconds are rounded down to zero.	Jan 1, 2016 00:00:00

2. Add or subtract units of time to the **Initial Date** in **STEP 2**. Enter negative numbers to subtract or positive numbers to add. The following units of time are available:

Time Unit	Description	Example current date of: <i>March 4, 2016 10:47:38 with an Initial Date setting of Today</i>	
Months	Number of <i>months</i> to add or subtract to/from Initial date.	-1	2/4/2016 00:00:00
		0	3/4/2016 00:00:00
Days	Number of <i>days</i> to add or subtract to/from Initial date.	-1	3/3/2016 00:00:00
		-7	2/26/2016 00:00:00
Hours	Number of <i>hours</i> to add or subtract to/from Initial date.	-8	3/3/2016 16:00:00
		-12	3/3/2016 12:00:00
Minutes	Number of <i>minutes</i> to add or subtract to/from Initial date.	-30	3/3/2016 23:30:00
		15	3/4/2016 00:15:00
Seconds	Number of <i>seconds</i> to add or subtract to/from Initial date.	-90	3/3/2016 23:58:30
		90	3/4/2016 00:01:30

3. Preview the **Variable Query Begin Date and Time** result in **STEP 3**. This preview displays what the query beginning date and time will be set to if it were executed at the current date and time.

Remarks:

Any combination of **Months**, **Days**, **Hours**, **Minutes**, and **Seconds** can be added or subtracted to the **Initial Date** to come up with the desired query beginning date and time.

The minimum value that may be entered is -99. The maximum value that may be entered is 999.

Send Results to Excel, CSV File, or LGH File Inspector

When a query is executed automatically, the query’s results will be sent to the destination configured in the **Send Results to Excel or LGH File Inspector** configuration.

Perform the following steps to configure the **Send Results to Excel , CSV File, or LGH File Inspector**:

1. Select a destination option. The following options are available:

Selection	Description
Open Query In LGH File Inspector	Launches LGH File Inspector and opens the query.
Open and Run Query in LGH File Inspector	Launches LGH File Inspector, opens and executes (runs) the query.
Create new worksheet	
in new workbook and Show	Launches Excel with a new worksheet in a new workbook.
in existing workbook and Show	Launches Excel with a new worksheet in an existing workbook.
in existing workbook Save and Close	Inserts a new worksheet in an existing workbook, saves the workbook and closes Excel.
Update existing worksheet	
in existing workbook and Show	Launches Excel, updates existing worksheet in an existing workbook.
in existing workbook Save and Close	Updates an existing worksheet in an existing workbook, saves the workbook and closes Excel.
Create new CSV File	
and Show in folder	Creates new CSV file and opens the file location. The file is selected by default.
and don’t Show	Creates new CSV file.
Append to existing CSV File	
and Show in folder	Appends data to an existing CSV file, saves file and opens the file location. The file is selected by default.
and don’t Show	Appends data to an existing CSV file, saves file.

Remarks:

The options that send data to a new or existing Excel worksheet and then **Save and Close** the workbook are intended to be used in an automated environment through automated scheduling queries via Windows Task Scheduler.

To open an LGH File Inspector File without automatically executing the **Advanced Query Settings** for the query, hold the keyboard **Shift** Key down while double-clicking the query filename or start LGH File Inspector first then open the query via the **Open** button of the **Query Ribbon Group**.

LGH File Inspector Query Files

LGH File Inspector queries can be saved to a file and opened at a later time. The query files have an extension of *.lghq*. Each file contains all of the details of the query. As described in **Advanced Query Settings** section, the LGH File Inspector query files can be opened automatically by double-clicking the file and will perform the automated actions (if any) that it is configured to perform.

If you have a particular set of tags you query often, configure the query and then save it as an *.lghq* file.

Remarks:

Saving LGH File Inspector query files (**.lghq*) in the same folder as the LGH Data Directory containing *.lgh* files is not supported.

See also the discussion about configuring Windows short-cuts in the next section: “Using LGH File Inspector and Excel as an InTouch Reporting Tool”. You can automate multiple queries that update the same or other workbooks by passing the query filenames as arguments to the Windows shortcut.

Using LGH File Inspector and Excel as an InTouch Reporting Tool

The LGH File Inspector is much more than a query tool. You can accomplish automated reporting using one or more LGH File Inspector query files that update data in worksheets of an existing Excel workbook.

Consider an Excel workbook that has three worksheets. The worksheets are named from left to right: **'Report'**, **'Sheet2'**, and **'Sheet3'**.

1. The Report worksheet contains standard Excel formulas that refer to data on Sheet2 and Sheet3. It subtracts the data found in Sheet3 from the data found in Sheet2 to get the 24-hour difference in values. (e.g., cell A1's formula in the Report sheet is = *Sheet2!A1* – *Sheet3!A1*.)
2. An LGH File Inspector query file is saved as Query1.lghq and queries several tags over a duration of 1-day at 15-minute intervals. It's also configured with a Variable Query Begin Date Time to always run for the previous 24-hours. This is accomplished by selecting an Initial Date of Today and subtracting one day from the Initial Date by entering -1 in the Days field. The query will update Sheet2 of the existing workbook then save and close the workbook.
3. An LGH File Inspector query file is saved as Query2.lghq and queries the same set of tags as Query1.lghq for the same duration of 1-day with 15-minute intervals. Its Variable Query Begin Date and Time setting is also set to Today but it has -2 in the Days field which causes it to query for the 24 hours before Query1.lghq's beginning time. The query will update Sheet3 of the existing workbook and show the workbook.
4. The workbook is saved with Report as the active worksheet.
5. A shortcut is configured on the Windows Desktop that when double-clicked will automatically execute Query1.lghq, then Query2.lghq, and then open the Excel workbook with the Report worksheet displayed by default.
6. Here's the details of the Desktop shortcut, note the double-quotes:
 - a. **Target:** "C:\Program Files\WorkSmart Automation\LGHFileInspector\LGHFileInspector.exe"
"C:\Users\User1\Documents\Query1.lghq" "C:\Users\User1\Documents\Query2.lghq"

Automating LGH File Inspector Queries using Window Task Scheduler

You can automate the execution of any LGH File Inspector query by scheduling it using Windows Task Scheduler.

Using Windows Task Scheduler only makes sense on queries that are configured to update an existing Excel worksheet and then Save and Close the workbook containing the worksheet.

Configure a Windows Task Scheduler Task by defining a **Trigger** that tells it when to run and an **Action** that is defined to start the LGH File Inspector program and pass in a string of query files separated by spaces. The **Edit Action** Window has the following configuration:

1. Action: Start a Program
2. Program/script: "C:\Program Files\WorkSmart Automation\LGHFileInspector\LGHFileInspector.exe"
3. Add Arguments (optional): C:\Users\User1\Documents\Query1.lghq
C:\Users\User1\Documents\Query2.lghq C:\Users\User1\Documents\Query3.lghq
4. Start in (Optional): leave blank

When this task runs, it will start LGH File Inspector and pass it three query files. LGH File Inspector will process all three queries beginning with the first and working left to right and then shutdown.

Troubleshooting Automated Queries

The LGH File Inspector writes debug data for each automated session to a text log file that can be opened using any text editor. The location of the log file is:

C:\Users\%user name%\AppData\Roaming\WorkSmart Automation\LGHFileInspector\LGHFileInspectorLog.txt

If you are having unexpected results when automating a query, refer to this file for help troubleshooting. The log file is overwritten during each LGH File Inspector session.

Common problems are:

1. The Excel workbook file doesn't exist or has been renamed.
2. The Excel worksheet no longer exists or has been renamed.
3. The Excel worksheet is protected.

Uninstalling LGH File Inspector

The LGH File Inspector application can be uninstalled from the **Uninstall or change a program** window from the **Windows Control Panel**.

The application is listed as: **LGH File Inspector for Wonderware InTouch** with **WorkSmart Automation, Inc.** as the Publisher.

Licensing

Your license can be activated and managed from the **Application** menu. Upon purchase, you will be provided a serial number. The serial number will be different depending upon the edition of software purchased.

The following licenses are available:

1. **Subscription** (90 days). The subscription edition will run for 90 days from the date of issue and may be installed on a Windows Desktop or Windows Server operating system. The license may be renewed at any time. Subscription licenses begin with SUB- .
2. **Workstation License**. The Workstation Edition can be run on a Windows desktop operating system and has no expiration date. Licenses are available as single licenses and various multi-license packs. Workstation license serial numbers begin with WST-.
3. **Terminal Server License**. The Terminal Server Edition can be run on a Windows Server operating system and has no expiration date and do not meter on the number of terminal server users using the product. You are responsible for any Wonderware or Windows user licensing associated with Terminal Server usage. Terminal Server license serial numbers begin with SRV-.
4. **Service Provider License**. The Service Provider Edition is intended for companies that need to use the tool on multiple computers that they typically take to a customer site and may need to temporarily install on a customer machine and then de-activate the license when done. Note that when you deactivate a license on a machine, it cannot be re-activated with the same serial number and may require the purchase of an additional Workstation license to reactivate on the same machine. This edition provides for up to 5 simultaneous uses, and we expect that you'll need to move licenses more often than a regular end user. Service Provider License serial numbers begin with SPR-.

Licensing your software is a two-step process via the license dialog window. This window is accessed via the **Application** menu then clicking the **Show License** hyperlink.

STEP 1: Enter your license information

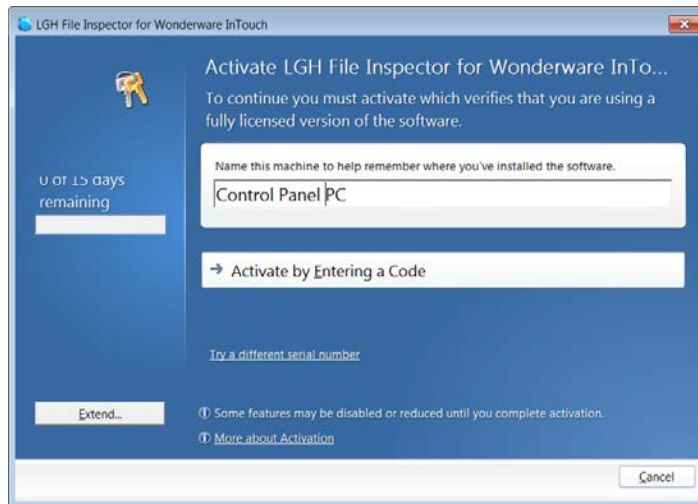


Enter your name in the **Name** field.

Enter your company name in the **Organization** field.

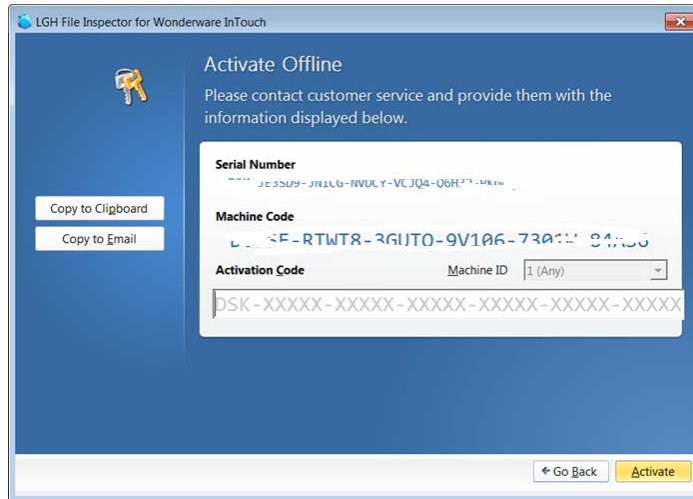
Enter or copy and paste your serial number in the **Serial Number** field and then click the **Register** button.

STEP 2: Activate your license



Enter a **Name** for your machine to help remember where you've installed the software. This defaults to the machine's name but you can enter any name you like.

Click the **Activate by Entering a Code** button. This will display the Activate Offline window.



Click the **Copy to Clipboard** button and paste the information into an email to:

support@softwaretoolbox.com

This information will be used to generate an **Activation Code** that is unique to your machine.

The product will not run until a valid **Activation Code** has been entered.

Once you receive your Activation Code via email, enter it into the **Activation Code** field and click the **Activate** button. Your software will be activated and will run.

Remarks:

Please save your Serial Number and Activation Code in a safe place. You will need it if you ever have to reinstall the software on the same machine.

If you need to move the software to a different machine, you must deactivate the license first. It is not necessary to deactivate the software if you are reinstalling it on the same machine provided that your hardware has not been changed significantly.

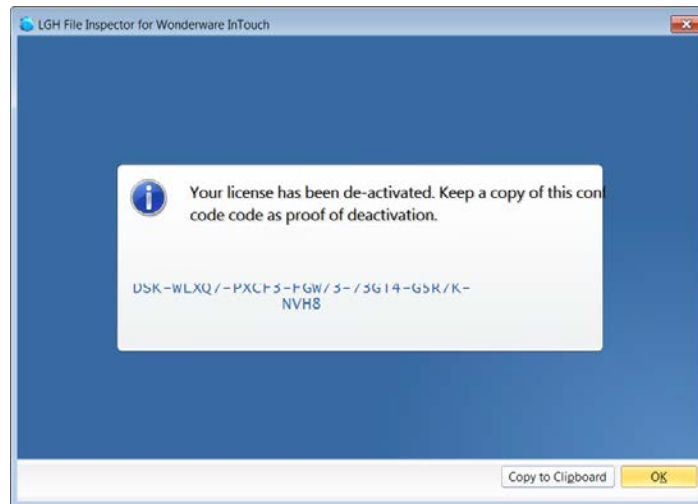
Deactivating a License:

You would typically deactivate a license if you were replacing an older machine and wanted to move the software to a new machine.

Remember that once you deactivate your license, you will not be able to run the software again on this machine unless you purchase a new license for this machine.

To deactivate a license follow these steps:

Click the **Deactivate license on this machine** hypertext link on the **Application** Menu. The **Deactivate Your Software** dialog will display. From here, click the **Deactivate** button and then click **Yes to the Validation Notice** message box.



You will be presented with a **Deactivation Code** to provide to WorkSmart Automation as proof that you have deactivated your software. Click the **Copy to Clipboard** button and send the code to support@softwaretoolbox.com. Please include the date you deactivated in your email.

You may install the software on a new machine and repeat the process of activating software for your new machine as described earlier.

Support



For all support with this application please contact our exclusive master distributor Software Toolbox, or your local Wonderware Distributor if you purchased through them.

Software Toolbox can be reached on support@softwaretoolbox.com or through their online knowledgebase and support portal at <http://support.softwaretoolbox.com>.

The LGH File Inspector application is developed by WorkSmart Automation, Inc.

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www.worksmartautomation.com

