IHS Markit Securities Finance Toolkit for Microsoft Excel®

Technical Guide | December 2018

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1 Introduction

1.1 Purpose

This document provides information for installing and troubleshooting the IHS Markit Securities Finance Toolkit for Microsoft Excel®. It covers:

- Detailed installation information
- Network communication
- Troubleshooting common issues.

2 Installation

2.1 System requirements

System	Requirement
Operating System	Microsoft Windows 7 or later, 32-bit and 64-bit versions
Office Suite	Microsoft Excel 2007, 32-bit version Microsoft Excel 2010, 2013 and 2016, 32-bit and 64-bit versions

The following prerequisite is required:

Prerequisite	Download Source
Microsoft .NET Framework 4.6.1 or later	https://www.microsoft.com/en-gb/download/details.aspx?id=49981

Administrative rights to the system are required to install the Toolkit. Once installed, administrative rights are not required to run the application.

2.2 Upgrading from a previous version

If you are upgrading from a previous version, uninstall the previous version first.

The steps below must be performed by a user with administrator rights.

Steps for upgrading from Toolkit version 9.8.0 or earlier:

1. Navigate to the " Markit Toolkit" folder in the Program Menu
2. Click "Uninstall Markit Toolkit" with Admin privileges
3. Click "Yes" to proceed with uninstallation
4. Wait for the uninstallation to complete.

Steps for upgrading from Toolkit version 9.9.0 or greater:

1. Navigate to the "IHS Markit Toolkit" folder in the Program Menu
2. Click "Uninstall IHS Markit Toolkit" with Admin privileges
3. Click "Yes" to proceed with uninstallation
4. Wait for the uninstallation to complete.

2.3 Setup installation procedure

The installation instructions are detailed below:

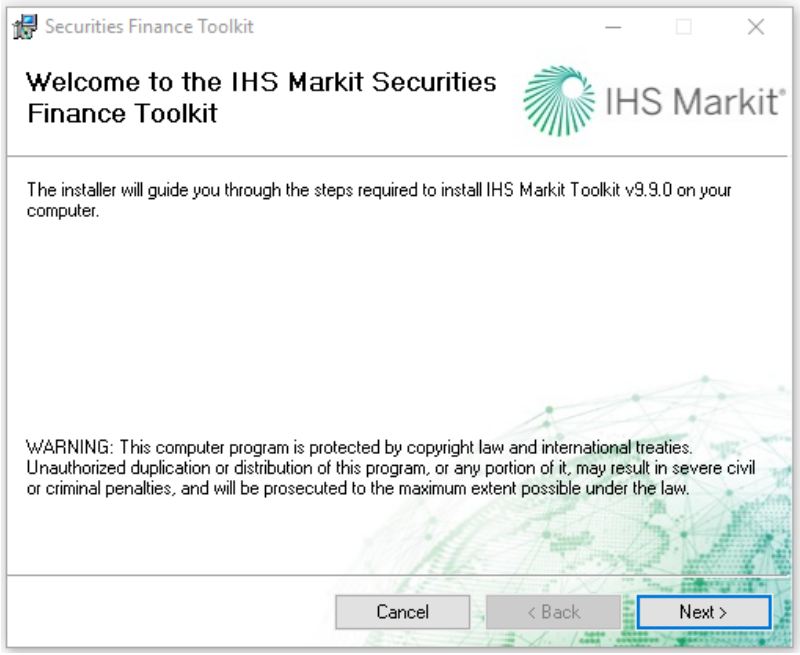
1. Ensure Excel is closed.
2. Go to https://ihsmarkit.com/products/securities-finance.html and scroll down to the Toolkit Installation section
3. Download the software:
   i. Users of 32-bit Excel should click “IHSMarkitToolkitSetup.zip”
   ii. Users of 64-bit Excel should click the “IHSMarkitToolkitSetup64.zip".

The IHSMarkitToolkitSetup folder consists of two files as shown below:

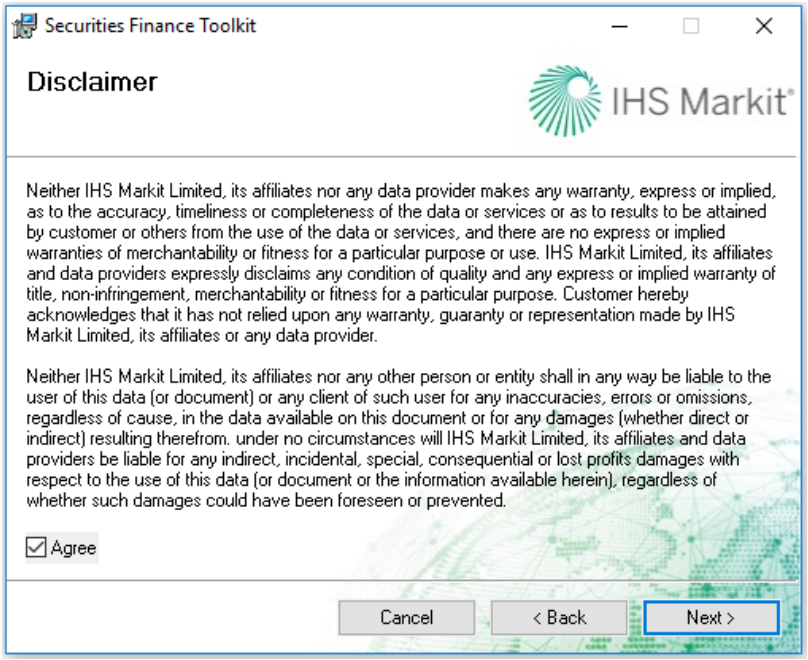
Either file can be used to install the toolkit.

Installation must be performed by a user with administrator rights.

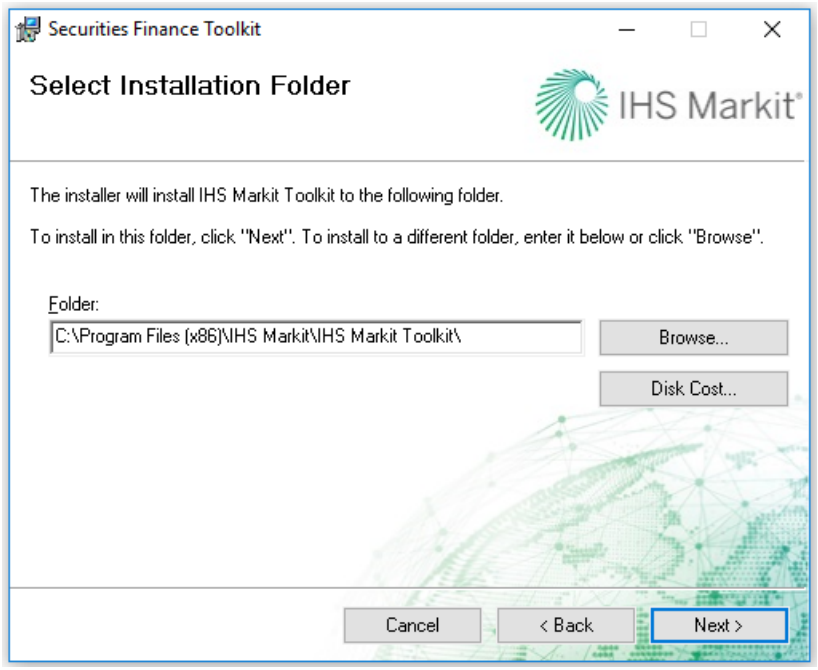
Click on the “Next” button in the IHS Markit Toolkit installation dialog,



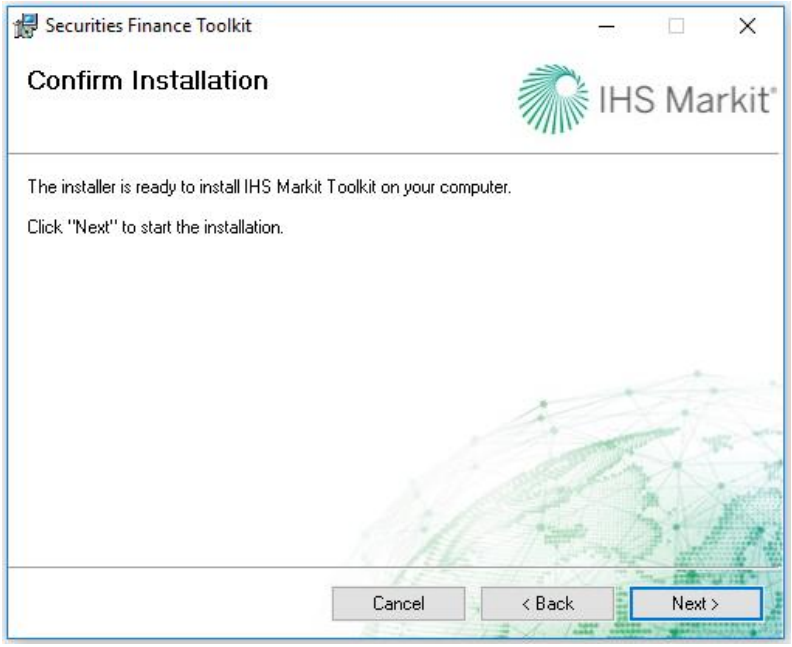
Read the disclaimer message and check the “Agree” option. Click “Next” to continue.



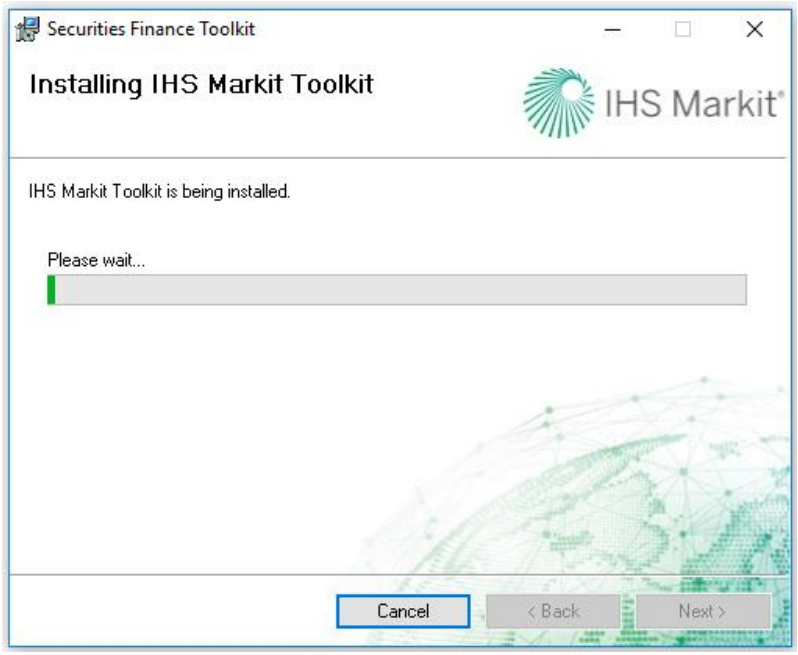
Confirm the installation folder location. Click “Next” to continue



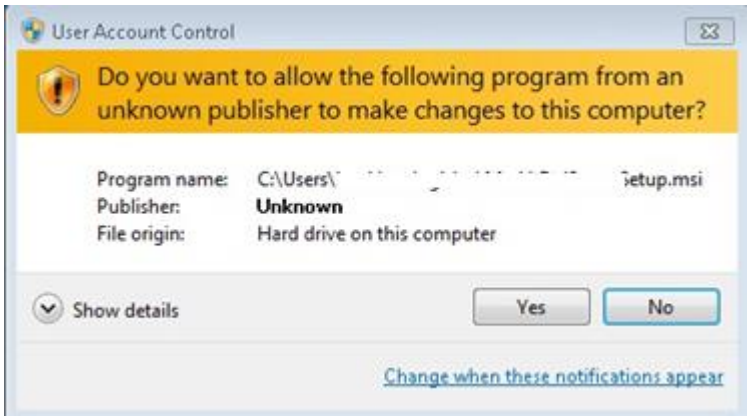
A Confirm Installation dialog will appear. Click “Next” to install the Toolkit.



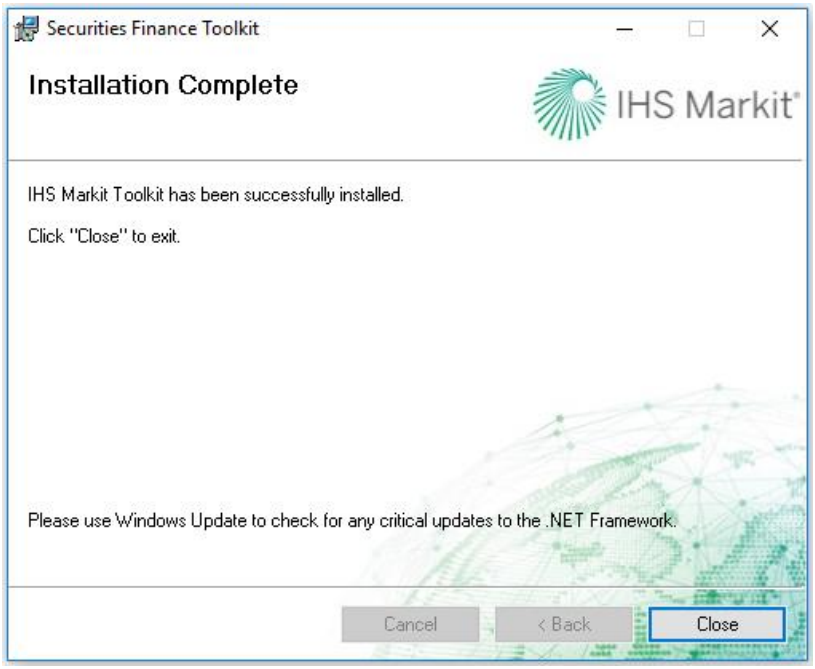
A window will appear showing the installation progress as shown below.



Users may see a User Account Control dialog as shown below. Click “Yes” to continue the installation.



When the installation is complete, the window below will appear. Click “Close” to complete the installation.



2.4 Installation files and folders

During installation, the following will be created on the user’s machine:

Installation folder

IHS Markit Toolkit folder

Add-in Express folder.

Refer to the **Appendix** for details of the location and contents of these folders and files.

2.5 Registry changes

The following additions will be made to the destination machine’s registry at installation time:

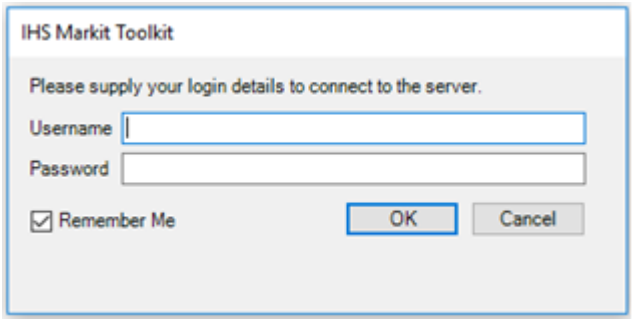
HKEY_CURRENT_USER\Software\IHS Markit\API\Password

HKEY_CURRENT_USER\Software\IHS Markit\API\UserName

Entries in the Password registry key are encrypted.

2.6 Toolkit installation checks

You should test your installation by downloading the Toolkit installation check spreadsheet on the installation page. When opened, you will be prompted to login with your IHS Markit Securities Finance credentials.

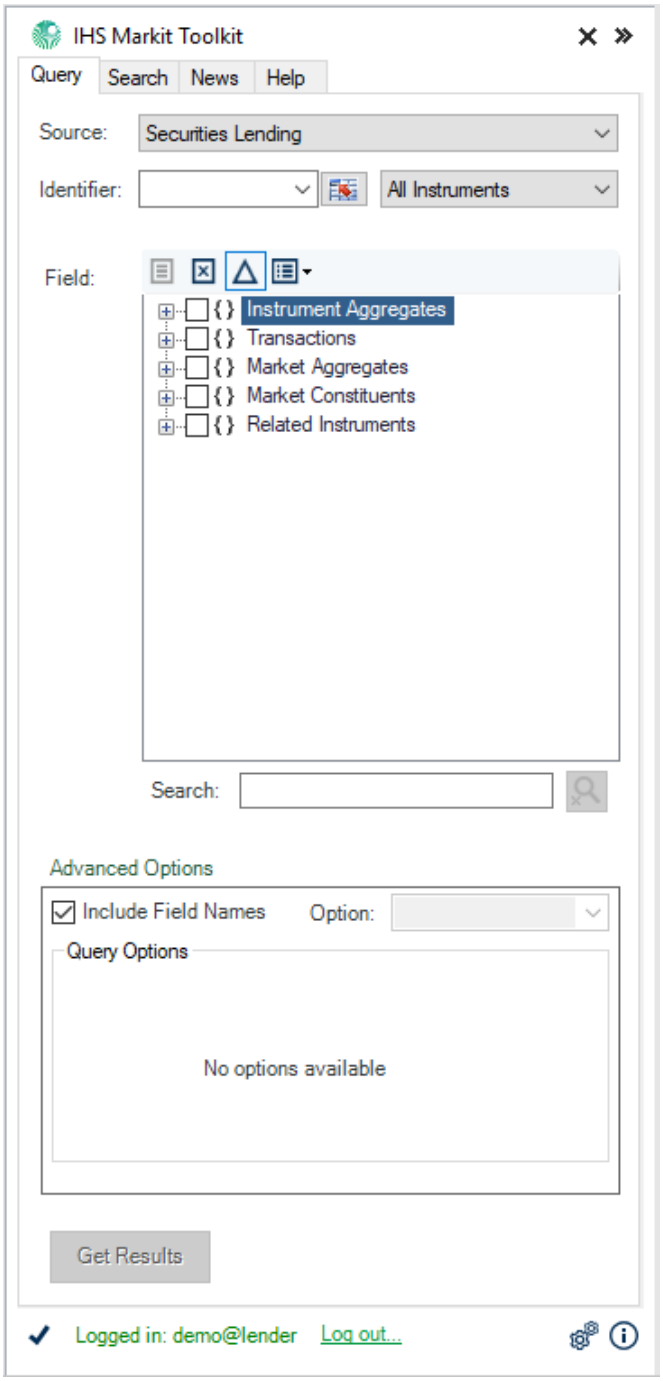


A connection to the server is made if a valid username and password is entered. If the "Remember Me" box is ticked, these credentials will be saved to the IHS Markit Securities Finance registry keys detailed in section 2.5, Registry changes. Once logged in, data should update on the sheet. If it does not, or if you get an error message, perform the checks in the sections below.

Note: 'Remember Me' is set automatically for users of Excel 2016 and the checkbox is not displayed. If you wish to log out of the toolkit, click Log out... at the bottom of the IHS Markit Toolkit Navigator pane.

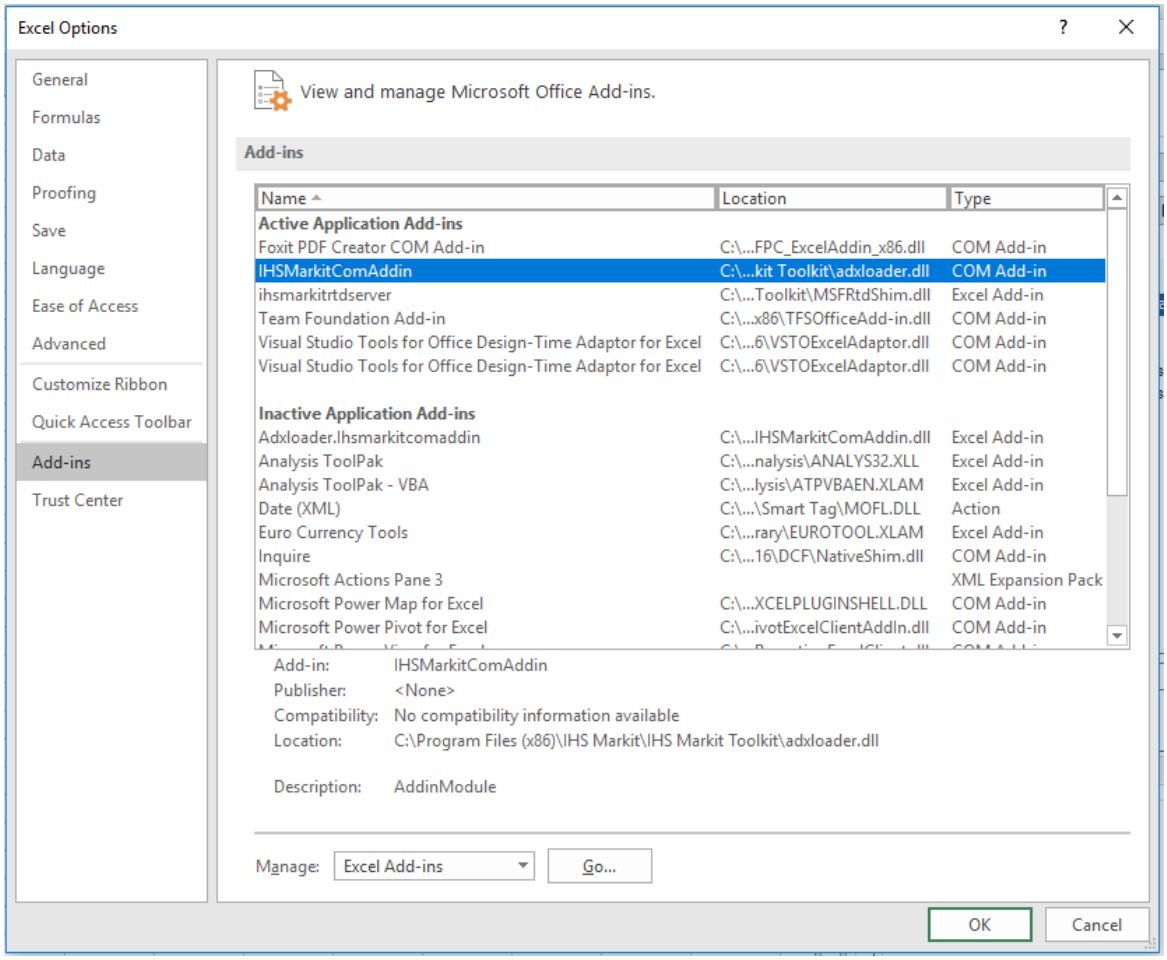
2.6.1 Installation check 1: Navigator

Ensure the Navigator displays correctly (see section 2.7 for details of the Navigator). If it does not, refer to 2.6.2, Installation check 2: COM Add-in, below.



2.6.2 Installation check 2: COM Add-in

Ensure IHSMarkitComAddin is showing under Active Applications, as displayed in the image below.



Excel version	Steps
Excel 2010, 2013 and 2016	• Click File and select Options • Select Add-Ins on the left hand pane • Check that IHSMarkitComAddin is listed under Active Application Add-in • If it is not, select COM Add-ins in the Manage drop-down list and click Go • Click Add • Open C:\Program Files\IHS Markit\IHS Markit Toolkit • Select adxloader.dll for 32-bit Excel or adxloader64.dll for 64-bit Excel • Click OK to add it to the list then OK to close the COM Add-ins window
Excel 2007	• Click on the Office Button • Go to Excel options and select Add-Ins on the left hand pane

- Check that IHSMarkitComAddin is listed under Active Application Add-ins
- If it is not, select COM Add-ins in the Manage drop-down list and click Go
- Click Add
- Open C:\Program Files\IHS Markit\IHS Markit Toolkit
- Select adxloader.dll
- Click OK to add it to the list then OK to close the COM Add-ins window

2.6.3 Installation Check 3: Proxy Server

Ensure your proxy details are entered correctly if required (refer to section 4.2,RTD / Proxy tab). You may need to speak to your network administrator to get these settings.

2.6.4 Installation Check 4: Mail Server

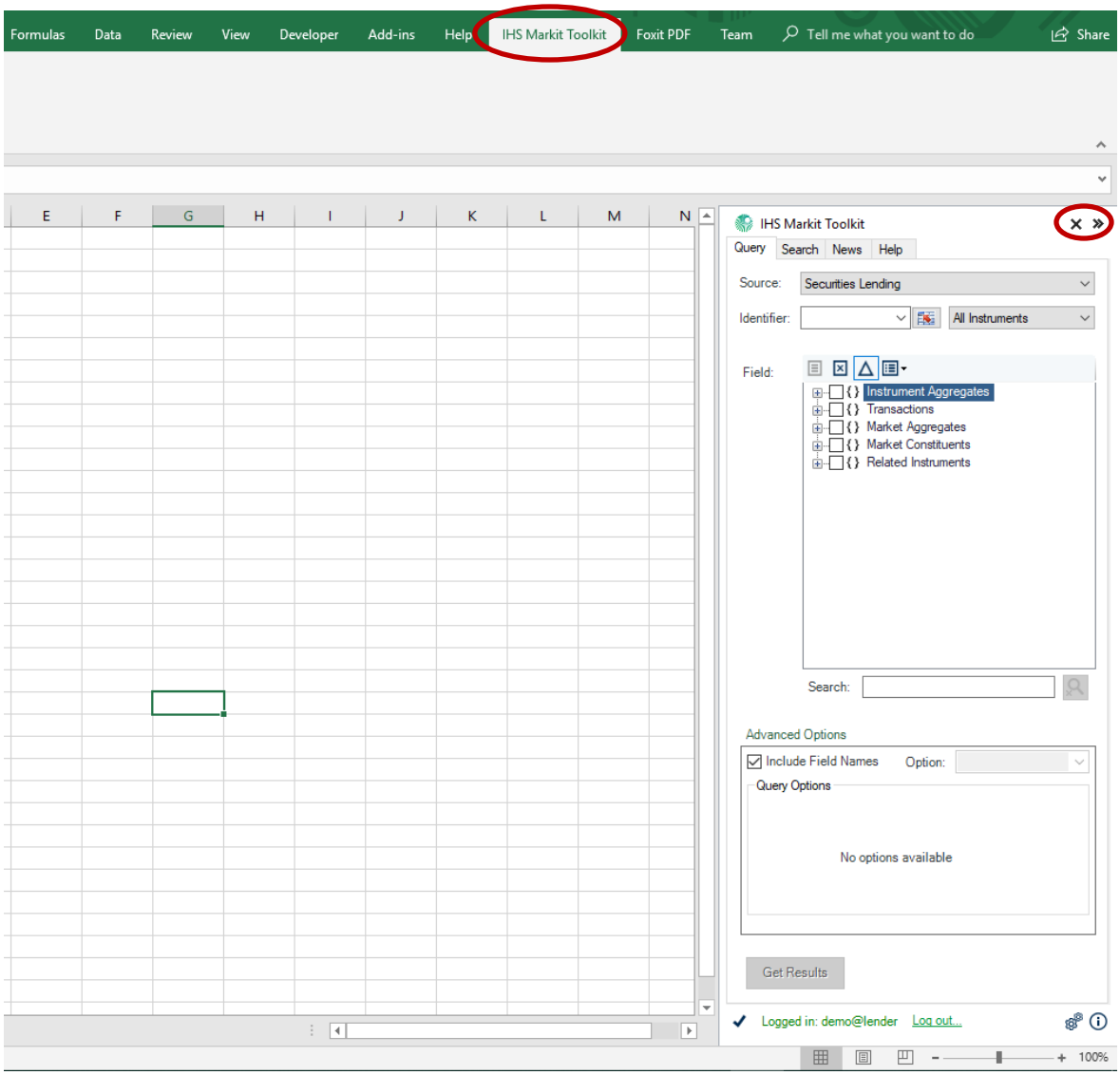
Ensure your mail server details are entered correctly (refer to section 4.1, Preferences). You may need to speak to your network administrator to get these settings.

2.7 Navigator

The Navigator is a GUI for the IHS Markit Securities Finance Toolkit. A IHS Markit icon or menu item will be added to the Excel menu when the Toolkit is installed. Click on this to either show or hide the Navigator. Click the two chevrons at the top of the Navigator to minimise or maximise the panel.

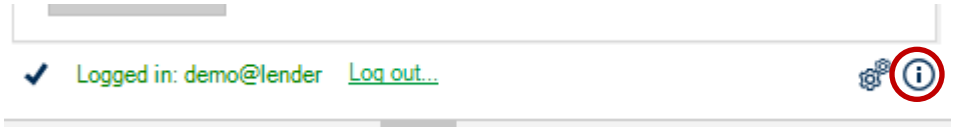
The Navigator allows you to construct Toolkit formulae easily via the Query tab. It also includes a Search tab to help you find instrument details, a Documents tab with template and data dictionary files, a News tab which displays current articles from IHS Markit Securities Finance and a Help tab that allows you to access real-time online support.

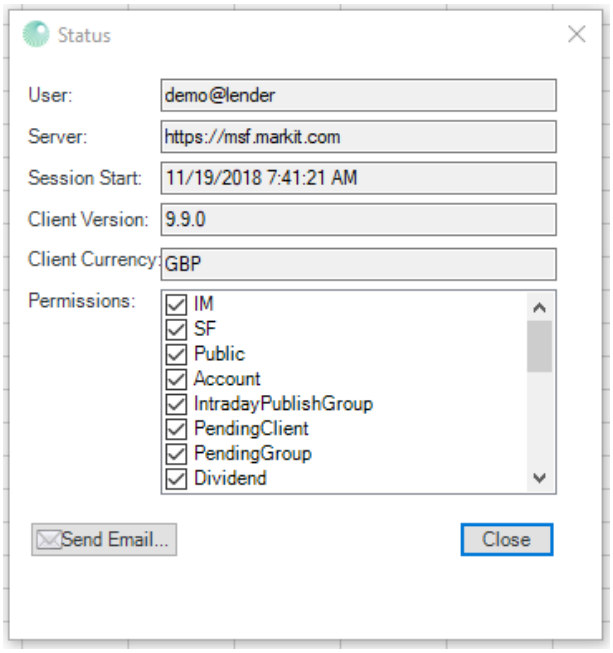
Please refer to the Toolkit Navigator User Guide for more detailed information on the Navigator. This is available under Help and Guides in the Documents tab.



2.7.1 Detailed Status Information Button

The Detailed Status Information button at the bottom of the Navigator displays a popup containing support information for the user who is currently logged in to the application.





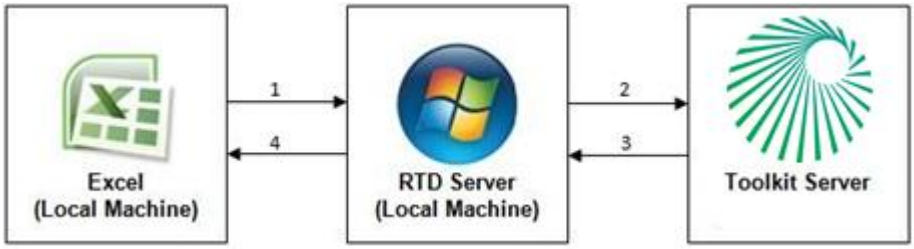
The following information is available:

Item	Description
User	The current logged-in username
Server	The URL of the server that the application is using
Session Start	The time that the current user session began (date and time they logged in)
Client Version	The application version
Permissions	Data sets that the user has permission to access
Send Email	Send an email to the support team at IHS Markit Securities Finance. **Note:** your email address and mail server are required. This can also be set up in the IHS Markit Admin Tool, see section 4.4

3 Network Communication

The IHS Markit Securities Finance Toolkit uses Microsoft RTD (Real Time Data) technology in Excel to download data from the IHS Markit Securities Finance Toolkit server.

Excel generates requests for IHS Markit Securities Finance data and passes it to the local RTD server, which compiles the request and passes it to the IHS Markit Securities Finance Toolkit Server. A connection attempt is made to https:/msf.markit.com across the network. If successful, a TLS (v1) connection is made for the transmission of data. This will stay active until the spreadsheet containing the call is closed. If the spreadsheet is left open, a call to the server is made periodically to check the connection to the server.



3.1 Logon process

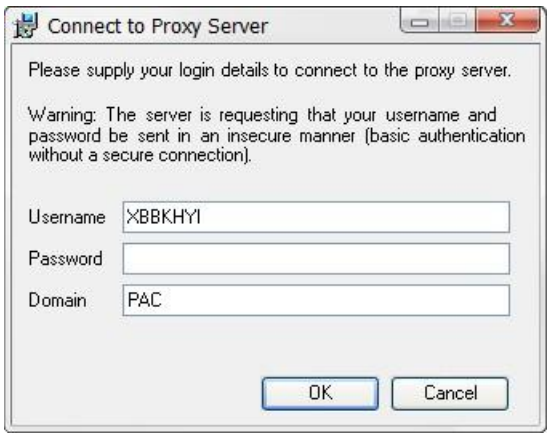
When clicking the Log In button on the Navigator, the Toolkit client will attempt connection to the Toolkit server. If this succeeds, a prompt for the IHS Markit Securities Finance Toolkit Login details will appear (refer to section 2.6, Toolkit installation checks).

If this fails, it is likely that a proxy server is blocking access (refer to section 3.2, Proxy processing).

3.2 Proxy processing

The IHS Markit Securities Finance Toolkit provides the below support for Proxy servers. These options are configured via the IHS Markit Toolkit Admin Tool.

If the default credentials are not accepted by the proxy server, a pop-up window will appear requesting proxy credentials. You can specify one of the manual override options detailed below to bypass this prompt.



See section 4, IHS Markit Toolkit Admin Tool, for setup details in the IHS Markit Toolkit Admin Tool.

3.2.1 Default: Use LAN settings

The toolkit will use your default Local Area Network (LAN) settings to connect to the Toolkit server.

3.2.2 Manual override 1: No proxy

You can force no proxy / direct connection to the Toolkit server.

3.2.3 Manual override 2: Proxy config

You can manually specify a proxy server in the format *ServerName:Port* or *IPAddress:Port.*

3.2.4 Manual override 3: Proxy PAC

You can manually specify a proxy PAC in the format *http://ServerName/pacfile*

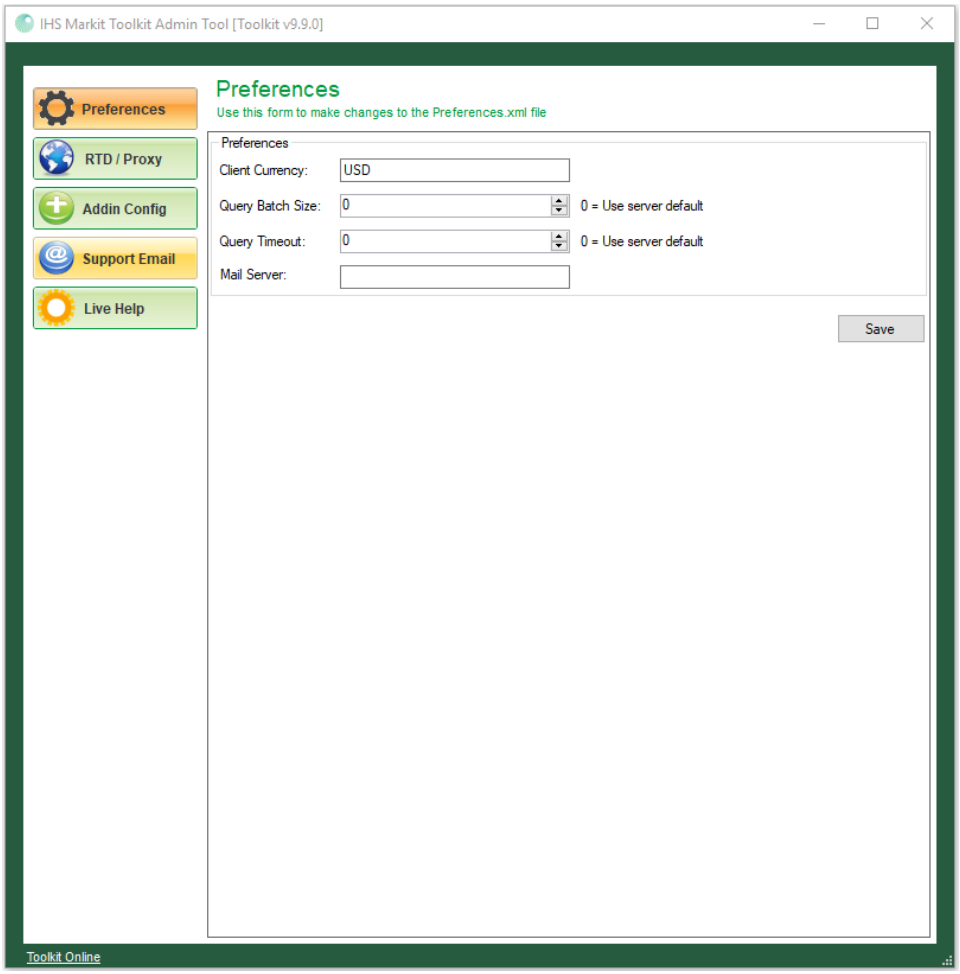
Note: If none of the above attempts work, or there are unrecoverable errors, the logon will fail.

4 IHS Markit Toolkit Admin Tool

4.1 Preferences

A standalone tool, IHSMarkitAdminTool.exe (located in the Installation folder and accessible from Start -> All Programs -> IHS Markit Toolkit -> IHS Markit Toolkit Admin), is provided to allow users to modify Toolkit behaviour. Settings changed on the Preferences tab will update the file "Preferences.xml" stored in the Log Directory.

Note: Settings on this tab does not need Administrator rights to save settings using IHSMarkitAdminTool.exe.

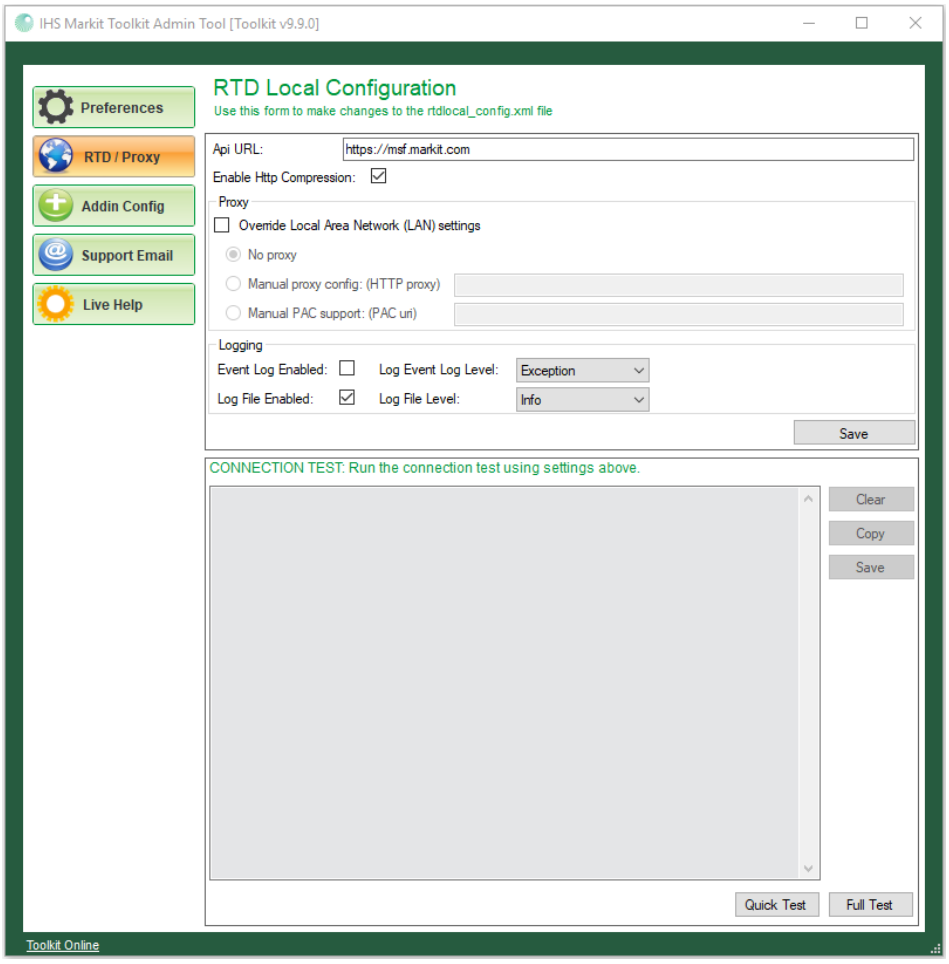


Item	Description
Client Currency	Results will be returned in the specified currency
Query Batch Size	Maximum number of requests sent to the server in one batch (default: 0 - use server configuration)
Query Timeout	Duration in milliseconds of maximum query time before timeout occurs (default: 0 - use server configuration)
Mail Server	Local email server used to send support emails. This should be specified in the format smtp.mailhost.com

4.2 RTD / Proxy tab

Settings changed on the RTD / Proxy tab will update the file "rtdlocal_config.xml" stored in the Installation folder.

Note: You must have Administrator rights to save settings using IHSMarkitAdminTool.exe.



Item	Description
Api URL	The URL of the server that the Toolkit connects to for data retrieval. This value should not be changed (https://msf.markit.com)
Enable Http Compression	Checkbox to enable Http compression. Checked by default
Override Local Area Network (LAN) settings	Checkbox to manually specify proxy settings (default: false)
No proxy	Forces the Toolkit to use no proxy server when connecting to the Toolkit server (default: true)
Manual proxy config: (HTTP proxy)	You can manually specify a proxy server in the format *ServerName:Port or IPAddress:Port (default: false)*
Manual PAC support (PAC uri)	You can manually specify a proxy PAC in the format http://ServerName/pacfile (default: false)
Event Log Enabled	Indicates whether or not logging to the Windows Event Log is enabled (default: False)
Log Event Log Level	Indicates the level of logging to perform to the Windows Event Log (default: Exception)
Log File Enabled	Indicates whether or not logging to the Toolkit log file is enabled (default: True)
Log File Level	Indicates the level of logging to perform to the Toolkit log file (default: Info)

Note: If using a proxy it must support compression with the **Enable Http Compression** property set to true, otherwise the Toolkit will revert to uncompressed communications.

4.2.1 Proxy test

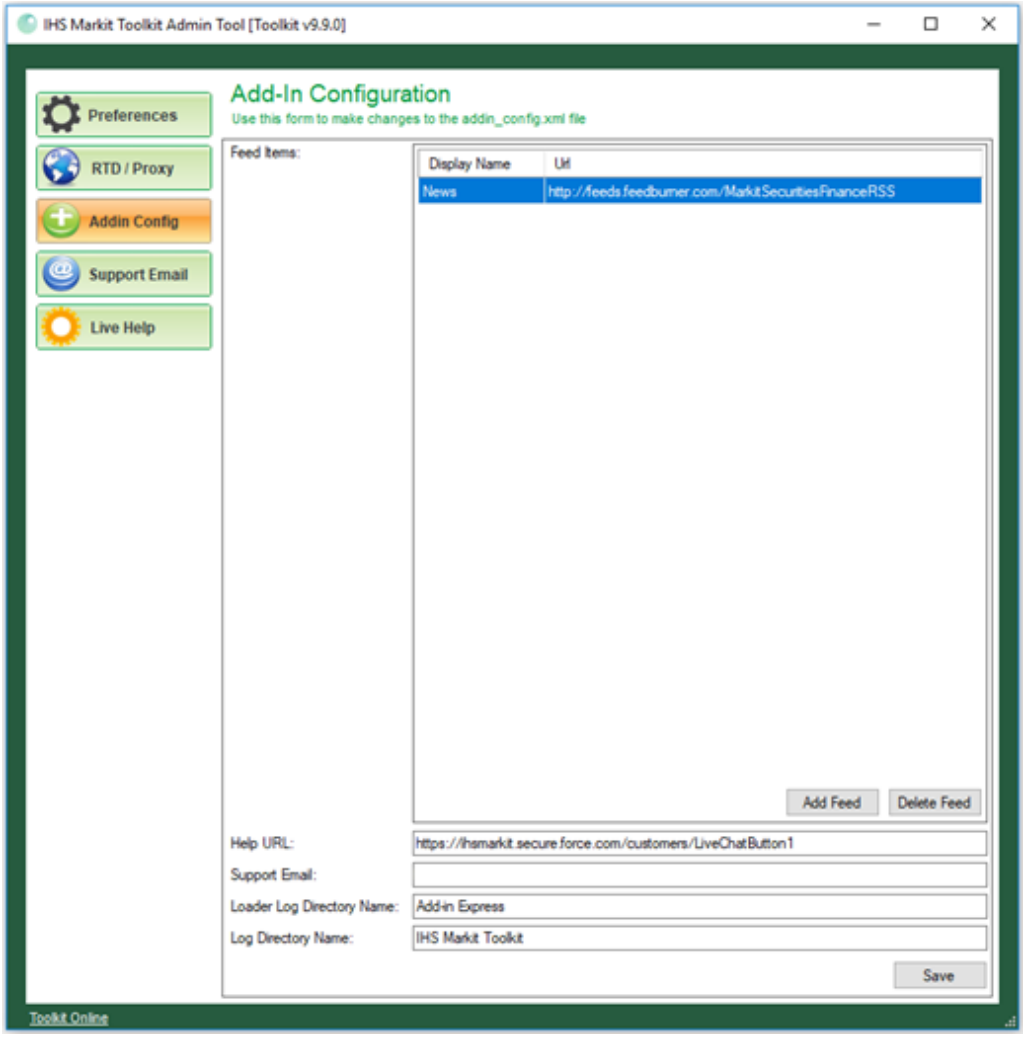
A Connection Test is included in the IHS Markit Toolkit Admin Tool which allows for the testing of different proxy configurations used by the Toolkit and Navigator. To test your connection to the Toolkit server via your proxy server, type in your proxy details then click a test option. Once the test is completed, a summary will be displayed. This will highlight any problems that may have occurred in connecting via the specified proxy.

Test Type	Description
Quick Test	This will test the ability to access the Toolkit server through the current network configuration. A successful Quick Test does not necessarily indicate the Toolkit will work correctly
Full Test	Performs a full connectivity test against the Toolkit server, including authentication and initialisation as per Toolkit functionality. This also covers network configuration implicitly. If this test is successful the Toolkit should function correctly

4.3 Addin Config tab

Settings changed on the Addin Config tab will update the file "addin_config.xml" stored in the Installation folder. This in turn will change the settings on the Navigator.

Note: You must have Administrator rights to save settings using IHSMarkitAdminTool.exe.



For URLs please refer to Appendix.

Item	Description
Feed Items	The URL and display name of the Feed on the News tab in the Navigator. Add or Delete feeds using the buttons provided
Help URL	The URL for Live Chat in the Help tab in the Navigator
Support Email	The email address that support emails will be sent to when clicking the Send Email button, accessed within the Detailed Status Information button on the Navigator (default: MSF-support@markit.com)

Loader Log Directory Name	The folder name that Navigator logs will be written to (default: Add-in Express)
Log Directory Name	The folder name that Toolkit logs will be written to (default: IHS Markit Toolkit)

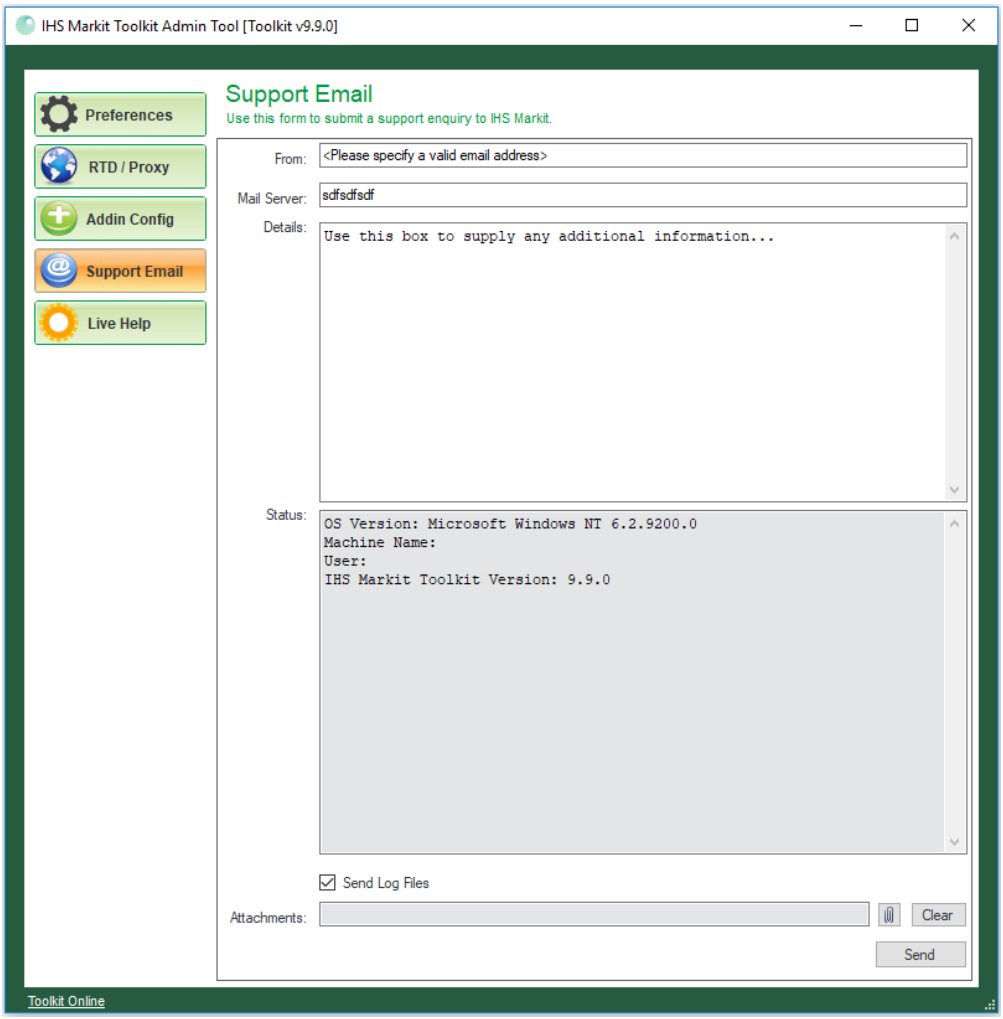
4.4 Support Email tab

This tab can be used to send an email to IHS Markit Securities Finance Support. You can also access this feature from the Navigator (refer to section 2.7.1).

You need to complete the From and Mail Server fields to be able to send an email. Type in any additional notes or messages in the Details box.

Selecting "Send log files" will automatically attach Toolkit logs which are useful for troubleshooting. You can also add additional attachments by clicking the paperclip button.

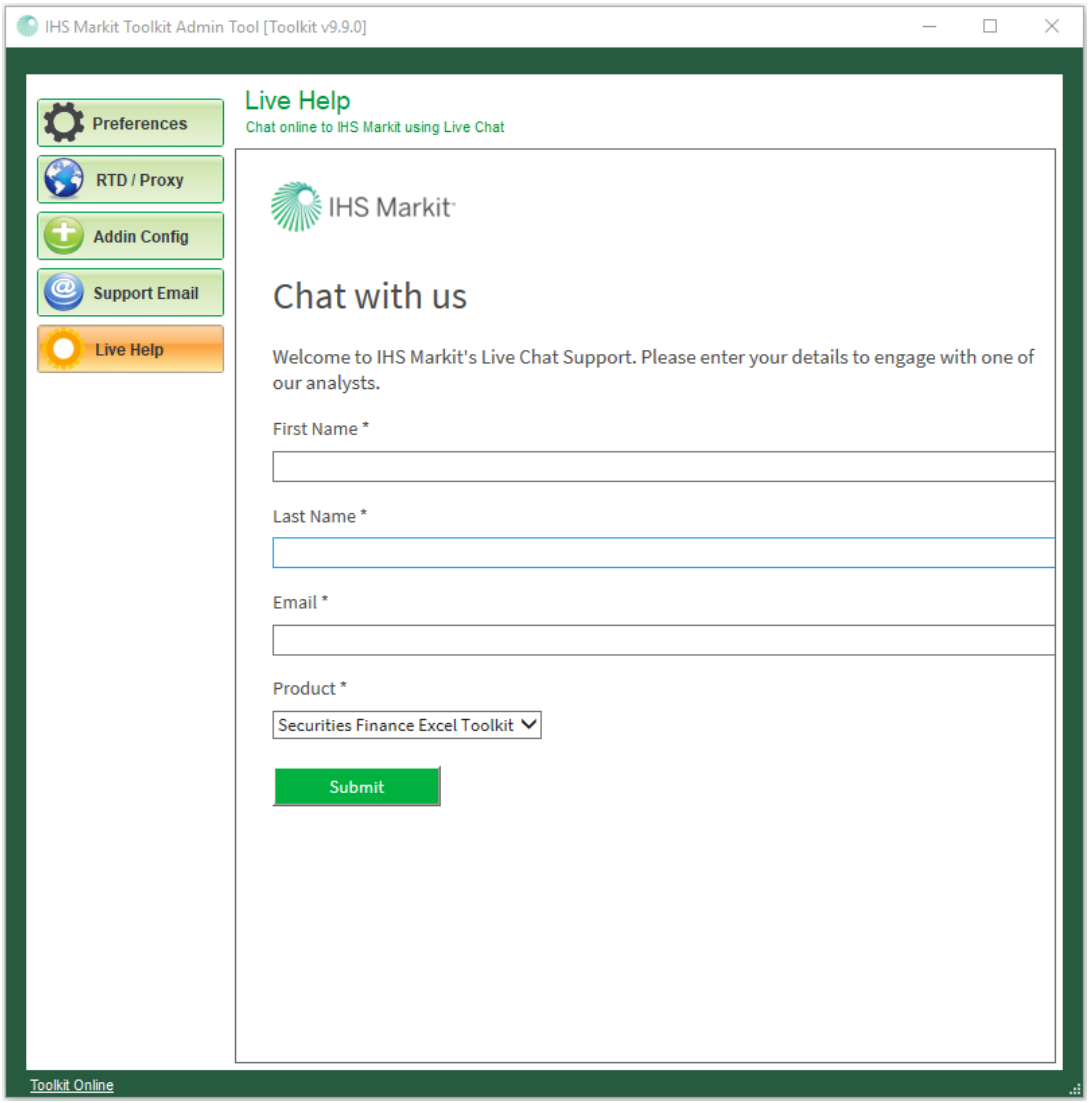
Clicking Send will submit the email to the Support Team at IHS Markit Securities Finance.



4.5 Live Help tab

This tab can be used to chat directly to IHS Markit Securities Finance Support. You can also access this feature from the Navigator (refer to section 2.7, Navigator).

Fill in your name and email address details then click "Submit" to start.



5 Toolkit Configuration Files

5.1 RtdLocal_Config.xml

Description	Provides client-specific configuration for manipulating target server, logging levels, compression and proxy settings

Location	Installation folder
Used By	Toolkit, Navigator, IHS Markit Toolkit Admin Tool
Details	Refer to section 4.2, RTD / Proxy tab**,** for how to update this file via the IHS Markit Toolkit Admin Tool

5.2 Addin_Config.xml

Description	Provides client-specific configuration for manipulating the Navigator including the Feed tab, Help tab, Email settings and Logging levels
Location	Installation folder
Used By	Navigator, IHS Markit Toolkit Admin Tool
Details	Refer to section 4.3, Addin Config tab**,** for how to update this file via the IHS Markit Toolkit Admin Tool

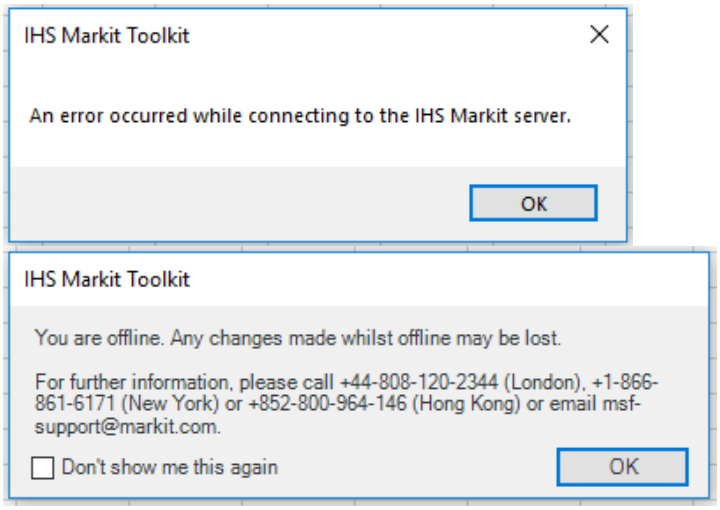
5.3 ApplicationLog.txt

Description	If enabled, the Toolkit will log a configurable level of details to the ApplicationLog file
Location	IHS Markit Toolkit folder in My Documents
Used By	Toolkit, Navigator, IHS Markit Toolkit Admin Tool
Details	Refer to section 4.2, RTD / Proxy tab, for how to activate and modify logging level in this file. This is useful for troubleshooting Toolkit issues. An ApplicationLog filename will take the following format: ***ApplicationLog_[year][weekOfYear].txt*** The level of detail logged to the file is dependent upon the Log File Level property. Examples of the types of information logged are: • Errors • Proxy connection information • Log-in attempts • Usage activity • Navigator start and stop events • Navigator errors

6 Error Messages

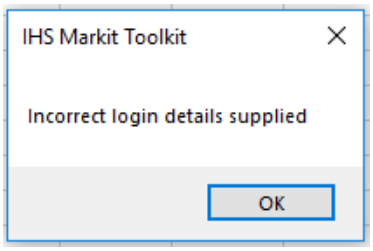
6.1 Application errors

6.1.1 An error occurred while connecting to the server/you are offline



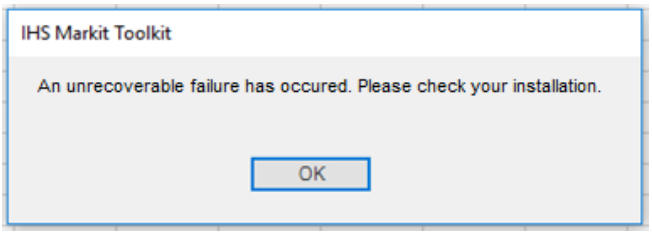
Description: Connection to the IHS Markit Securities Finance toolkit server cannot be established. This is normally due to a proxy server blocking the connection. Refer to the section 4.2.1, Proxy test**,** for how to troubleshoot proxy connections.

6.1.2 Incorrect Login details supplied



Description: Incorrect username or password supplied. Check credentials and retry. Usernames and passwords are case sensitive.

6.1.3 An unrecoverable failure has occurred. Please check your installation



Description: This indicates that Excel's RTD service is not registered correctly. Contact IHS Markit Securities Finance support for assistance.

6.2 Data unavailable errors

Error	Description
#NAME? or #NUM!	This is a built-in Excel error message. It can occur because the Addin has not been registered. Refer to section 2.6, Toolkit installation checks, for more details. It can also occur if a cell contains a calculation using the results of a toolkit formula, where the toolkit formula has returned an error
#DX: NO DATA#	Data is not available for the specified date or field
#DX: NOT FOUND#	The identifier specified could not be found
#DX: NO PERMISSION#	User does not have permission to view the requested data
#DX: INVALID DATE#	The requested date is outside the range of dates available for the field specified
#DX: LATEST DATE ONLY#	Historical data has been requested for a field that is only available for the latest date
#DX: LATEST DATA ONLY#	Historical data has been requested for a field that is only available for the latest data
#DX: NOT AVAILABLE#	The identifier specified is not found
#DX: SINGLE DATE ONLY#	Historical data has been requested for a field that is only available for a single date

6.3 Formula errors

Error	Description
#NAME? or #NUM!	This is a built-in Excel error message. It can occur because the Addin has not been registered. Refer to section 2.6, Toolkit installation checks, for more details. It can also occur if a cell contains a calculation using the results of a toolkit formula, where the toolkit formula has returned an error
#DX: NO FIELDNAME SPECIFIED#	No field name is included in the formula
#DX: NO IDENTIFIER SPECIFIED#	No identifier is included in the formula

Error	Description
#DX: INVALID DATE SPECIFIED #	Displayed if the format of the date is incorrect
#DX: INVALID IDENTIFIER TYPE#	The specified identifier type is not recognised
#DX: AMBIGUOUS IDENTIFIER VALUE#	The identifier part of the formula is incomplete
#DX: INAPPLICABLE FIELD#	A field has been requested for an instrument that does not support it
#DX: INVALID FIELD MODIFIER#	The field modifier is either not recognised or is not applicable to the field specified
#DX: INVALID FIELD#	The field specified is not valid
#DX: INVALID FILTER#	The filter selected is invalid
#DX: INVALID FIELD MODIFIER INDEX#	The specific field modifier index has not been recognised
#DX: INVALID ORDER TYPE#	The order type has not been recognised
#DX: INVALID RANK#	The rank type is invalid
#DX: INVALID FILTER VALUE#	The filter value is invalid
#DX: INAPPLICABLE METHOD#	A method has been selected that is not supported
#DX: INAPPLICABLE ID VALUE#	An ID Value has been requested that is not supported
#DX: DUPLICATE FILTER#	Duplicate filter information has been entered
#DX: DUPLICATE IDENTIFIER TYPE#	Duplicate identifier types have been entered
#DX: UNKNOWN ERROR#	Unknown error

7 Appendix

7.1 Glossary

Term	Meaning
Toolkit	IHS Markit Securities Finance Toolkit is the component that allows Excel to communicate with the Toolkit server via queries
Navigator	IHS Markit Securities Finance Toolkit Navigator is the component that allows users to visually interact with the Toolkit in the form of an Excel add-in

Term	Meaning
Installation folder	The location where the software has been installed. By default this is "C:\Program Files\IHS Markit\IHS Markit Toolkit" and contains all the application DLL and Configuration files
Documents folder	The user's default folder
Markit Toolkit folder	The IHS Markit Toolkit folder under the user's Documents folder. Application logs are stored in this folder
Add-in Express folder	The Add-in Express folder under the user's Documents. Navigator logs are stored in this folder
RTD Server	Real Time Data Server. This acts as a translator between Microsoft Excel and the IHS Markit Securities Finance Toolkit Server
Toolkit formula structure	=dxd(Identifier,Field Namespace,Date,Modifiers,Filters). Refer to the Data Dictionary for more details
GUI	Graphical User Interface
The Application	Toolkit, Navigator or IHS Markit Toolkit Admin Tool depending on context
User's Temp folder	Temporary folder for the logged on user. This can be found by clicking Start then Run, typing %TEMP% and pressing Enter

7.2 URLs

Item	URL
Feed Items	http://feeds.feedburner.com/MarkitSecuritiesFinanceRSS
Help URL	https://markit.secure.force.com/customers/LiveChatButton1
Support Email	MSF-support@markit.com

8 Support

A dedicated team of IHS Markit support specialists are available to answer any queries you have regarding the IHS Markit Securities Finance Toolkit. The team can be contacted via live chat from the Live Help tab in the IHS Markit Toolkit Admin Tool and the Help tab in the Navigator, and via email and telephone:

Email: MSF-support@markit.com

Phone: Europe: +800 6275 4800

North America: +1 877 762 7548

APAC, Japan: +81 3 6262 1887

APAC, Singapore: +65 6922 4210

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