

FIX Order Entry Interface Module for MT4

Description of FIX 4.4 Interface

Document History

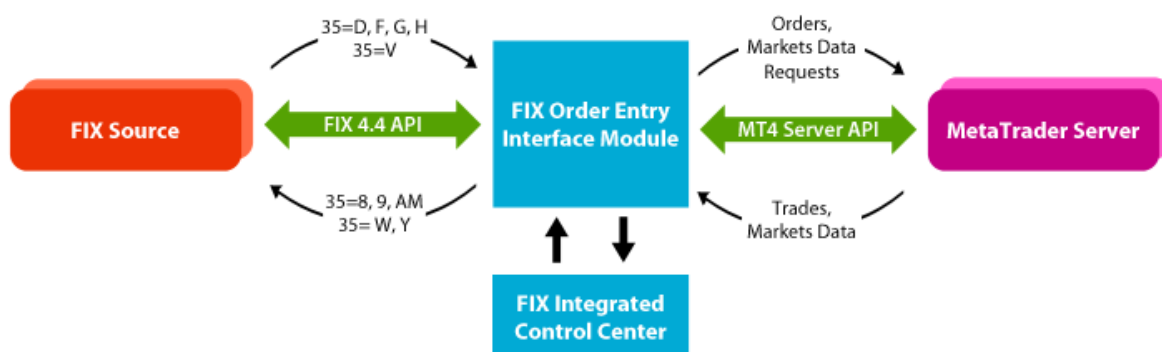
Version	Date	Description of change
1.0	2010-03-23	Initial version

Table of Contents

Table of Contents	3
1. Overview.....	4
2. FIX Component Blocks	5
2.1 Standard Message Header	5
2.2 Standard Message Trailer	6
3. FIX session - level messages	6
3.1 Logon.....	6
3.2 Logout.....	6
3.3 Session Level Reject	7
4. FIX application-level messages.....	8
4.1 New Order — Single.....	8
4.2 Order Cancel Request.....	9
4.3 Order Cancel/Replace Request.....	9
4.4 Market Data Request.....	10
4.5 Execution Report	11
4.6 Order Cancel Reject	12
4.7 Position Maintenance Report.....	13
4.8 Market Data Reject	13
4.9 Market Data Snapshot/Full Refresh.....	14
Contact Us.....	15

1. Overview

The FIX order entry interface module for MT4 enables processing of orders received via the FIX protocol based connection on the MetaTrader (MT4) platform (<http://www.metaquotes.net/>). It also allows subscribing and receiving market data published by MT4. Workflow supported by FIX order entry interface is presented on picture below.



Document describes FIX 4.4 interface supported by FIX Order Entry Interface.

List of supported messages:

1. Session level messages:

- All FIX session-level messages are supported.

2. Application level messages:

- Outgoing messages (from FIX Client to MT4 Server Plug-in)
 - New Order — Single (MsgType = 'D');
 - Order Cancel Request (MsgType = 'F');
 - Order Cancel/Replace Request (MsgType = 'G');
 - Market Data Request (MsgType = 'V');
- Incoming messages (from MT4 Server Plug-in to FIX Client):
 - Execution Report (MsgType = '8');
 - Order Cancel Reject (MsgType = '9');
 - Market Data Reject (MsgType = 'Y');
 - Market Data Snapshot/Full Refresh (MsgType = 'W');
 - Position Maintenance Report (MsgType = "AM")

FIX Order Entry Interface Module for MT4

Description of FIX 4.4 Interface

Other application-level messages are not supported. If unsupported message is received by MT4 Server Plug-in, Session Level Reject (MsgType = '3') message is sent in response.

2. FIX Component Blocks

2.1 Standard Message Header

Tag	Field name	Req'd	Comments
8	BeginString	Y	Identifies beginning of new message and protocol version. Always first field in message. Supported values: 'FIX.4.4'
9	BodyLength	Y	Message length, in bytes, forward to the CheckSum field. Always second field in message
35	MsgType	Y	Defines message type. Supported values: <ul style="list-style-type: none">'D' – New Order Single'F' – Order Cancel Request'G' – Order Cancel/Replace Request'V' – Market Data Request'8' - Execution Report'9' – Order Cancel Reject'AM' – Position Maintenance Report'Y' – Market Data Reject'W' – Market Data snapshot/Full Refresh
9	SenderCompID	Y	Assigned value used to identify firm sending message
56	TargetCompID	Y	Assigned value used to identify receiving firm
34	MsgSeqNum	Y	Integer message sequence number
50	SenderSubID	N	Assigned value used to identify specific message originator
57	TargetSubID	N	Assigned value used to identify specific individual or unit intended to receive message
43	PossDupFlag	N	Indicates possible retransmission of message with this sequence number. Supported values: 'Y', 'N'
97	PossResend	N	Indicates that message may contain information that has been sent under another sequence number. Supported values: 'Y', 'N'
52	SendingTime	Y	Time of message transmission (expressed in UTC). Format: YYYYMMDD-HH:MM:SS.sss
122	OrigSendingTime	N	Original time of message transmission when transmitting messages as the result of resend request (expressed in UTC). Format: YYYYMMDD-HH:MM:SS.sss

FIX Order Entry Interface Module for MT4

Description of FIX 4.4 Interface

2.2 Standard Message Trailer

Tag	Field name	Req'd	Comments
10	Checksum	Y	Three byte, simple checksum. Always last field in message

3. FIX session - level messages

3.1 Logon

The Logon (A) message authenticates a user establishing a connection. The Logon (A) message must be the first message sent by the application requesting to initiate a FIX session.

From FIX Client to MT4 Server Plug-in

Tag	Field name	Req'd	Comments
	< StandardMessageHeader >	Y	MsgType = 'A'
98	EncryptMethod	Y	Method of encryption. Supported value: '0' (None)
108	HeartBtInt	Y	Heartbeat interval (seconds)
553	Username	N	Username assigned by MT4
554	Password	N	Password.
	< StandardMessageTrailer >	Y	

From MT4 Server to FIX Client Plug-in. Successful Logon

Tag	Field name	Req'd	Comments
	< StandardMessageHeader >	Y	MsgType = 'A'
98	EncryptMethod	Y	Method of encryption. Supported value: '0' (None)
108	HeartBtInt	Y	Heartbeat interval (seconds)
	< StandardMessageTrailer >	Y	

3.2 Logout

The Logout (5) message is used to close established session or to notify about failed authentication.

From FIX Client to MT4 Server Plug-in

Tag	Field name	Req'd	Comments
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FIX Order Entry Interface Module for MT4

Description of FIX 4.4 Interface

	< StandardMessageHeader >	Y	MsgType = '5'
58	Text	N	Free format text.
	< StandardMessageTrailer >	Y	

From MT4 Server to FIX Client Plug-in. Successful Logout

Tag	Field name	Req'd	Comments
	< StandardMessageHeader >	Y	MsgType = '5'
58	Text	N	'Logged out'
	< StandardMessageTrailer >	Y	

From MT4 Server to FIX Client Plug-in. Failed Logon

Tag	Field name	Req'd	Comments
	< StandardMessageHeader >	Y	MsgType = '5'
58	Text	N	'User authentication failed'
	< StandardMessageTrailer >	Y	

3.3 Session Level Reject

Tag	Field name	Req'd	Comments
	< StandardMessageHeader >	Y	MsgType = '3'
45	RefSeqNum	N	MsgSeqNum of rejected message
372	RefMsgType	Y	MsgType of rejected message
373	SessionRejectReason	N	Code to identify reason for a session-level Reject (3) message. Valid values: '1' (Required field is missing), '6' (Incorrect data format for value)
58	Text	N	Reason of rejection.
	< StandardMessageTrailer >	Y	

4. FIX application-level messages

4.1 New Order — Single

Tag	Field name	Req'd	Comments
<StandardMessageHeader>			
		Y	MsgType = 'D'
1	Account	Y	Account mnemonic
11	ClOrdID	Y	Unique identifier for order as assigned by institution.
526	SecondaryClOrdID	N	Position ID assigned by MetaTrader. Note: Field is required to outline ID of position which should be closed. (Can be used only when MT4 Plug-In is configured to treat all new orders as different as different positions)
21	HandlInst	Y	Instructions for order handling on broker trading floor. Supported values: '1'
<OrderQtyData>			
38	OrderQty	Y	Number of lots
</OrderQtyData>			
40	OrdType	Y	Order type. Supported values: '1' (Market), '2' (Limit)
44	Price	C	Limit price. Required if OrdType (40) = '2'
54	Side	Y	Side of order. Supported values: '1' (Buy), '2' (Sell)
<Instrument>			
55	Symbol	Y	Currency pair
</Instrument>			
58	Text	N	Free format text string
59	TimeInForce	N	Specifies how long the order remains in effect. Supported values: '0' Absence of this field is interpreted as '0'
60	TransactTime	Y	Time of execution/order creation (expressed in UTC). Format: YYYYMMDD-HH:MM:SS.sss or YYYYMMDD-HH:MM:SS
<StandardMessageTrailer>			
		Y	

FIX Order Entry Interface Module for MT4

Description of FIX 4.4 Interface

4.2 Order Cancel Request

Tag	Field name	Req'd	Comments
<StandardMessageHeader>			MsgType = 'F'
1	Account	Y	Account mnemonic
11	ClOrdID	Y	Unique identifier for order as assigned by institution. Must be unique across all sessions/clients!
526	SecondaryClOrdID	N	Position ID assigned by MetaTrader. Note: Field is can be used only by Extended FIX Client
41	OrigClOrdID	Y	ClOrdID of the previous order as assigned by the institution, used to identify the previous order in cancel and cancel/replace requests
37	OrderID	N	Unique identifier for order as assigned by broker
<OrderQtyData>			
38	OrderQty	Y	Number of lots
</OrderQtyData>			
54	Side	Y	Side of order. Supported values: '1' (Buy), '2' (Sell)
<Instrument>			
55	Symbol	Y	Currency pair
</Instrument>			
60	TransactTime	C	Time of execution/order creation (expressed in UTC). Format: YYYYMMDD-HH:MM:SS.sss
<StandardMessageTrailer>			

4.3 Order Cancel/Replace Request

Tag	Field name	Req'd	Comments
<StandardMessageHeader>			MsgType = 'G'
1	Account	Y	Account mnemonic
11	ClOrdID	Y	Unique identifier for order as assigned by institution. Must be unique across all sessions/clients!
526	SecondaryClOrdID	N	Position ID assigned by MetaTrader. Note: Field is can be used only by Extended FIX Client
41	OrigClOrdID	Y	ClOrdID of the previous order as assigned by the institution, used to identify the previous order in cancel and cancel/replace requests
21	HandlInst	Y	Instructions for order handling on broker trading floor. Supported values: '1'
37	OrderID	N	Unique identifier for order as assigned by broker
<OrderQtyData>			

FIX Order Entry Interface Module for MT4

Description of FIX 4.4 Interface

38	OrderQty	Y	Number of lots
</OrderQtyData>			
40	OrdType	Y	Order type. As specified in original order Supported values: '1' (Market), '2' (Limit)
44	Price	C	Limit price. Required if OrdType (40) = '2'
54	Side	Y	Side of order. As specified in original order Supported values: '1' (Buy), '2' (Sell)
<Instrument>			
55	Symbol	Y	Currency pair
</Instrument>			
58	Text	N	Free format text string
59	TimInForce	N	
60	TransactTime	Y	Time of execution/order creation (expressed in UTC). Format: YYYYMMDD-HH:MM:SS.sss
<StandardMessageTrailer>			

4.4 Market Data Request

Tag	Field name	Req'd	Comments
<StandardMessageHeader>			
		Y	MsgType = 'V'
262	MdReqID	Y	Unique identifier of Market Data Request message
263	SubscriptionRequestType	Y	Subscription Request Type Supported values: '1' (Subscribe), '2' (Unsubscribe)
264	MarketDepth	Y	Depth of market for Book Snapshot Supported value: '1' (Top of the book)
265	MDUpdatetype	C	Specifies the type of Market Data update. Conditionally required if SubscriptionRequestType (263) = '1' Supported value: '0' (Full refresh)
267	NoMDEntryTypes	Y	Supported value: '2'
=>269	MDEntryType	Y	Type of market data entry. Supported values: '0' (Bid); '1' (Ask)
146	NoRelatedSym	Y	Number of currency pair which market data is requested for. Supported value: '1'
=>55	Symbol	Y	Currency pair
<StandardMessageTrailer>			

FIX Order Entry Interface Module for MT4

Description of FIX 4.4 Interface

4.5 Execution Report

Tag	Field name	Req'd	Comments
	<StandardMessageHeader>	Y	MsgType = '8'
1	Account	Y	Account mnemonic
37	OrderID	Y	Unique identifier for order as assigned by MT4 Plug-in
11	ClOrdID	Y	Unique identifier for order as assigned by institution Note: ClOrdID (11) should have following format for the case when Execution Report is sent as a result of unsolicited position closing on MT4 side: "ClosedByMT4_N_YYYYMMDD:HH:MM:SS.sss", where N – number of unsolicited position closing; YYYYMMDD:HH:MM:SS.sss – timestamp.
526	SecondaryClOrdID	N	Unique position ID. As assigned by MT4. Note: Field is can be used for Extended FIX Client only
41	OrigClOrdID	N	ClOrdID of the previous order as assigned by the institution, used to identify the previous order in cancel and cancel/replace requests
6	AvgPx	Y	Calculated average price of all fills on this order
14	CumQty	Y	Total number of shares filled
17	ExecID	Y	Unique identifier of execution message as assigned by MT4 Plug-in
19	ExecRefID	C	ExecID of the trade that was canceled. Required if ExecType (150) = 'H'
21	HandlInst	N	Instructions for order handling on broker trading floor. Supported values: '1'
31	LastPx	C	Price of this (last) fill. Required if ExecType (150) = 'F'
32	LastQty	C	Quantity of shares bought/sold on this (last) fill. Required if ExecType (150) = 'F'
38	OrderQty	Y	Number of lots Not required if ExecType (150) = 'I'
39	OrdStatus	Y	Current status of order. Supported values: '0', '1', '2', '4', '8', 'C'
40	OrdType	N	Order type. Supported values: '1', '2', '3', 'J'
44	Price	C	Limit price. Required if OrdType (40) = '2', 'J'
54	Side	Y	Side of order. Supported values: '1', '2'
55	Symbol	Y	Currency pair
58	Text	N	Free format text string
59	TimeInForce	N	Specifies how long the order remains in effect. Supported values: '0'

FIX Order Entry Interface Module for MT4

Description of FIX 4.4 Interface

			Absence of this field is interpreted as '0'
60	TransactTime	N	Time of execution/order creation (expressed in UTC). Format: YYYYMMDD-HH:MM:SS.sss
75	TradeDate	N	Used when reporting other than current day trades
77	OpenClose	N	Indicates whether the resulting position after a trade should be an opening position or closing position. Supported values: 'O', 'C'
103	OrdRejReason	C	Code to identify reason for order rejection. Supported values: '0', '4', '5', '6' Required if ExecType (150) = '8'
150	ExecType	Y	Identifies the type of execution report. Supported values: '0', '1', '4', '5', '6', 'F', 'H'
151	LeavesQty	Y	Amount of shares open for further execution
336	TradingSessionID	C	Is used to indicate that message is sent to DropCopy session. Valid value: 'DropCopy' Required for all messages sent to drop copy session(s).
625	TradingSessionSubID	C	Is used to indicate name of DropCopy session. Format: '<MainSessionTargetCompID, MainSessionSenderCompID >'. Required for all messages sent to drop copy session(s).
	<StandardMessageTrailer>	Y	

4.6 Order Cancel Reject

Tag	Field name	Req'd	Comments
	<StandardMessageHeader>	Y	MsgType = '9'
11	CIOrdID	Y	Unique identifier for order as assigned by institution
526	SecondaryCIOrdID	N	Unique position ID assigned by MT4. Note: Field is can be used for Extended FIX Client only
37	OrderID	C	Unique identifier for order as assigned by MT4 Plug-in.
39	OrdStatus	Y	Current status of order. Supported values: '0', '1', '2', '4', '8', 'C', 'E'.
41	OrigCIOrdID	Y	CIOrdID of the previous order as assigned by the institution, used to identify the previous order in cancel and cancel/replace requests
58	Text	N	Free format text string
102	CxlRejReason	N	Code to identify reason for cancel rejection. Supported values: '0', '1', '2', '3', '6'
434	CxlRejResponseTo	Y	Supported values: '1' (corresponds to Order Cancel Request (F)) '2' (corresponds to Order Cancel/Replace Request (G))
	<StandardMessageTrailer>	Y	

FIX Order Entry Interface Module for MT4

Description of FIX 4.4 Interface

4.7 Position Maintenance Report

Tag	Field name	Req'd	Comments
< StandardMessageHeader >		Y	MsgType = 'AM'
721	PosMaintRptID	Y	Unique identifier of report.
709	PosTransType	Y	Valid value: '3' (Position Adjustment)
712	PosMaintAction	Y	Valid value: '1' (New)
722	PosMaintStatus	N	Is required by FIX protocol, but is not supported by FIX Bridge.
715	ClearingBusinessDate	Y	Current business date. Format: YYYYMMDD
1	Account	Y	Account
581	AccountType	Y	Valid value: '1' (Customer)
55	Symbol	Y	Currency pair
702	NoPositions	Y	Supported value: '1'
=> 703	PosType	Y	Valid value: 'FIN' (End-of-Day Qty) Required if NoPositions (702) > 0
=>704	LongQty	N	Long quantity.
=>705	ShortQty	N	Short quantity.
753	NoPosAmt	N	Is required by FIX protocol, but is not supported by FIX Bridge.
=>707	PosAmtType	N	Is required by FIX protocol, but is not supported by FIX Bridge.
=> 708	PosAmt	N	Is required by FIX protocol, but is not supported by FIX Bridge.
< StandardMessageTrailer >		Y	

4.8 Market Data Reject

Tag	Field name	Req'd	Comments
< StandardMessageHeader >		Y	MsgType = 'Y'
262	MdReqID	Y	Unique identifier of Market Data Request message
281	MDReqRejReason	N	Reject reason. Supported values: '0' (Unknown symbol) '1' (Duplicate MDReqID (262)) '4' (Unsupported SubscriptionRequestType (263)) '5' (Unsupported MarketDepth (264)) '6' (Unsupported MDUpdateType (265)) '8' (Unsupported MDEntryType (269))
58	Text	N	Description of reject.
< StandardMessageTrailer >		Y	

FIX Order Entry Interface Module for MT4

Description of FIX 4.4 Interface

4.9 Market Data Snapshot/Full Refresh

Tag	Field name	Req'd	Comments
	< StandardMessageHeader >	Y	MsgType = 'W'
262	MdReqID	Y	Unique identifier of Market Data Request message
55	Symbol	Y	Currency pair
268	NoMDEntries	Y	Supported value: '2'
=> 269	MDEntryType	Y	Market Data entry type. Supported values: '0' (Bid), '1' (Offer)
=> 270	MDEntryPx	Y	Bid/Ask price
=> 271	MDEntrySize	Y	Bid/Ask size
	< StandardMessageTrailer >	Y	

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