

# **XLFiX**

FIX Add-in for MS Excel



## **User Guide (4.1)**

Preface.....	3
1.1 Introduction.....	3
1.2 Intended Audience .....	3
1.3 Abbreviations.....	3
1.4 System Requirements .....	3
2 Installation and Removal .....	4
2.1 Installing XLFiX.....	4
2.2 Removing XLFiX .....	4
3 Getting Started – XLFiX Menu .....	5
3.1 FIX Session Manager .....	5
3.1.1 General Properties .....	5
3.1.2 Sessions .....	6
3.1.3 Basic Session Properties.....	8
3.1.4 Advanced Session Properties .....	9
3.1.5 Specifying Additional Administration Tags .....	10
3.1.6 Monitors .....	12
3.1.7 Monitor Properties.....	13
3.1.8 Logging .....	14
3.2 Data Dictionary Viewer / Editor .....	15
3.2.1 Data Dictionary Editor Window .....	15
3.2.2 Changing the FIX Version .....	15
3.2.3 Messages .....	16
3.2.4 Components.....	17
3.2.5 Repeating Groups .....	18
3.2.6 Fields .....	19
3.2.7 Field Values.....	20
4 Parsing of FIX Messages .....	21
4.1 Automatic Sheet Creation.....	21
4.2 Receiving Messages Using VBA.....	22
5 Sending a message .....	24
5.1 Creating a message .....	24
5.1.1 Repeating Groups .....	25
5.2 Sending Messages.....	26
5.2.1 Sending a message ad-hoc.....	26
5.2.2 Sending a messages using VBA.....	26
6 Connection Status .....	27
6.1 Handling Disconnections using VBA.....	27
6.2 Session Manager .....	28

## Preface

### 1.1 Introduction

This document gives an overview of XLFiX and its uses. The tool is delivered as a COM Add-in for Excel and provides Excel with FIX functionality. It can be used for parsing FIX messages to and from Excel spreadsheets. Messages can be sent and received directly to and from Excel. The tool can be configured to match your specific implementation (including any user defined content). This product includes software developed by quickfixengine.org <http://www.quickfixengine.org/>

### 1.2 Intended Audience

This document is intended for users of XLFiX. It covers the aspects of setting up Microsoft Excel for use with FIX.

### 1.3 Abbreviations

Table 1 provides a description for each abbreviation used in the document:

Abbreviation	Description
COM	Component Object Model
FIX	Financial Information Exchange
IP	Internet Protocol

Table 1

### 1.4 System Requirements

The XLFiX COM Add-in is compatible with Excel 2000 or later running on Windows NT 4, Windows 2000 or Windows XP. It also requires the "Microsoft .Net Framework 1.1 Redistributable" package to be installed on the PC. This is freely available from the Microsoft website:

<http://msdn.microsoft.com/netframework/technologyinfo/howtoget/default.aspx>

## 2 Installation and Removal

### 2.1 Installing XLFiX

Open the zip file and double click the Setup.exe file. A welcome page will appear. Click the “Next” button in the bottom right hand corner.

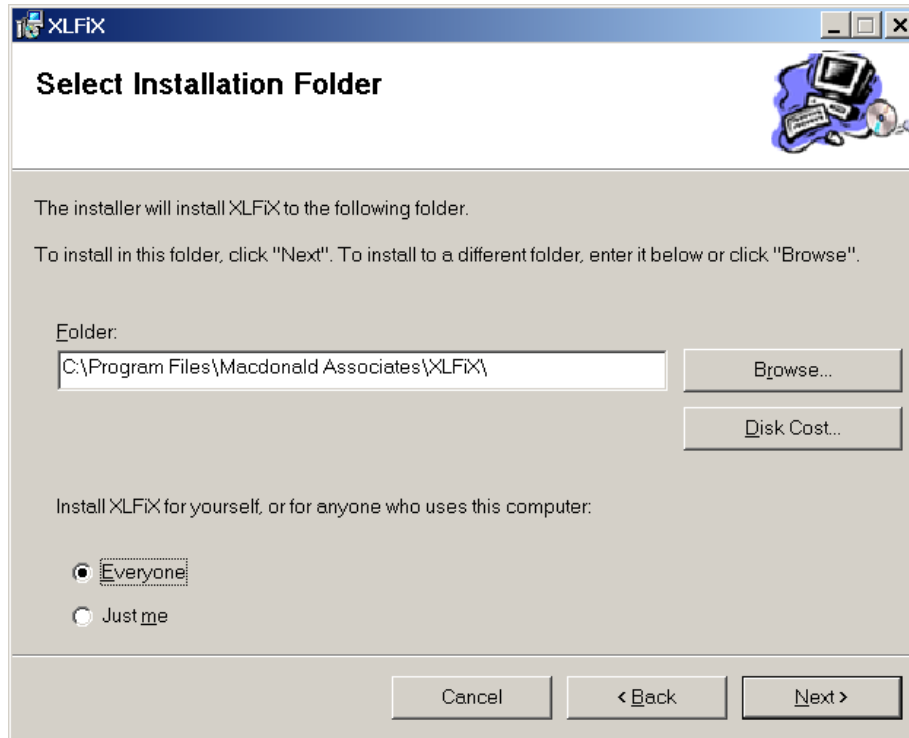


Figure 1

Enter the path for the installation (see Figure 1), then click the “Next” button. The package will take a few seconds to install. Now you’re ready to go... start Excel and you will see the XLFiX menu on Excel’s main menu bar.

### 2.2 Removing XLFiX

The package can be removed using “Add or Remove Programs” from the Windows Control Panel (see Figure 2).

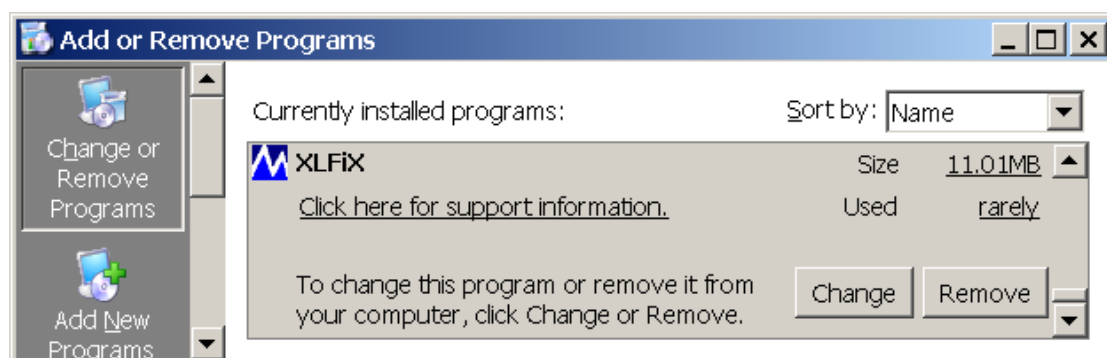


Figure 2

## 3 Getting Started – XLFiX Menu

The main menu can be found on the Excel menu bar (see Figure 3).

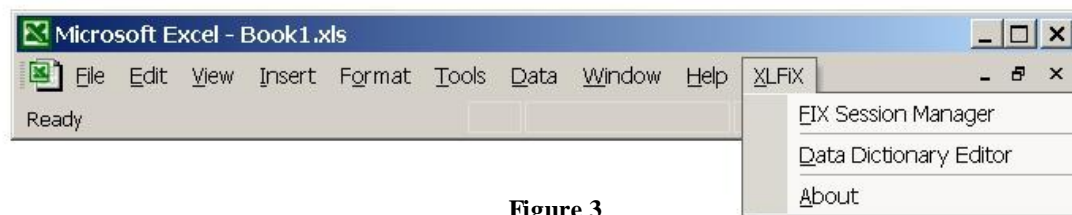


Figure 3

### 3.1 FIX Session Manager

The Session Manager allows you to setup and control FIX sessions with the minimum of fuss. Multiple sessions can be created, deleted, started, stopped, monitored, individually or collectively from a single window, making it easy to stay in control.

The Session Manager stores all configurations in a configuration file. Configurations can be created saved and reopened using the options in the Session Manager *File* menu.

#### 3.1.1 General Properties

When creating a new configuration file you will initially be prompted to enter general properties.

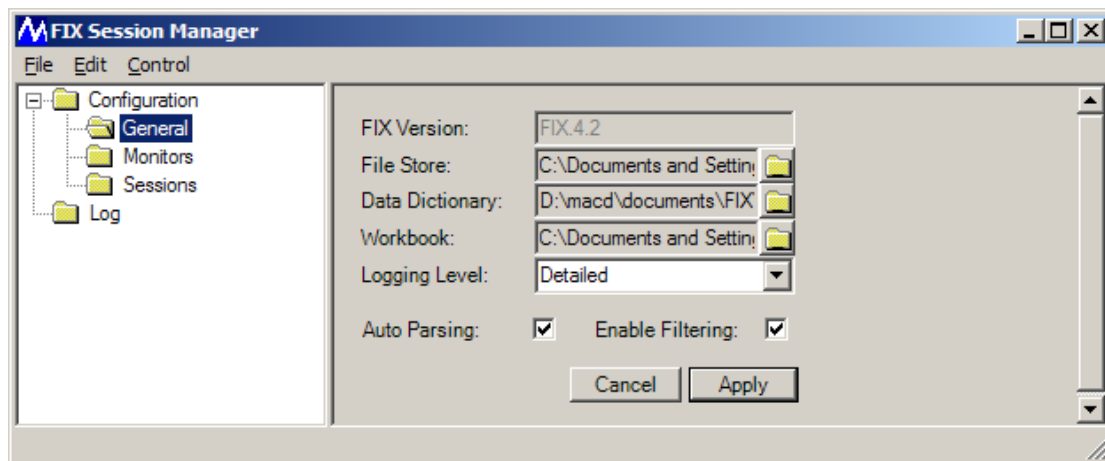


Figure 4

##### 3.1.1.1 Workbook

A *Workbook* must be selected.

##### 3.1.1.2 File Store

Select a folder for the filestore. This folder will be used for storing temporary session files and log files. This might also be a useful location for storing the Session Manager configuration file, and possibly the workbook.

### 3.1.1.3 Data Dictionary

Select an XML document to be used as a *Data Dictionary*. Standard Data Dictionaries can be found in the installation directory (e.g. C:/Program Files/Macdonald Associates/XLfiX/FIX42.xml). The *Data Dictionary* is used for determining which messages/tags are parsed to spreadsheets and also for basic validation of messages. These dictionaries can be changed for your own implementations using the Data Dictionary Editor (see section 3.2), e.g. for user defined fields.

### 3.1.1.4 Logging Level

Select an appropriate logging level for your needs. *Normal* logging provides minimal logging (i.e. events, warnings and errors). *Detailed* logging additionally provides logging of all messages (outgoing and incoming). XLfiX recovers FIX messages from the log each time it is started. If you require this behaviour then select *Detailed* logging. *Debug* logging provides verbose information for debug purposes.

### 3.1.1.5 Auto Parsing

If you wish XLfiX to automatically parse FIX messages to the selected workbook then check the *AutoParsing* checkbox.

### 3.1.1.6 Enable Filtering

If you wish to enable Excel's AutoFilter feature on XLfiX's protected worksheets then check the *Enable Filtering* checkbox.

## 3.1.2 Sessions

XLfiX can be configured to support multiple sessions.

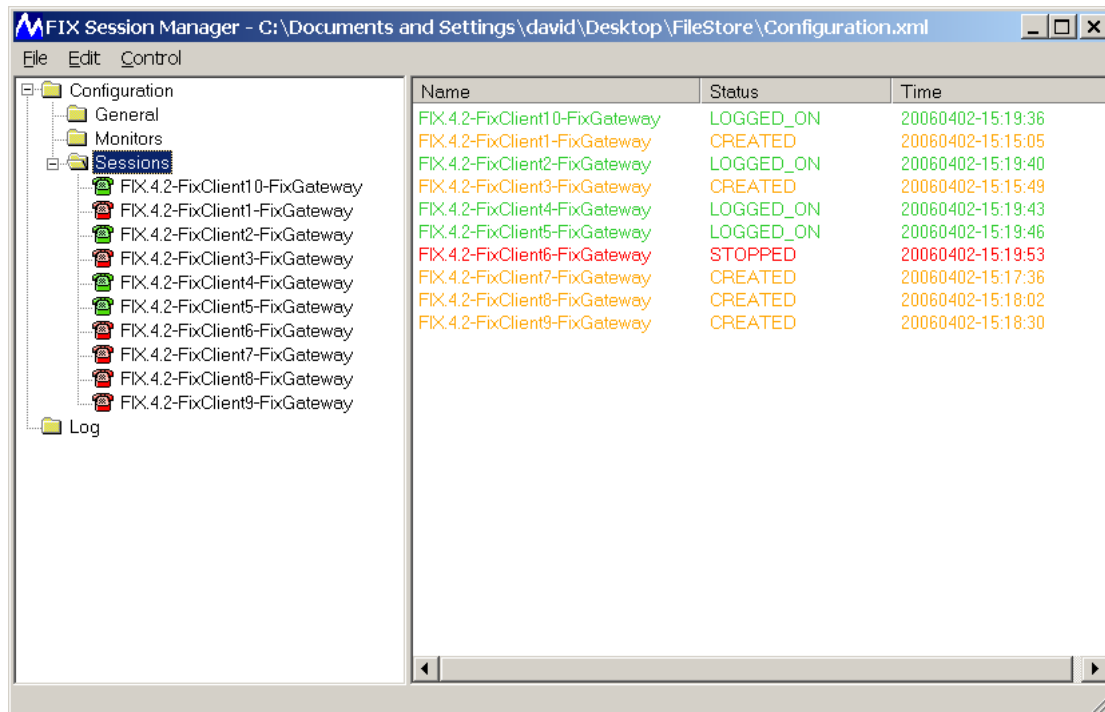


Figure 5

Session properties can be configured for each individual session. The *Sessions* status window provides an overview of the status of each session.

### 3.1.2.1 Creating a Session

To create a new session, select the *Sessions* tree node from the tree view on the left side of the window and then select the *Edit->Create* menu option. A new session will be added to the tree. Enter the appropriate properties (see section 3.1.3).

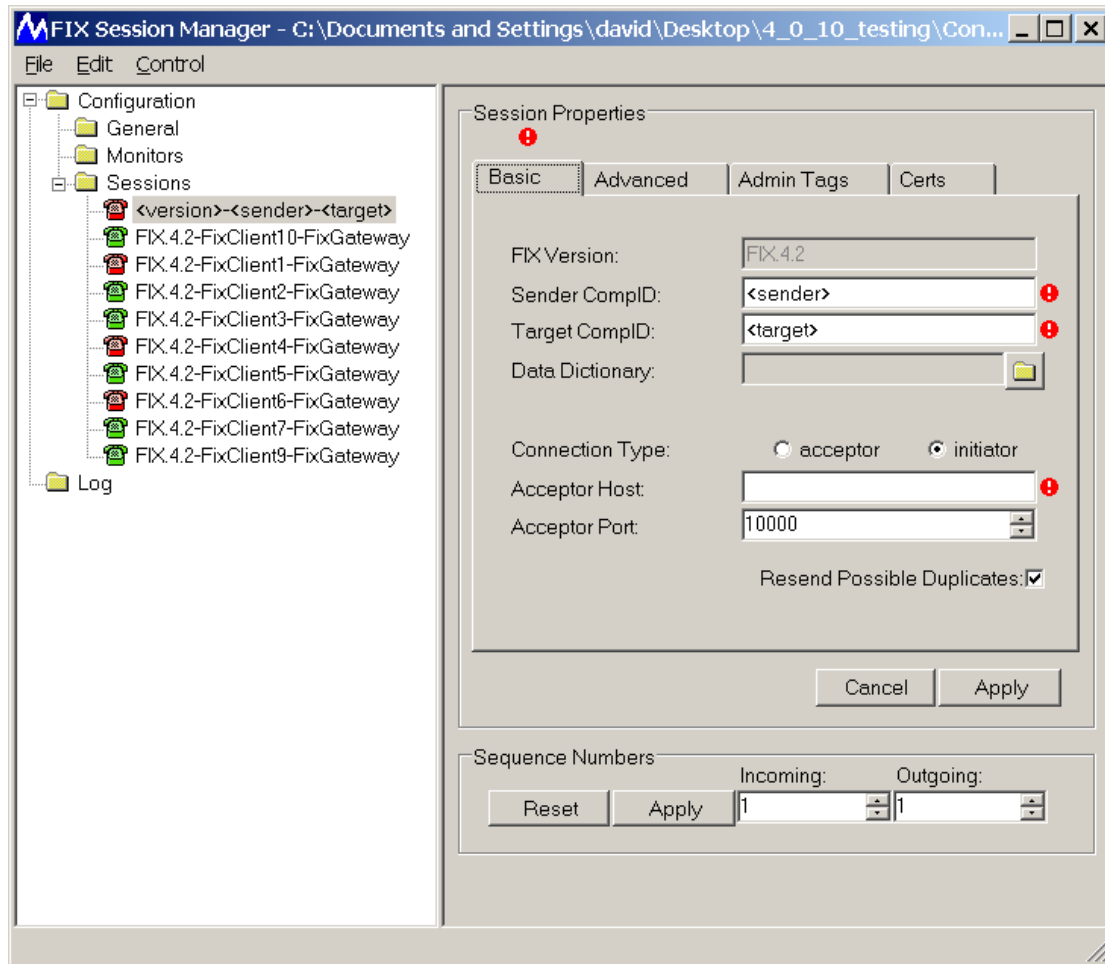


Figure 6

### 3.1.2.2 Deleting a Session

To delete a session, select the appropriate *Session* tree node from the tree view on the left side of the window and then select the *Edit->Delete* menu option.

### 3.1.2.3 Starting a Session

To start a session, select the appropriate *Session* tree node from the tree view on the left side of the window and then select the *Control->Start* menu option. To start all sessions, select the *Sessions* tree node and then select the *Control->Start All* menu option.

### 3.1.2.4 Stopping a Session

To stop a session, select the appropriate *Session* tree node from the tree view on the left side of the window and then select the *Control->Stop* menu option. To stop all sessions, select the *Sessions* tree node and then select the *Control->Stop All* menu option.

### 3.1.3 Basic Session Properties

#### 3.1.3.1 FIX Version

The FIX version is determined by the *Data Dictionary*. The *BeginString* is automatically selected when you select a *Data Dictionary*.

#### 3.1.3.2 TargetCompID

Enter the computer ID for the FIX partner you wish to connect to in *TargetCompID* text box. The *TargetCompID* is a string that identifies the FIX partner you are establishing a connection with (e.g. "FixGateway") and is provided by the FIX partner.

#### 3.1.3.3 SenderCompID

Enter your own computer ID in *SenderCompID* text box (e.g. "FixClient1"). The *SenderCompID* is a string that identifies your XLFIX instance and must be agreed with the FIX partner you are establishing a connection with.

#### 3.1.3.4 Data Dictionary

Session properties can select a separate *Data Dictionary*. If a *Data Dictionary* is not selected for the session then the *Data Dictionary* in general properties will be used.

#### 3.1.3.5 Connection Type

Select the *Connection Type* by specifying whether you will be the *acceptor* or *initiator* of the connection.

#### 3.1.3.6 Acceptor Host

Enter the host name or IP address of the acceptor in *Acceptor Host*. If your instance of XLFIX is using a *Connection Type* of initiator then the Acceptor Host will be set to the host name or IP address of the machine you are connecting to. Otherwise it will be the host name or IP Address of your PC.

#### 3.1.3.7 Acceptor Port

Enter the port used by the acceptor in *Acceptor Port*. Avoid using a port reserved for other services.

#### 3.1.3.8 Resend Possible Duplicates

Check the *Resend Poss Dups* checkbox if you want to allow possible duplicate messages to be automatically resent to the counterparty.

#### 3.1.3.9 Next Incoming/Outgoing SeqNum

The next sequence number for incoming/outgoing messages is shown in the Session Properties form. This can be changed or reset prior to starting a session, however, this should only be considered in exceptional circumstances for resynchronisation purposes, or for manually resetting the session.

## 3.1.4 Advanced Session Properties

### 3.1.4.1 Start Day / End Day

For sessions that span more than one day, select an appropriate *Start Day* and *End Day*. If a session is scheduled to run for a single day or less, use a value of “Any”.

### 3.1.4.2 Start Time / End Time

Enter the *Start Time* and *End Time* in the format “hh:mm:ss”. The initiator of the connection will only remain connected between these times.

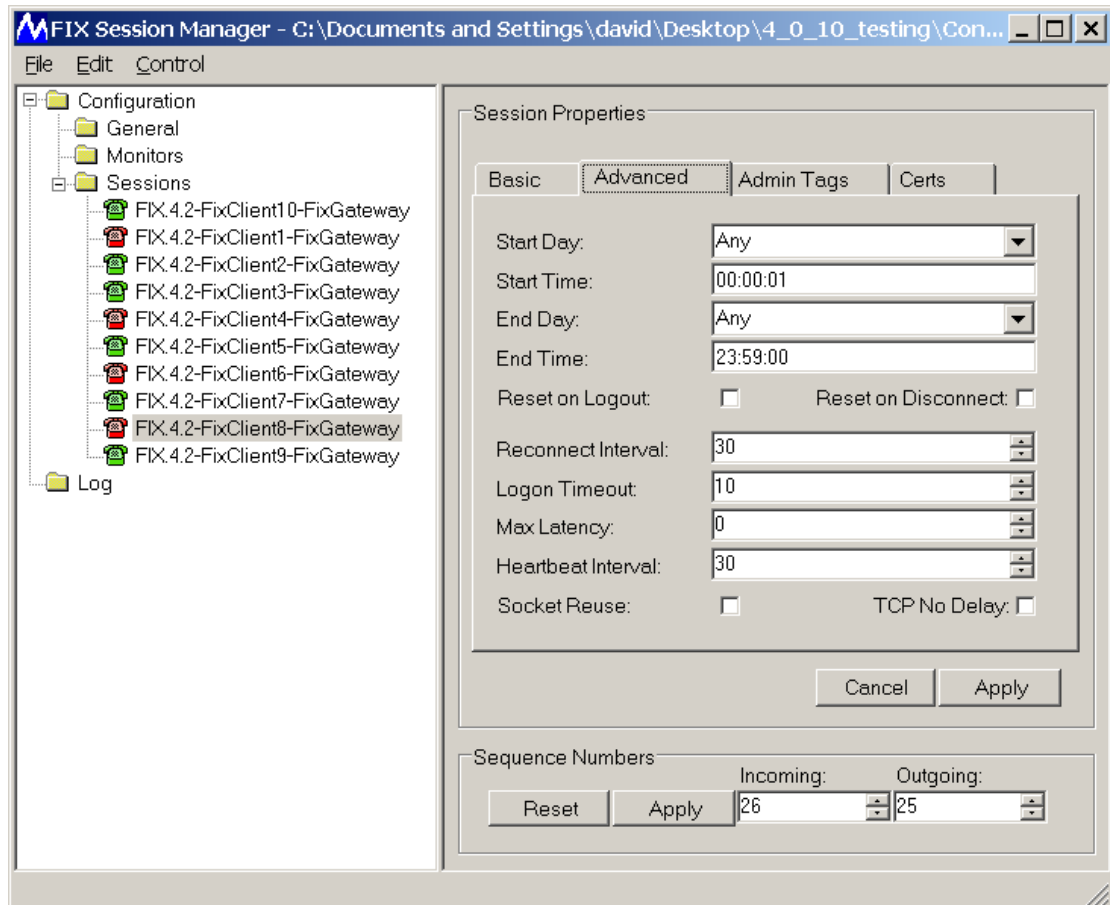


Figure 7

### 3.1.4.3 Reconnect Interval

The *Reconnect Interval* is the number of seconds XLFiX will wait before attempting to reconnect (only relevant to the initiator of the connection).

### 3.1.4.4 Heartbeat Interval

The *Heartbeat Interval* is the maximum number of seconds between FIX messages.

### 3.1.4.5 Logon Timeout

The *Logon Timeout* is the number of seconds XLFiX will wait for a Logon response before closing the socket (only relevant to the initiator of the connection).

### 3.1.4.6 Socket Reuse

Check the *Socket Reuse* option if you would like XLFiX to start even if the socket is still in the Time Wait state from a previous connection (only relevant to the acceptor).

### 3.1.4.7 Reset on Logout

For sessions that must be reset on logout, check the *Reset on Logout* checkbox.

### 3.1.4.8 Reset on Disconnect

To automate resetting a session on disconnect, use *Reset on Disconnection*.

### 3.1.4.9 TCP No Delay

Check the *TCP No Delay* checkbox if you want to disable the use of the nagle algorithm on the socket.

## 3.1.5 Specifying Additional Administration Tags

Optionally select a range containing additional admin tag values as shown in Figure 8.

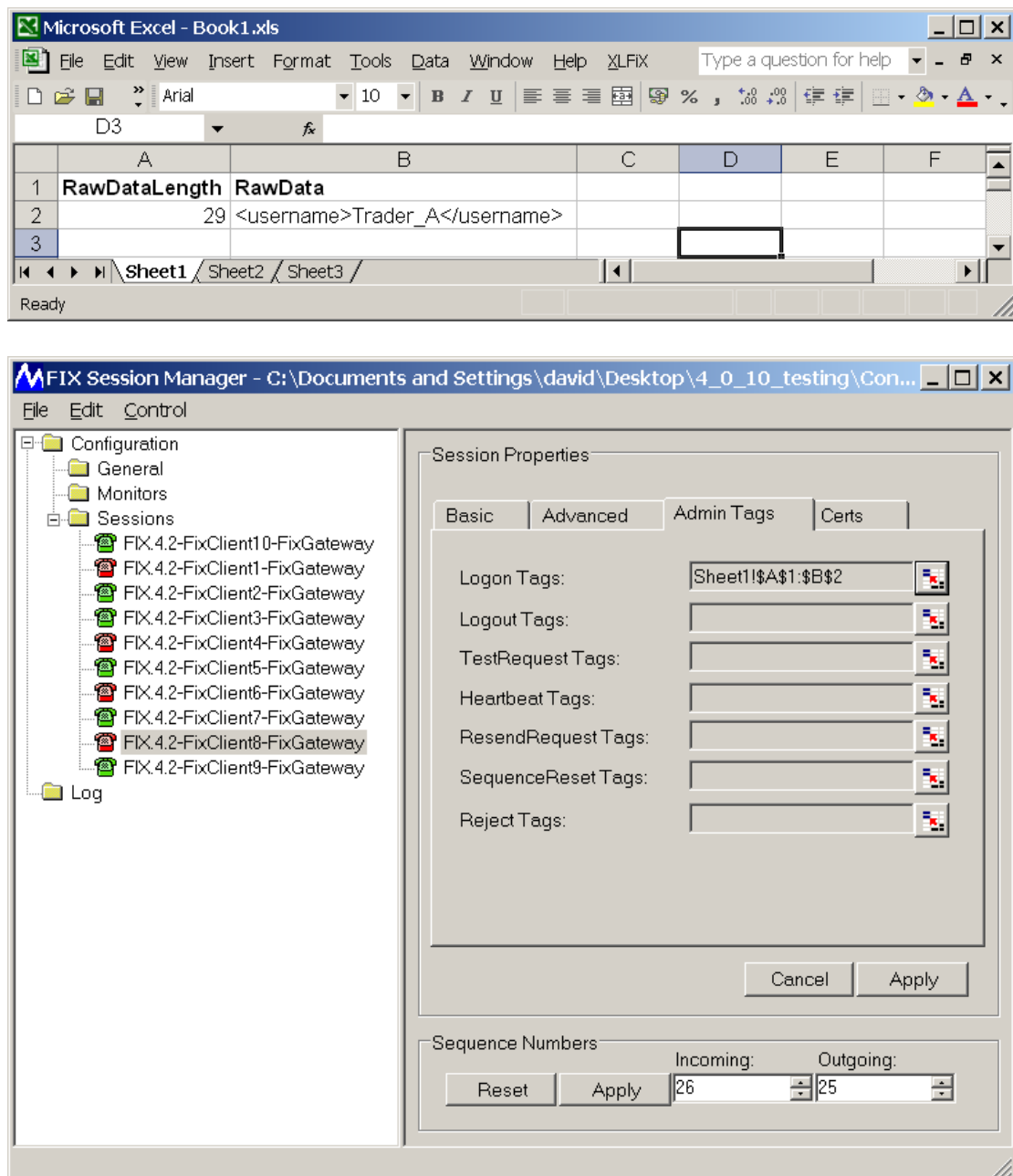


Figure 8

### 3.1.5.1 EMX Certificate

Select an *EMX certificate* when connecting to EMX, otherwise select “N/A”. This will result in a Certificate tag being added to the Logon message and the DigSignature and SignatureTime tags being added to Application messages.

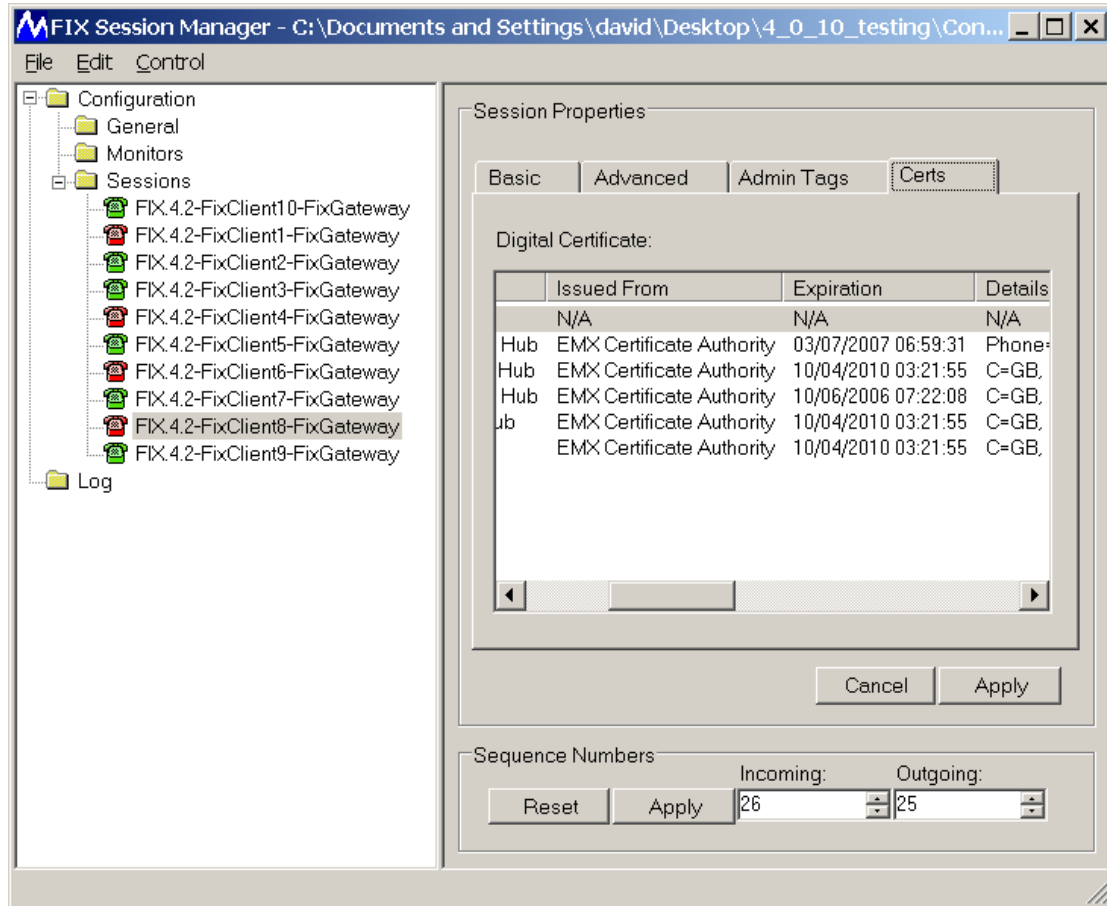


Figure 9

### 3.1.6 Monitors

XLFiX can be configured to monitor selected log files and parse any FIX messages to spreadsheets in real-time, in much the same way as for active sessions.

#### 3.1.6.1 Creating a Monitor

To create a new session, select the *Monitors* tree node from the tree view on the left side of the window and then select the *Edit->Create* menu option. A new monitor will be added to the tree.

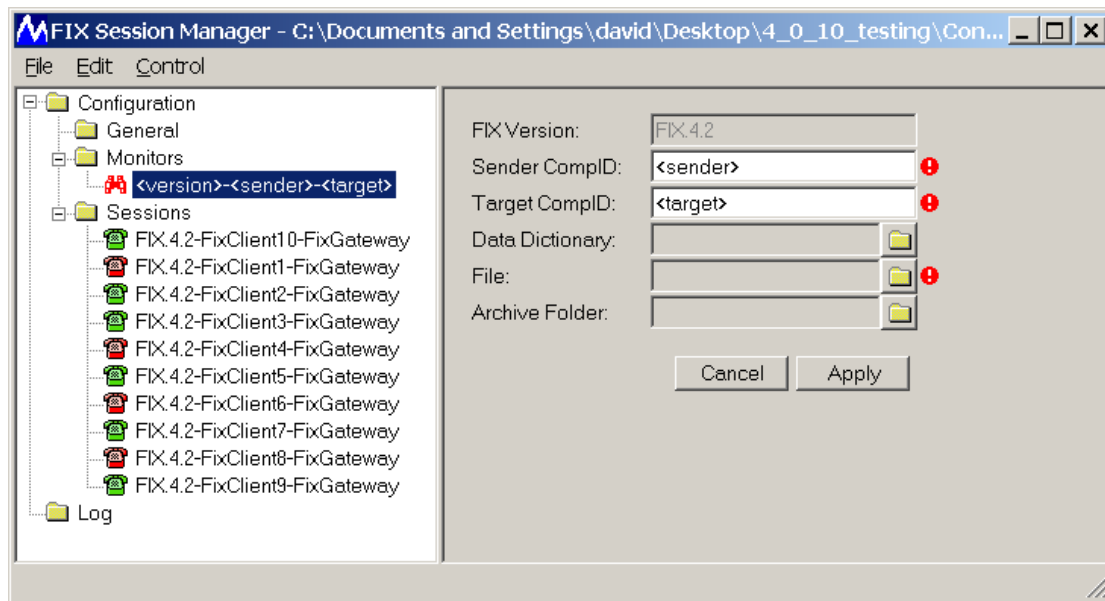


Figure 10

#### 3.1.6.2 Deleting a Monitor

To delete a monitor, select the appropriate *Monitor* tree node from the tree view on the left side of the window and then select the *Edit->Delete* menu option.

#### 3.1.6.3 Starting a Monitor

To start a monitor, select the appropriate *Monitor* tree node from the tree view on the left side of the window and then select the *Control->Start* menu option. To start all monitors, select *Monitors* tree node and then select the *Control->Start All* menu option.

#### 3.1.6.4 Stopping a Monitor

To stop a monitor, select the appropriate *Monitor* tree node from the tree view on the left side of the window and then select the *Control->Stop* menu option. To stop all monitors, select *Monitors* tree node and then select the *Control->Stop All* menu option.

## **3.1.7 Monitor Properties**

### **3.1.7.1 FIX Version**

The FIX version is determined by the Data Dictionary. The BeginString is automatically selected when you select a Data Dictionary.

### **3.1.7.2 TargetCompID**

Enter the computer ID for the FIX partner you wish to connect to in *TargetCompID* text box. The *TargetCompID* is a string that identifies the FIX partner you are establishing a connection with (e.g. "FixGateway") and is provided by the FIX partner.

### **3.1.7.3 SenderCompID**

Enter your own computer ID in *SenderCompID* text box (e.g. "FixClient1"). The *SenderCompID* is a string that identifies your XLFiX instance and must be agreed with the FIX partner you are establishing a connection with.

### **3.1.7.4 Data Dictionary**

Session properties can select a separate *Data Dictionary*. If a Data Dictionary is not selected for the session then the *Data Dictionary* in general properties will be used.

### **3.1.7.5 File name**

Select the file that is to be monitored.

### **3.1.7.6 Archive Folder**

If an archive folder is selected then FIX messages will be parsed to HTML table format in the specified folder, rather than spreadsheet format. This enables you to create an easy to read archive of FIX messages.

### 3.1.8 Logging

XLFiX maintains a log in the “log” subdirectory of the Filestore. This is automatically rotated to avoid the log becoming too large. The Log viewer of the Session Manager allows you to see the last 1,000 lines of the log file (most recent at the top). The viewer also provides a translation of any FIX messages, this makes it easier to analyse the logs.

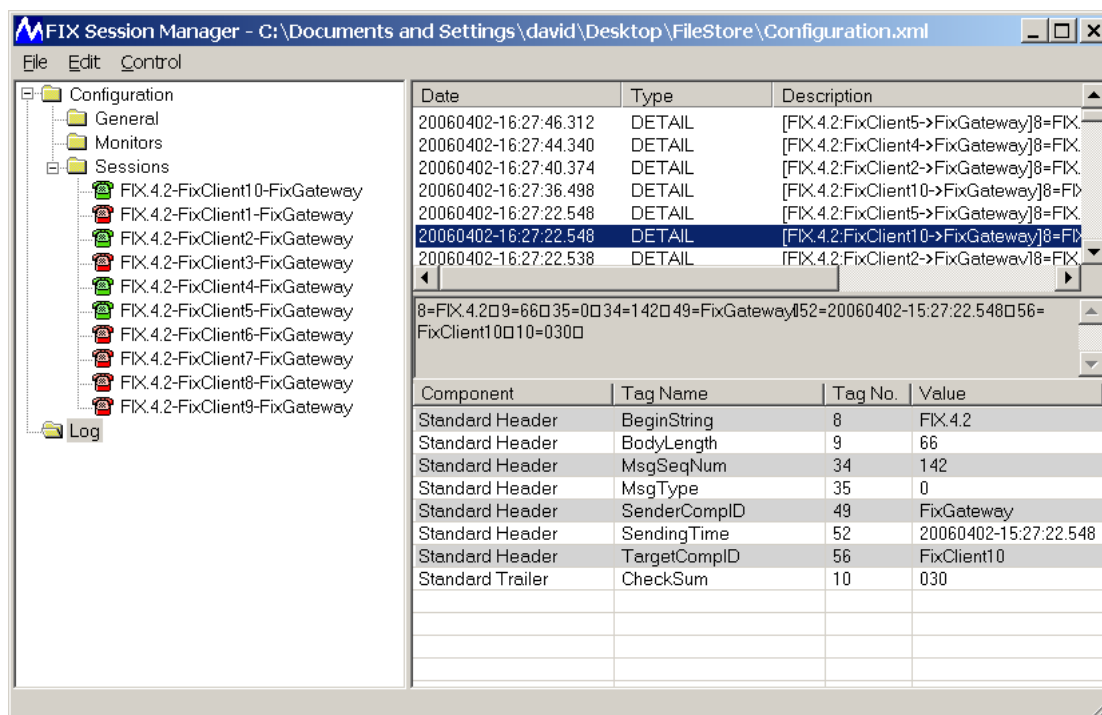


Figure 11

To copy translated fields from the log viewer to the clipboard, select the rows of interest, right-click and select “copy” from the pop-up menu.

A *log()* interface is also exposed through VBA allowing the user to add log messages to the same log file from a macro (see example in Figure 23).

## 3.2 Data Dictionary Viewer / Editor

### 3.2.1 Data Dictionary Editor Window

The Data Dictionary file editor can be started by selecting the XLFiX->Data Dictionary Editor from the menu. The *Data Dictionary Editor* window will appear:

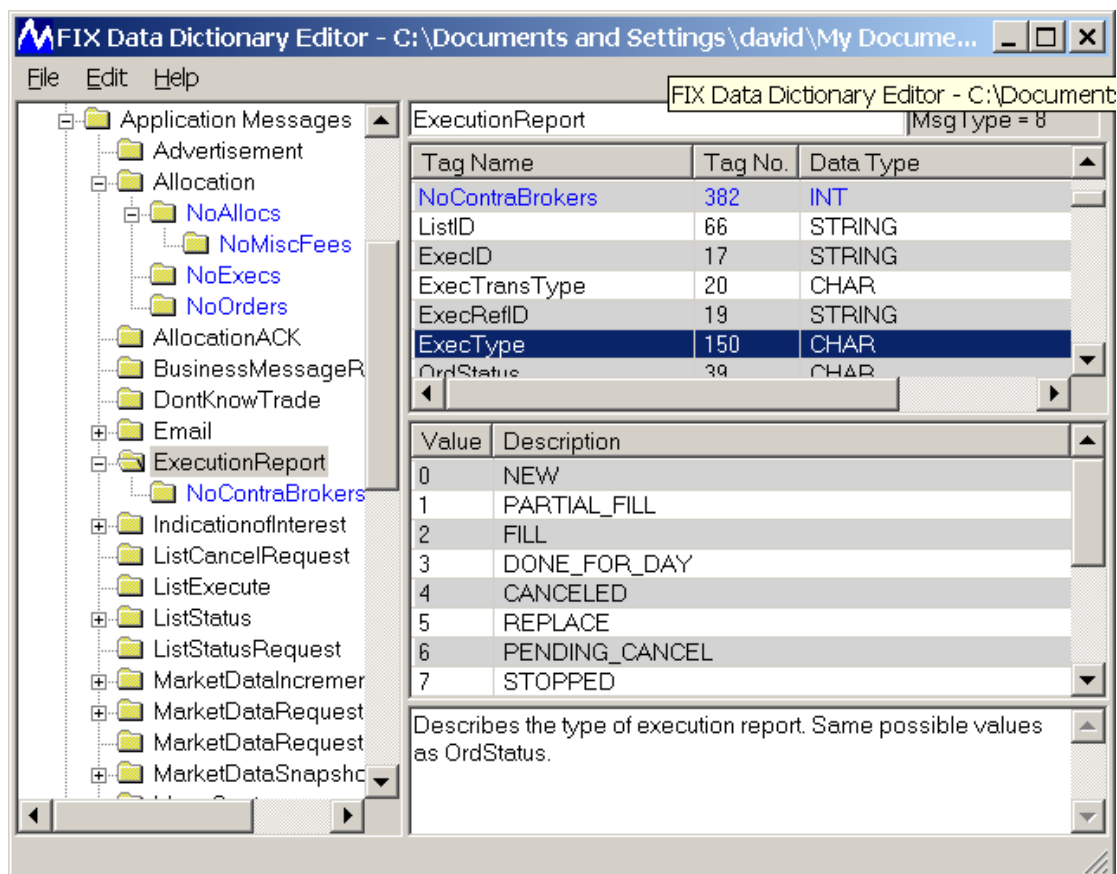


Figure 12

#### 3.2.1.1 Opening a Data Dictionary

To open a Data Dictionary, select File->Open from the main menu of the editor and select the file from the file browser.

#### 3.2.1.2 Saving a Data Dictionary

To save the file, select either File->Save or File->SaveAs from the main menu of the editor.

#### 3.2.1.3 Creating a Data Dictionary

XLFiX is distributed with the QuickFIX Data Dictionaries and these can be found in the installation directory for XLFiX. These should be used as the starting point for creating a new Data Dictionaries. To create a new Data Dictionary, open one of the standard dictionaries, edit it and save it with a new name (i.e. SaveAs).

### 3.2.2 Changing the FIX Version

To change the FIX version used, double-click the version node in the Tree view on the left side of the editor. Then enter the new Major and Minor version numbers in the input box.

### 3.2.3 Messages

#### 3.2.3.1 Creating a Message

To create a message, double-click the “Application Messages” node in the Tree view on the left side of the editor and the Message dialog box will open:

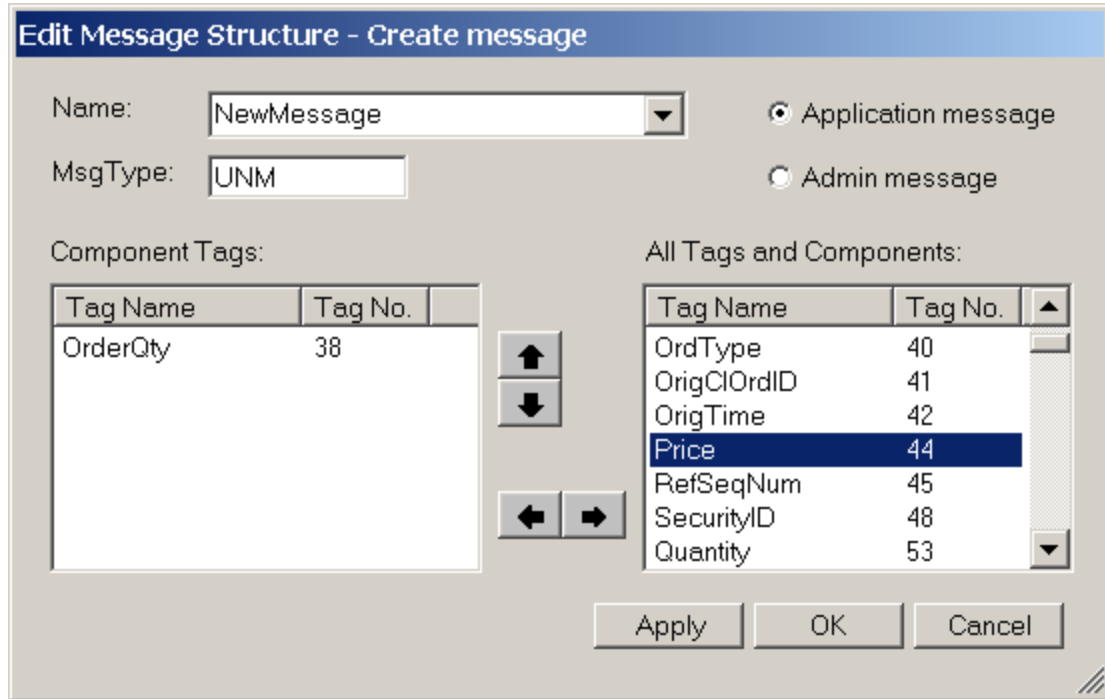


Figure 13

Specify the Name, MsgType and category (i.e. Admin or Application) of the message. Select the tags/components from the list box on the right and add them using the left arrow button. Select the tag/components from the list box on the left and remove them using the right arrow button. Change the order of the tags by selecting them a moving them up or down using the up and down arrows.

#### 3.2.3.2 Viewing a Message

Select the message node from the tree view on the left side of the main editor, the fields will be displayed in the list view on the top right of the main editor. Expand the message node to reveal nodes for components and groups contained in this message.

#### 3.2.3.3 Changing a Message

To change a message, double-click the message node in the tree view on the left side of the main editor and the Message dialog box will open (see Figure 13). Change the message in the same way as for creating a new message (see section 3.2.3.1). To change the name of a message select the message node from the tree view and then enter the new name in the text box at the top of the main editor window.

#### 3.2.3.4 Deleting a Message

To delete a message, right-mouse-click on the message node in the tree view and select Delete from the context menu.

## 3.2.4 Components

### 3.2.4.1 Creating a Component

To create a component, double-click the “Components” node in the Tree view on the left side of the editor and the Component dialog box will open:

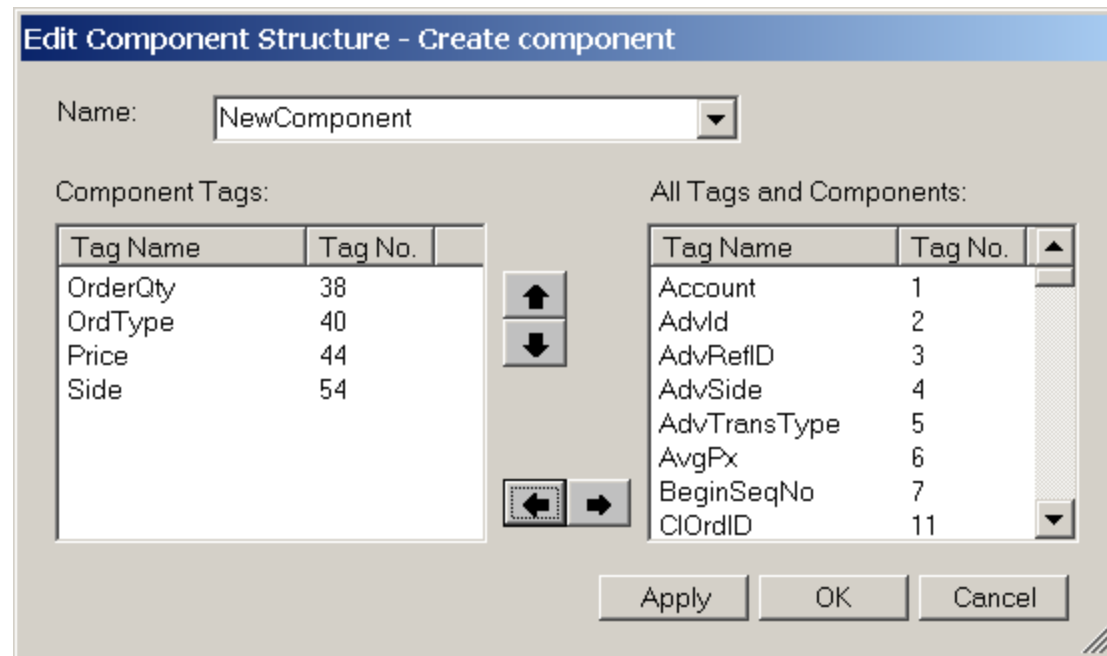


Figure 14

Specify the Name of the component. Select the tags/components from the list box on the right and add them using the left arrow button. Select the tags/components from the list box on the left and remove them using the right arrow button. Change the order of the tags by selecting them and moving them up or down using the up and down arrows.

### 3.2.4.2 Viewing a Component

Components are displayed in **red**. Select the component node from the tree view on the left side of the main editor, the fields will be displayed in the list view on the top right of the main editor. Expand the component node to reveal nodes for other components or groups contained within this component.

### 3.2.4.3 Changing a Component

To change a component, double-click the component node in the tree view on the left side of the editor and the Component dialog box will open (see Figure 14). Change the component in the same way as for creating a new component (see section 3.2.4.1). To change the name of a component select the component node from the tree view and then enter the new name in the text box at the top of the main editor window.

### 3.2.4.4 Deleting a Component

To delete a component, right-mouse-click on the component node in the tree view and select Delete from the context menu.

## 3.2.5 Repeating Groups

### 3.2.5.1 Creating a Group

To create a Repeating Group, first make sure that you have created the field (see section ) that will be used for the number-in-group (e.g. NoMDEntryTypes). Then right-mouse-click on the node (message, component, or group) to which you want to add the new group, and select Create->Group from the context menu:

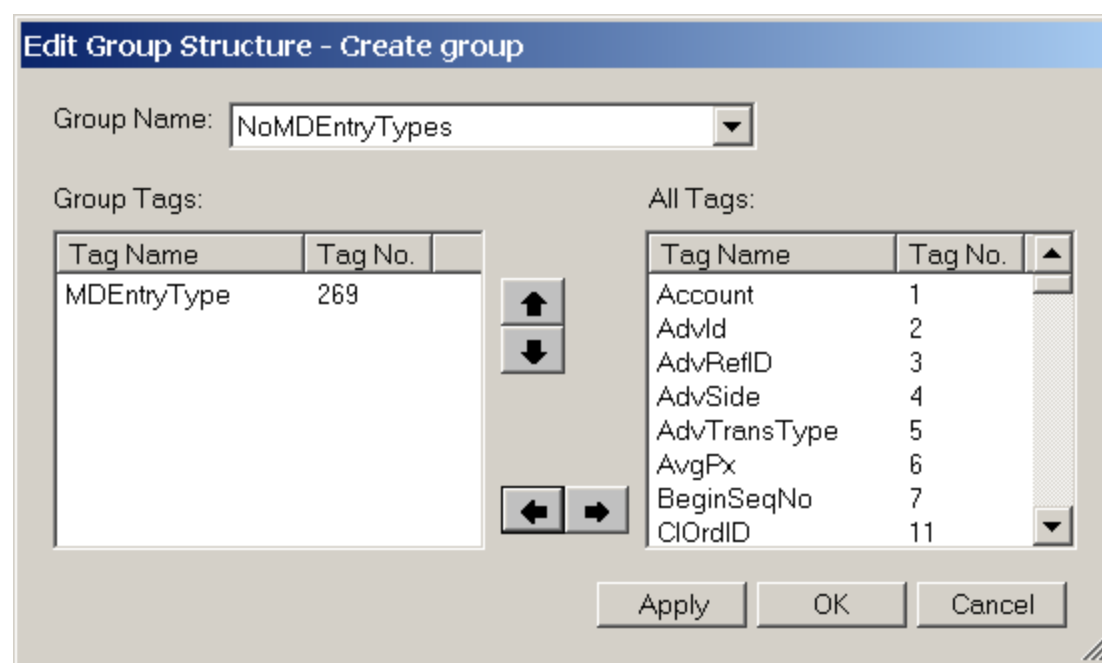


Figure 15

Specify the Group Name by selecting the number-in-group field (e.g. NoMDEntryTypes). Select the tags/components from the list box on the right and add them using the left arrow button. Select the tags/components from the list box on the left and remove them using the right arrow button. Change the order of the tags by selecting them a moving them up or down using the up and down arrows.

### 3.2.5.2 Viewing a Group

Repeating Groups are displayed in **blue**. Select the group node from the tree view on the left side of the main editor, the fields will be displayed in the list view on the top right of the main editor. Expand the group node to reveal nodes for other groups or components contained within this group.

### 3.2.5.3 Changing a Group

To change a group, double-click the group node in the tree view on the left side of the main editor and the group dialog box will open (see Figure 15). Change the group in the same way as for creating a new group (see section 3.2.5.1).

### 3.2.5.4 Deleting a Group

To delete a group, right-mouse-click on the group node in the tree view and select Delete from the context menu.

## 3.2.6 Fields

### 3.2.6.1 Creating a Field

To create a field, double-click the “Fields” node in the Tree view on the left side of the editor and the Fields dialog box will (see Figure 16 ). Enter the tag name and number, specify the data type, and then hit OK.

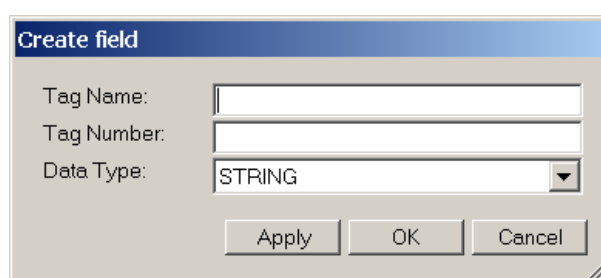


Figure 16

### 3.2.6.2 Viewing Fields

Fields for the selected tree node are displayed in the list view on the top right corner of the main editor window.

### 3.2.6.3 Changing a Field

To change a field, double-click on the field in the field list view and the Fields dialog box will open (see Figure 17). Change the tag name, number, or data type, and then hit OK.

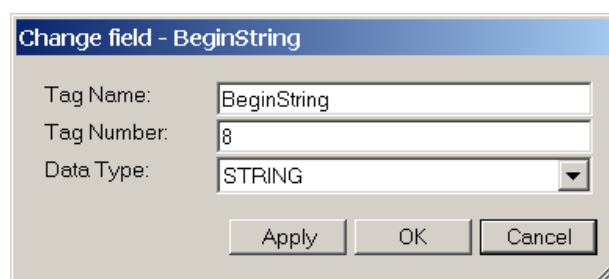


Figure 17

### 3.2.6.4 Deleting a Field

To delete a field, right-mouse-click on the field in the field list view and select Delete from the context menu.

### 3.2.6.5 Required and Implemented Fields

FIX specifies certain fields as “Required”. These fields are identified in the Data Dictionary with a “required” attribute (shown as “Req’d” in the editor, see Figure 18). Similarly not all fields defined in the standard specification need to be implemented. Fields that have been implemented can be identified with the “implemented” attribute (shown as “Impl’d” in the editor, see Figure 18).

ExecutionReport		MsgType = 8			
Tag Name	Tag No.	Data Type	Req'd	Impl'd	
NoContraBrokers	382	INT	False	False	
	66	STRING	False	False	
	17	STRING	True	False	
	20	CHAR	True	False	
	19	STRING	False	False	
	150	CHAR	True	False	
	39	CHAR	True	False	

Change Field  
Delete Field  
Toggle Required Status  
Toggle Implemented Status  
Create Value

Figure 18

These values can be changed by right-clicking on the field and selecting “Toggle Required Status” or “Toggle Implemented Status”. **Implemented fields are used as the basis for creating the message spreadsheets.**

## 3.2.7 Field Values

### 3.2.7.1 Creating a Field Value

To create a Field Value, right-mouse-click on the field to which you want to add the new value, select Create Value from the context menu and the Field Value dialog box will open:

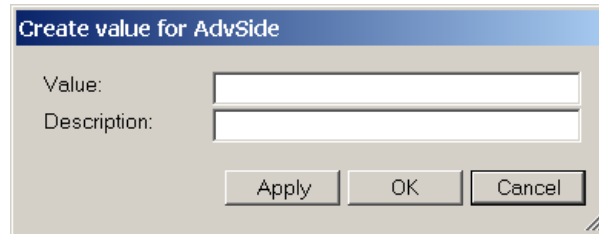


Figure 19

Enter the value and description, and then hit OK.

### 3.2.7.2 Viewing Field Values

Select the field from the field list view in the main editor, the values will be displayed in the value list view, on the bottom right of the main editor.

### 3.2.7.3 Changing a Field Value

To change a field value, double-click on the value in the value list view and the Field Value dialog box will open:

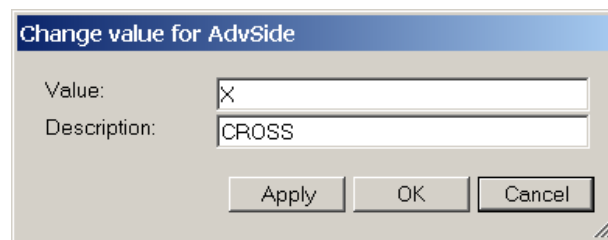


Figure 20

Change the field value or description and hit OK.

### 3.2.7.4 Deleting a Field Value

To delete a field value, right-mouse-click on the field value in the value list view and select Delete from the context menu.

## 4 Parsing of FIX Messages

### 4.1 Automatic Sheet Creation

If you check *AutoParsing* in the general properties then XLFiX automatically creates sheets for each message with “implemented” fields (see section 3.2.6.5). The XLFiX message sheets show all messages sent and receive by XLFiX. A separate sheet is created for each message and each group implemented. They will contain named ranges based on the names of the FIX message and corresponding groups. The sheets are created based on the fields “implemented”, as defined in the Data Dictionary (see section 3.2.6.5).

Key	SecurityID	IDSource	SecurityExchange	Side	TransactTime	OrderQty	OrdType	Price	TimelnForce	ExpireTime
FixClient3_2	DE0005933956	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	100000	2=LIMIT	100.23	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_3	DE0005933949	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	20000	2=LIMIT	120.1	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_4	LU0203243844	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	1000	2=LIMIT	111.67	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_5	IE0032895942	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	50000	1=MARKET		0=DAY	
FixClient3_6	IE00B02KXL92	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	1500	2=LIMIT	99.67	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_7	IE00B02KXL92	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	23000	2=LIMIT	98.23	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_8	IE00B0M62V02	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	10000	2=LIMIT	101.23	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_9	IE00B0M62T89	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	5000	2=LIMIT	87.12	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_10	IE00B0M62S72	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	6000	2=LIMIT	88.11	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_11	IE0032523478	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	7000	1=MARKET		6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_12	IE0032523478	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	16000	2=LIMIT	77.5	0=DAY	
FixClient3_13	IE00B0M62X26	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	1000	2=LIMIT	112.65	0=DAY	
FixClient3_14	IE00B02KXM00	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	1500	1=MARKET		0=DAY	
FixClient3_15	IE00B02KXM00	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	23000	2=LIMIT	95.43	0=DAY	
FixClient3_16	IE00B0M63060	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	10000	2=LIMIT	96	0=DAY	
FixClient3_17	IE00B02KXK85	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	5000	2=LIMIT	54.01	4=FILL_OR_KILL	
FixClient3_18	IE00B0M63284	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	6000	1=MARKET		0=DAY	
FixClient3_19	IE0030974079	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	7000	2=LIMIT	98.23	0=DAY	
FixClient3_20	IE0004855221	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	16000	2=LIMIT	101.23	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_21	IE00B0M63516	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	1000	2=LIMIT	87.12	0=DAY	
FixClient3_22	IE00B0M63177	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	1500	2=LIMIT	88.11	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_23	IE00B0M63953	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	10000	2=LIMIT	112.65	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_24	IE00B0M63730	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	5000	1=MARKET		6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_25	IE00B02KXH56	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	6000	2=LIMIT	96	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_26	IE00B0M63391	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	7000	2=LIMIT	54.01	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_27	IE00B0M63623	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	6000	1=MARKET		6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_28	IE00B0M62Q58	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	7000	2=LIMIT	101.23	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_29	IE0031442068	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	16000	2=LIMIT	87.12	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_30	FR0007054358	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	1000	2=LIMIT	88.11	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_31	FR0007075494	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	1500	1=MARKET		6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_32	FR0007056841	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	10000	2=LIMIT	87.12	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_33	FR0010168765	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	5000	2=LIMIT	88.11	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_34	FR0010168773	4=ISIN_NUMBER	S	1=BUY	20060331-08:18:31	6000	2=LIMIT	95.43	6=GOOD_TILL_DATE	20060331-12:18:3
FixClient3_35	FR0010168781	4=ISIN_NUMBER	S	2=SELL	20060331-08:18:31	5000	2=LIMIT	96	6=GOOD_TILL_DATE	20060331-12:18:3

Figure 21

The columns spanned by the XLFiX named ranges are locked and protected to avoid accidental changes. However, other columns on these sheets are unlocked and editable.

Changes to the *Data Dictionary* selected in the general properties will result in changes to the sheet when the new general properties are applied (i.e. if you implement new tags then these tags will be added to the named ranges when the new general properties are applied)

## 4.2 Receiving Messages Using VBA

If *AutoParsing* is not checked in the general properties then VBA must be used to process messages sent and received. The following is an example of a Class module for reading message tables from the queues. The example simply provides an *OnMessage()* event function which requests the message table names that have queued entries, and then receives each batch and logs the field values.

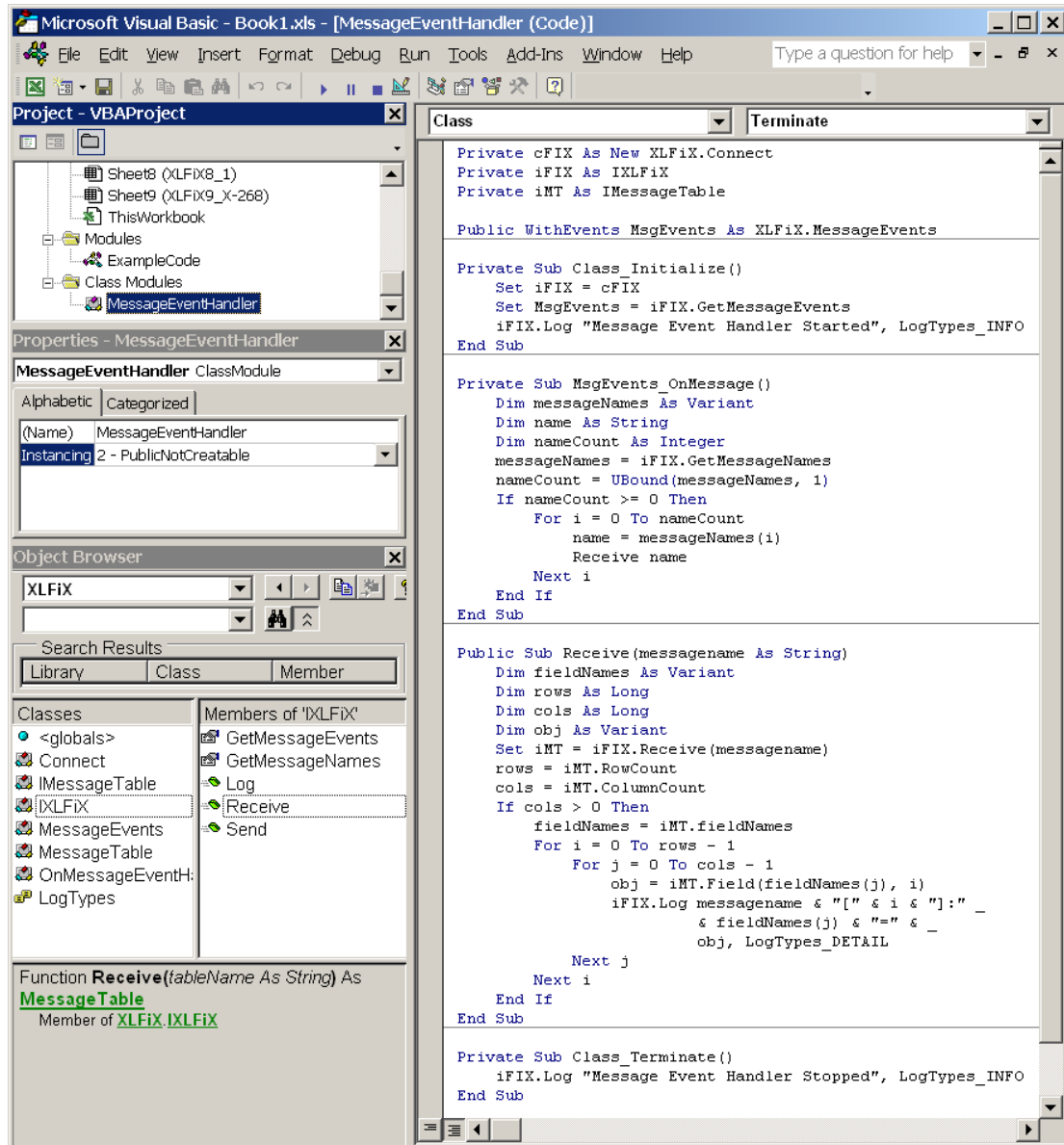


Figure 22

**NB:** The *OnMessage()* event only fires for messages that have “implemented” fields (see section 3.2.6.5).

The Class can be instantiated and terminated as shown in Figure 23.

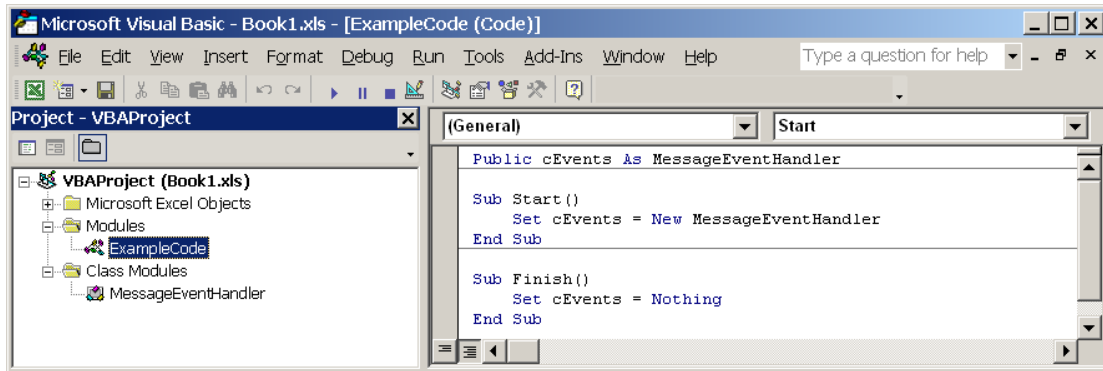


Figure 23

Excel Workbook events can be used to instantiate and terminate the message handler Class. The example code shown in Figure 24 can be added to the “ThisWorkbook” module, as.

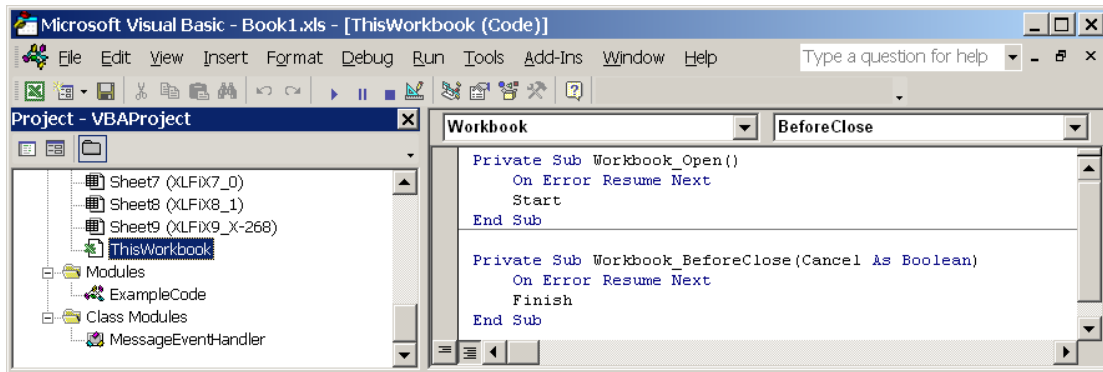


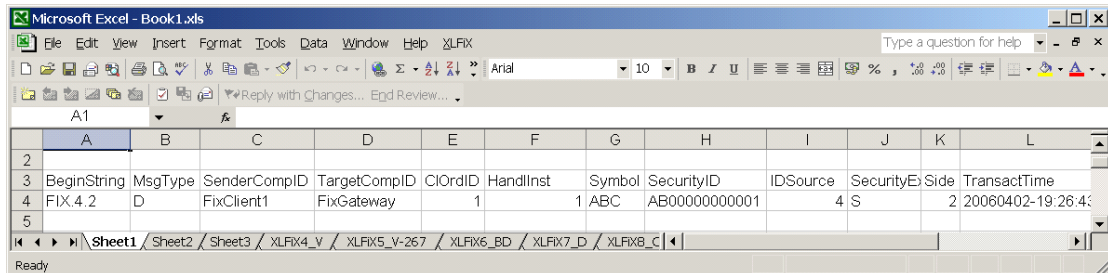
Figure 24

NB: The message handler class should be terminated before attempting to close Excel.

## 5 Sending a message

### 5.1 Creating a message

To create a message for sending, create a table containing the message data you would like to send. The first row should contain the tag numbers or field names and subsequent rows should contain values for the fields (see Figure 25). The first four fields must be BeginString, MsgType, SenderCompID and TargetCompID (in that order).



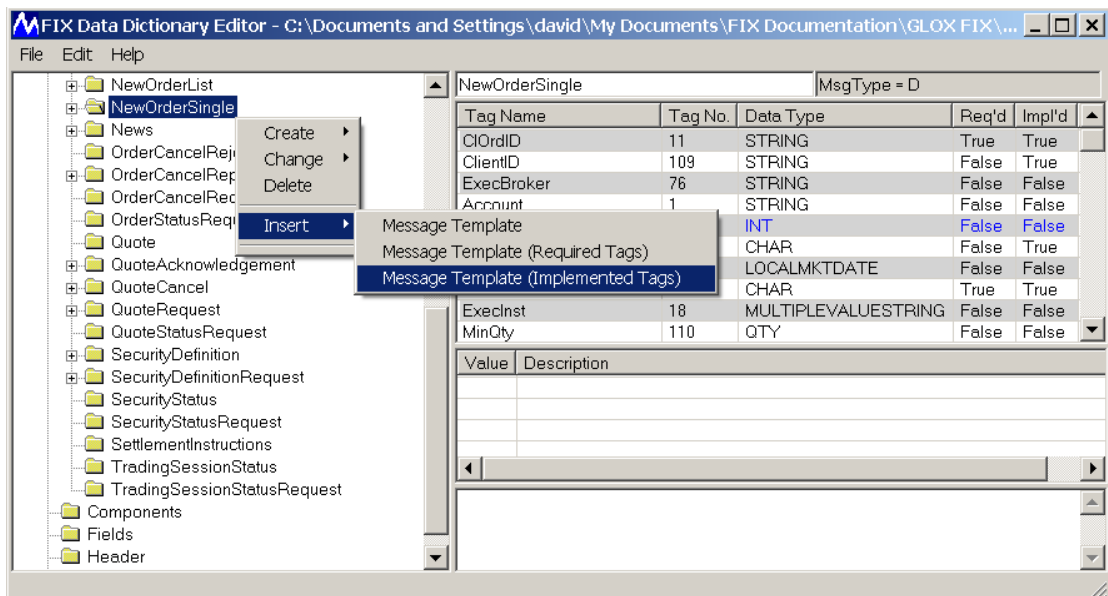
The screenshot shows a Microsoft Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L
2												
3	BeginString	MsgType	SenderCompID	TargetCompID	ClOrdID	HandInst	Symbol	SecurityID	IDSource	SecurityE	Side	TransactTime
4	FIX.4.2	D	FixClient1	FixGateway	1	1	ABC	AB000000000001	4	S		20060402-19:26:40
5												

Figure 25

Tables can contain multiple rows of values, making it possible to send batches of messages.

To make things easier, message templates can be generated from the Data Dictionary editor. Select the cell where the message template is to start (e.g cell in A1 in Figure 25) then select the message from the tree view in the Data Dictionary editor, right-click, and select Insert->Message Template... from the context menu (see Figure 26)



The screenshot shows the FIX Data Dictionary Editor with a tree view on the left and a table on the right. The tree view shows a folder structure with 'NewOrderSingle' selected. A context menu is open over 'NewOrderSingle' with the following options:

- Create
- Change
- Delete
- Insert
  - Message Template
  - Message Template (Required Tags)
  - Message Template (Implemented Tags)

The table on the right shows the details for 'NewOrderSingle' (MsgType = D):

Tag Name	Tag No.	Data Type	Req'd	Impl'd
ClOrdID	11	STRING	True	True
ClientID	109	STRING	False	True
ExecBroker	76	STRING	False	False
Amount	1	STRING	False	False
		INT	False	False
		CHAR	False	True
		LOCALMKTDATE	False	False
		CHAR	True	True
ExecInst	18	MULTIPLEVALUESTRING	False	False
MinQty	110	QTY	False	False

Below the table is a section for 'Value' and 'Description'.

Figure 26

### 5.1.1 Repeating Groups

Repeating groups are groups of tags that are repeated multiple times within the same message. The specification of messages containing repeating groups can easily be viewed with the Data Dictionary editor, e.g in FIX.4.2 the “Allocation” contains a number of repeating groups, including a nested repeating group (see Figure 27).

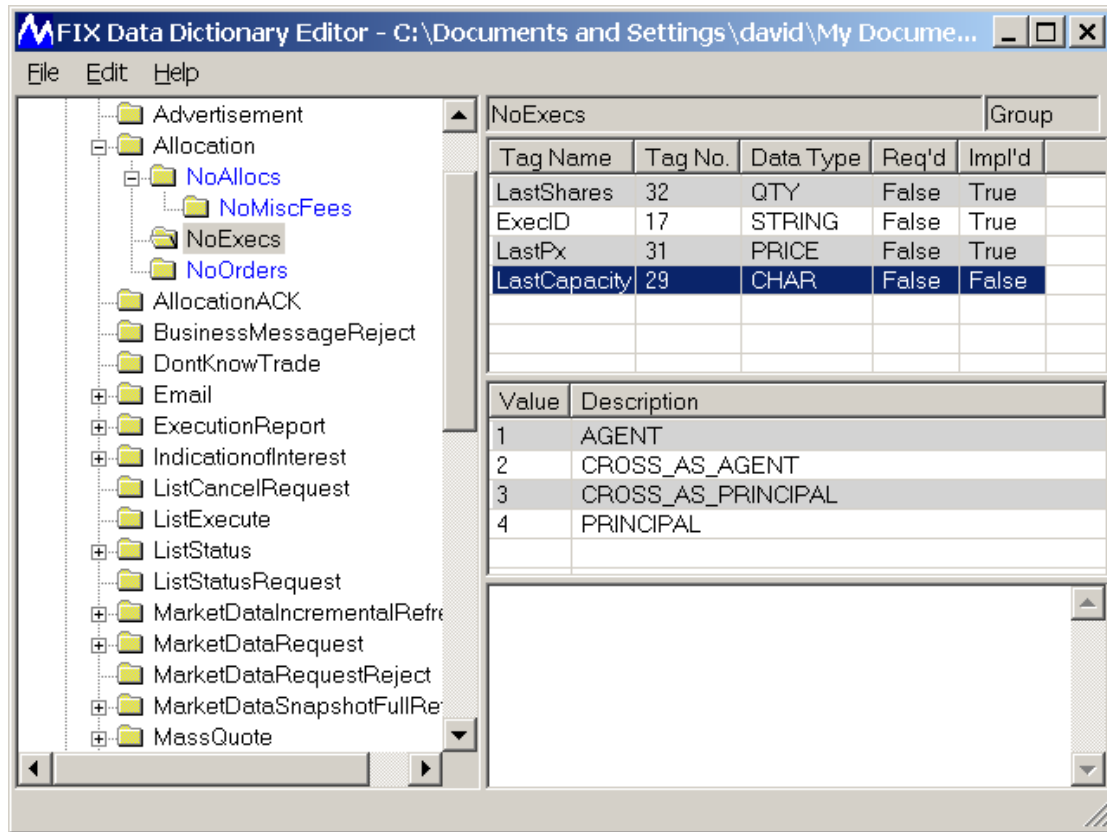


Figure 27

For a repeating group it is necessary to ensure that the first tag in each group is the delimiter tag. An example of a MarketDataRequest message is contained in Figure 28.

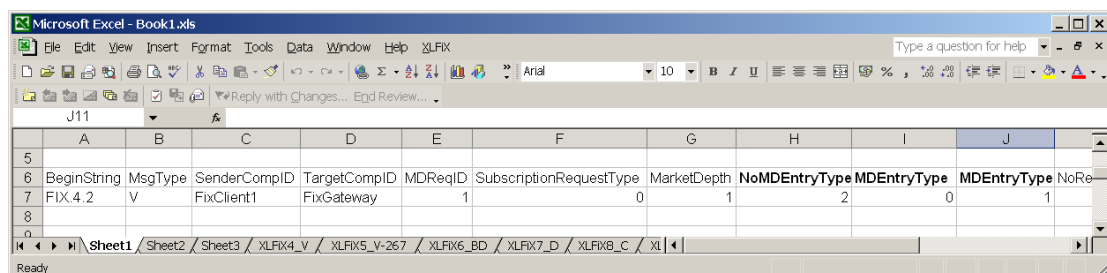


Figure 28

*Note: nested repeating groups are supported.*

## 5.2 Sending Messages

### 5.2.1 Sending a message ad-hoc

Select the range containing the message data, right-click the mouse, and select *Send FIX Message* from the context menu (see Figure 29). The message will be added to the appropriate XLFiX message sheet and sent to the counterparty.

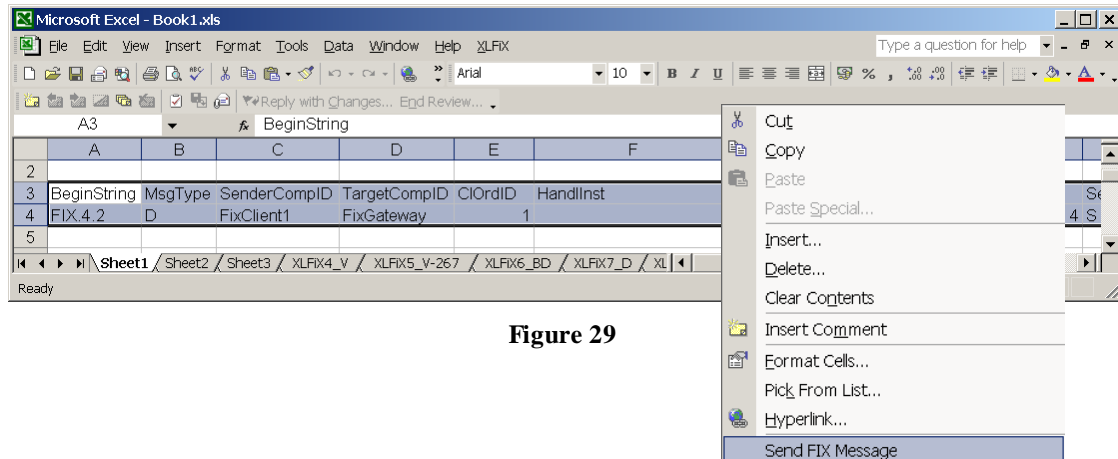


Figure 29

### 5.2.2 Sending a messages using VBA

XLFiX provides a *Send()* interface that can be implemented via VBA. The *Send()* function allows you to pass an Excel Range to XLFiX. The function returns a Boolean result.

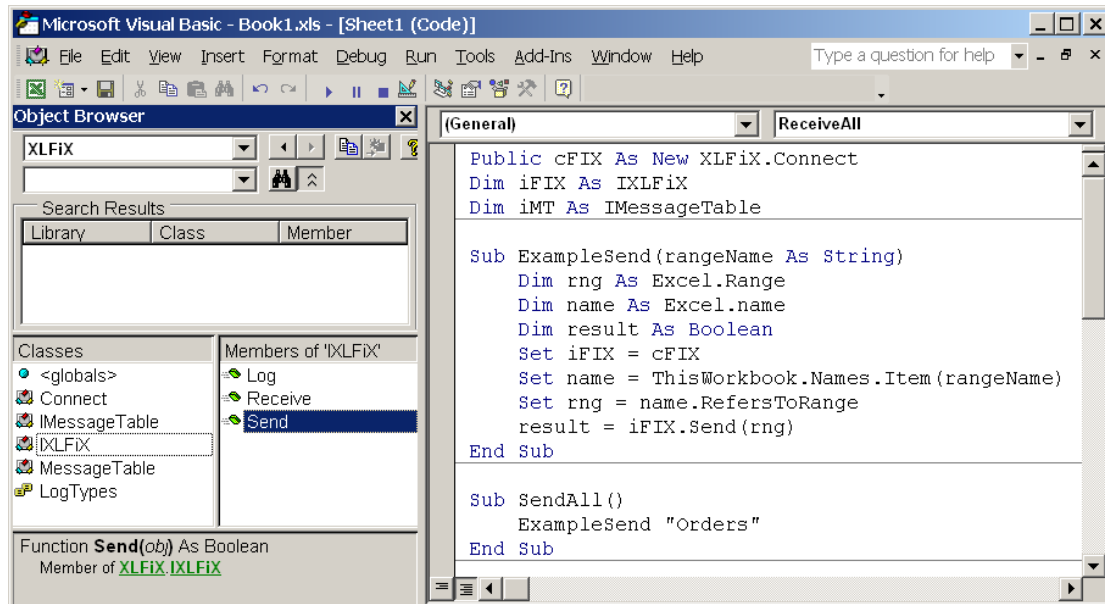


Figure 30

Alternatively you can pass an object array as an argument to the *Send()* function.

## 6 Connection Status

### 6.1 Handling Disconnections using VBA

If *AutoParsing* is not checked in the general properties, and you are therefore using VBA to handle message events, then you can also use the `OnDisconnect()` event (see Figure 31) to handle disconnections.

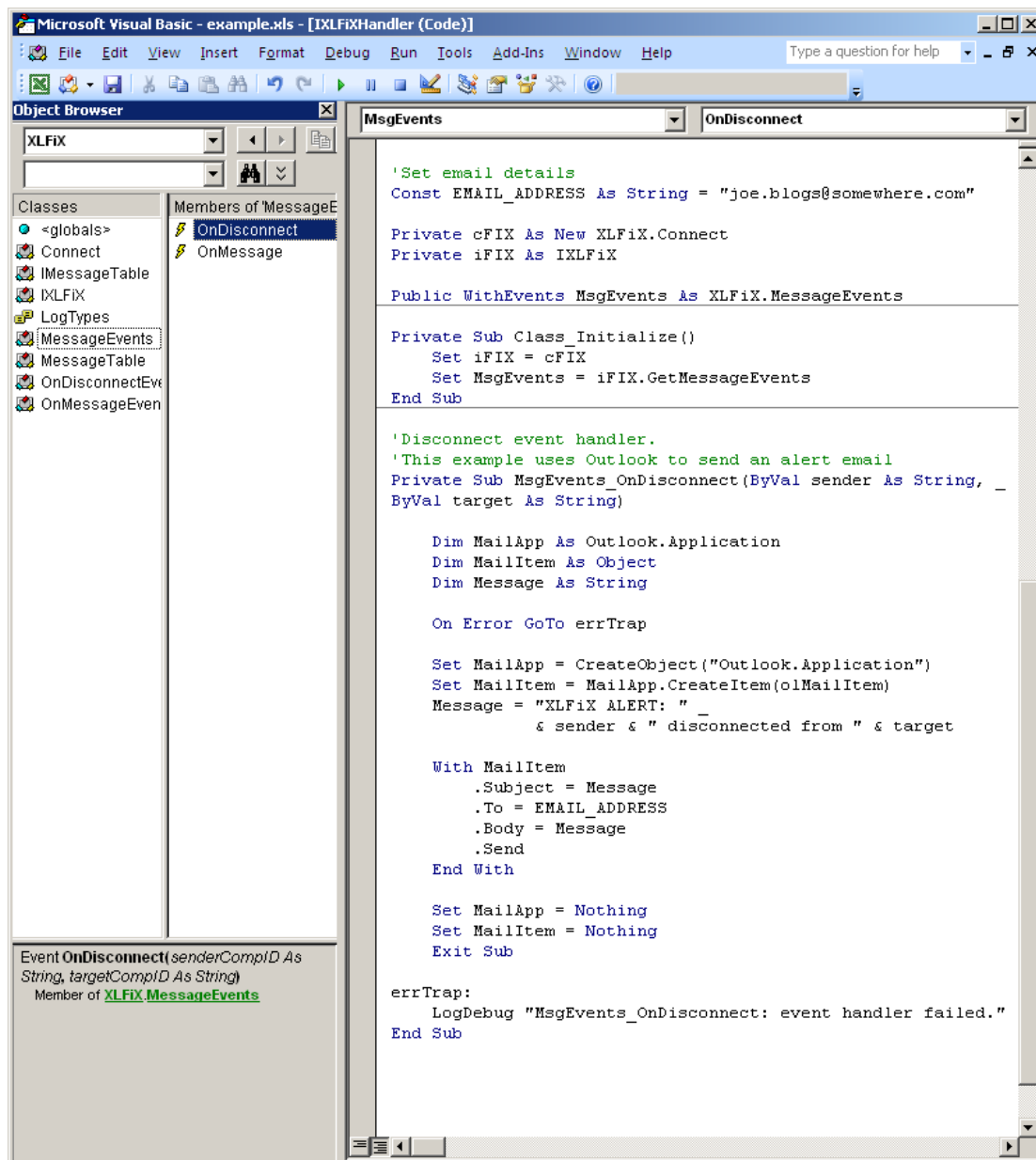


Figure 31

## 6.2 Session Manager

The *Sessions* status window (see Figure 32) provides an overview of the connection status for each session.

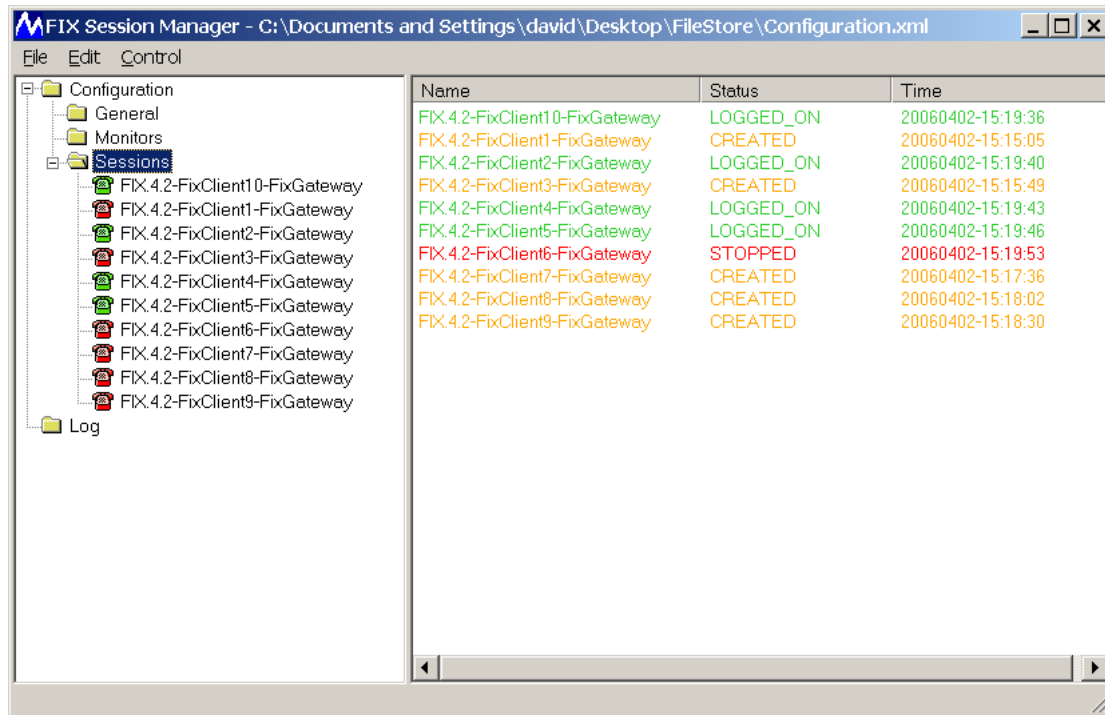


Figure 32