

FX Liquidity System

FIX Message Specification

FX Platform Integration

Notice

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1. Introduction

TraderTools Aggregated Price Distribution FX trading system via Trader Tools Inc. FIX version 4.4.

1.1 About this guide

This document describes the message communications required for using the FX Liquidity FIX API.

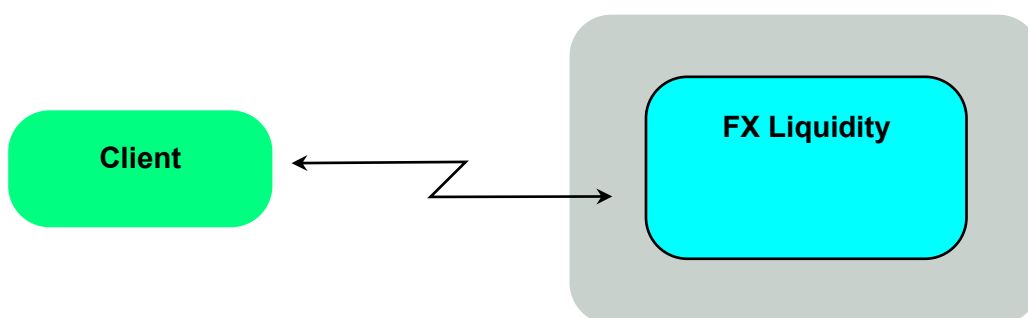
1.2 Intended audience

This document is directed at users of the service, and is primarily intended for developers who will adapt this feed to connect internal FX trading systems to the FX Liquidity system.

2. System overview

The FX Liquidity service allows clients to request prices and receive streaming prices from the FX Liquidity Engine, and to send FX orders to the FX Liquidity Engine.

The following diagram shows how a client connects via TCP to the FX Liquidity server:



2.1 Functional overview

2.1.1 Supported FIX version

FIX API supports FIX version 4.4.

2.1.2 End of Day (EOD) procedure

The FIX API is reset on a daily basis. The reset should occur at the following times:

- Time Zone: America/New York
- End Time: 17:00:00
- Start Time: 17:05:00

Both sessions will be reset to 1 at 17:05:00, the start of day. The client should also reset at this time.

2.1.3 Sequence numbers and gap fill policy

Gap fills

The Gap Fill functionality is available for both the streaming and trading sessions. However, we **do not** recommend sending gap fill requests from the client on the streaming session to avoid receiving stale prices.

Whenever the client detects a gap in the trading messages sequence, the client can request a Gap Fill to receive missing Execution Report (ER) messages on trading sessions.

Whenever FX Liquidity System detects a gap in the trading messages sequence, It will send a Resend Request to the client. The Client will then decide whether to send to FX Liquidity System a Sequence Reset message or perform a gap fill. In case the Client chooses to perform a gap fill, it will need to add Tag 43=Y in the gapped filled messages in order to indicate to FX Liquidity System to ignore these messages.

Sequence numbering

During a trading day the sequences will be maintained in-synch; however, if an intraday disconnect occurs, upon reconnecting, the streaming session will be reset and the order session will be retained.

2.1.4 Trading session status

If an application level failure occurs in the FX Liquidity System systems (for example in the Execution Service) that may have an effect on trading, the FX Liquidity System will notify the client by sending out a trading session status message (35=h) with the status 'closed' (tag 340=3). After the problem is resolved, the FX Liquidity System will send out the same message with the status 'open' (340=2).

These messages will be sent on both sessions: streaming and trading.

Upon receiving a trading session status 'closed,' the client should clear all existing rates and avoid sending out any trade requests (which would likely be rejected).

After receiving a trading session status 'open,' the client can renew all interactions with the FX Liquidity System server. There is no need to disconnect, connect, or renew subscriptions. Once the trading session is back up, it will continue to work as usual.

2.2 Business overview

2.2.1 Pricing

Interpreting the liquidity

The liquidity sent via the FX Liquidity System FIX API is formatted to be a **tiered** (also known as bucket or levels of) liquidity. This means that the liquidity in the book is not sweepable, and provides different prices for different levels.

The minimal amount that can be traded at each level is in fact the amount of the previous level.

For example, in the following book, the price for buying 3M will be 1.32465, and this price is relevant for any amount between 2M and 5M.

268=10|

269=0|270=1.32386|271=500000|299=TT-W-208978-B0|

```
269=1|270=1.32434|271=500000|299=TT-W-208978-A0|
269=0|270=1.32376|271=1000000|299=TT-W-208978-B1|
269=1|270=1.32444|271=1000000|299=TT-W-208978-A1|
269=0|270=1.32366|271=2000000|299=TT-W-208978-B2|
269=1|270=1.32455|271=2000000|299=TT-W-208978-A2|
269=0|270=1.32354|271=5000000|299=TT-W-208978-B3|
269=1|270=1.32465|271=5000000|299=TT-W-208978-A3|
269=0|270=1.3234|271=10000000|299=TT-W-208978-B4|
269=1|270=1.32478|271=10000000|299=TT-W-208978-A4|
```

Executable streaming prices

The FX Liquidity System FIX API does not publish indicative rates. All rates are streamed executable rates. In cases where FX Liquidity System detects that there might be a risk to the freshness or validity of the rate, FX Liquidity System will send out a rate cancellation.

A rate cancellation will be denoted by 0 amount in all tiers (tag 271 MDEntrySize in message 35=V). This means that there is no liquidity, and that prices should be cleared on the client's end.

If the rate is cancelled, the stream will resume automatically when available, and will not require a reregistration.

2.2.2 Trading

Trade capture

If a trader wishes to trade on the terms currency (meaning the amount currency of the trade, tag 15, is the terms currency), note that the side **always** refers to the **base currency**.

For example:

55=EUR/USD, 38=1000000, 54=1, 15=USD and let's say the conversion rate is 1.25, this would result in the following trade request in the FX Liquidity System:

Buy 800,000 EUR and Sell 1,000,000 USD

Please note that the **base amount** in terms currency trading case will be determined according to the **executed price**.

Order types

The FX Liquidity System FIX API supports the following order types:

- Market – Trade at the best price available on the market.
- Limit IOC – Trade at limit price when the price hits the market.

Partial fills

The FX Liquidity System FIX API provides online ERs as they are received from the counterparties. Because an order may have multiple executions, each execution will be reported as an ER. Each ER will also include the total amount executed for the order, and the executed average price, at the time of the fill.

- A partial fill will be reported as OrdStatus with the value of 'partial' (tag 39=1)
- A final fill will be reported as OrdStatus with the value of 'fill' (tag 39=2)

For example, if a limit IOC order is partially canceled as a result of insufficient liquidity, the following ERs will be provided:

1. One or more partial fill(s) will be reported (150=F) as OrdStatus with the value of 'partial' (tag 39=1). In each partial fill:
 - a. The OrderQty will report the original amount of the order
 - b. The LeavesQty will report the amount not yet executed
 - c. The LastQty will report the execution amount of the specific partial fill reported in this ER
 - d. The CumQty will report the total executed amount for this order
2. A cancel order will be reported (150=4) as OrdStatus with the value of 'cancel' (tag 39=4) for the remaining amount not executed:
 - a. The OrderQty will report the original amount of the order
 - b. The LeavesQty will be equal to 0
 - c. The LastQty will not be reported
 - d. The CumQty will report the total executed amount for this order

3. Supported messages

3.1 FIX 4.4

All message traffic uses standard FIX 4.4 messaging. Specific messages supported by the standard are outlined in the following tables.

3.2 Session messages

FIX Message	Message Type	FX Liquidity System Sends	Client Sends
Heartbeat	0	Y	Y
TestRequest	1	Y	Y
Resend Request	2	Y	Y
Reject	3	Y	
Sequence Reset	4	Y	Y
Logout	5	Y	Y
Logon	A	Y	Y
BusinessMessageReject	j	Y	
TradingSessionStatus	h	Y	

3.3 Application messages

3.3.1 Market data session

FIX Message	Message Type	FX Liquidity System Sends	Client Sends
MarketDataRequest	V		Y
MarketDataRequestReject	Y	Y	
MarketDataFullRefresh	W	Y	
QuoteRequest	R		Y
QuoteRequestReject	AG	Y	
Quote	S	Y	
QuoteCancel	Z	Y	Y

3.3.2 Trading session

FIX Message	Message Type	FX Liquidity System Sends	Client Sends
-------------	--------------	---------------------------	--------------

FX Liquidity System FIX Message Specification

FIX Message	Message Type	FX Liquidity System Sends	Client Sends
New Order Single	D		Y
Execution Report	8	Y	
Order Cancel Request	F		Y
Order Cancel/Replace Request	G		Y
Order Cancel Reject	9		

4. Message format

4.1 Header

The standard message header format is as follows:

Tag	Field Name	Required	Comments
8	BeginString	Y	String, FIX.4.4
9	BodyLength	Y	Integer
34	MsgSeqNum	Y	Integer
35	MsgType	Y	String
49	SenderCompID	Y	String, as configured
56	TargetCompID	Y	String, as configured
50	SenderSubID	N	String, as configured
43	PossDupFlag	N	Boolean. Set to 'Y' to indicate this message may have already been sent.
97	PossResend ¹	N	Boolean. Set to 'Y' to indicate this message may have already been sent under a different seqnum (tag 34).
52	SendingTime	Y	UTC Timestamp

4.2 Standard message trailer

Each message, administrative or application, is terminated by a standard trailer containing a three digit checksum. The standard message trailer format is as follows:

Tag	Field Name	Required	Comments
10	Checksum	Y	Integer. A zero filled three-digit integer

¹ If an execution report (35=8) is sent with 97=Y, the Client should verify whether or not the ExecID (tag 17) has already been received or not. The Client should ignore any execution report with 97=Y with an ExecID which has already been received.

5. Administrative messages

5.1 Logon

The logon message authenticates a user establishing a connection to a remote system. The logon message must be the first message sent by the application requesting to initiate a FIX session.

The HeartBtInt (108) field is used to declare the timeout interval for generating heartbeats (the same value is used by both sides):

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = A
98	EncryptMethod	Y	Integer. Always zero
108	HeartBtInt	Y	Integer in seconds. The initiator will set the interval for both directions.
141	ResetSeqNumFlag	N	Boolean. "Y" triggers both sides to reset sequence numbers.
96	RawData	N	String. FX Liquidity System requires the user's password in tag 96 or tag 554. Either is acceptable.
554	Password	N	String. FX Liquidity System requires the user's password in tag 96 or tag 554.
	<i>Standard Trailer</i>	Y	

5.2 Logout

The logout message initiates or confirms the termination of a FIX session:

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = 5
58	Text	N	String. Ignored.
	<i>Standard Trailer</i>	Y	

5.3 Heartbeat

The heartbeat message is sent by either side when the side in question has sent no other message for HeartBeatInt seconds. There is no required response to a heartbeat message:

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = 0 (zero).
112	TestReqID	N	String. Required when the heartbeat is the result of a Test Request message.
	<i>Standard Trailer</i>	Y	

5.4 Test request

The test request message elicits a heartbeat from the counter-party, which will now be required to send a heartbeat containing the TestReqID.

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = 1
112	TestReqID	Y	String. Will be reflected in the heartbeat response.
	<i>Standard Trailer</i>	Y	

5.5 Resend request

The resend request is sent by the receiving application to initiate the retransmission of messages:

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = 2
7	BeginSeqNo	Y	Integer.
16	EndSeqNo	Y	Integer. Zero indicates infinity.
	<i>Standard Trailer</i>	Y	

5.6 Reject

The reject message will be sent if an invalid message is received (session level reject):

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = 3
45	RefSeqNum	Y	Integer. MsgSeqNum of rejected message
371	RefTagID	N	Integer. The tag number of the FIX field being referenced.
372	RefMsgType	N	String. The MsgType of the FIX message being referenced.
373	SessionRejectReason	N	Integer. Code to identify the reason for a session-level reject message.
58	Text	N	String. Where possible, a message to explain the rejection reason.
	<i>Standard Trailer</i>	Y	

5.7 Sequence reset

A sequence reset can only increase the sequence number:

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = 4
123	GapFillFlag	N	Boolean.
36	NewSeqNo	Y	Int. Sequence number following the gap fill or next expected sequence number if not a gap fill.
	<i>Standard Trailer</i>	Y	

5.8 Business message reject

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = j
45	RefSeqNum	Y	MsgSeqNum of rejected message.
372	RefMsgType	Y	The MsgType of the FIX message being referenced.

Tag	Field Name	Required	Comments
380	BusinessReject Reason	Y	
58	Text	N	Where possible, a message to explain the rejection reason.
	<i>Standard Trailer</i>	Y	

5.1 Trading session status

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = h
336	TradingSessionID	Y	Identifier for the trading session.
340	TradSesStatus	Y	State of the trading session: 2 – open, 3 – closed.
325	UnsolicitedIndicator	Y	Always Y. This message will be sent to report on an application level status, and will always be initiated by FX Liquidity System.
58	Text	N	Where possible, a message to explain the rejection reason.
	<i>Standard Trailer</i>	Y	

6. Price Streaming

6.1 Market Data session

The Market Data session is used for requesting streaming prices **for Spot** (for FWD and Swap support please refer to the Quote session in section 6.2).

Market data messages provide the ability to request market data and receive market data in a bi-directional conversation. The messages defined below define the contents of the messages required to elicit market data and the format of the replies.

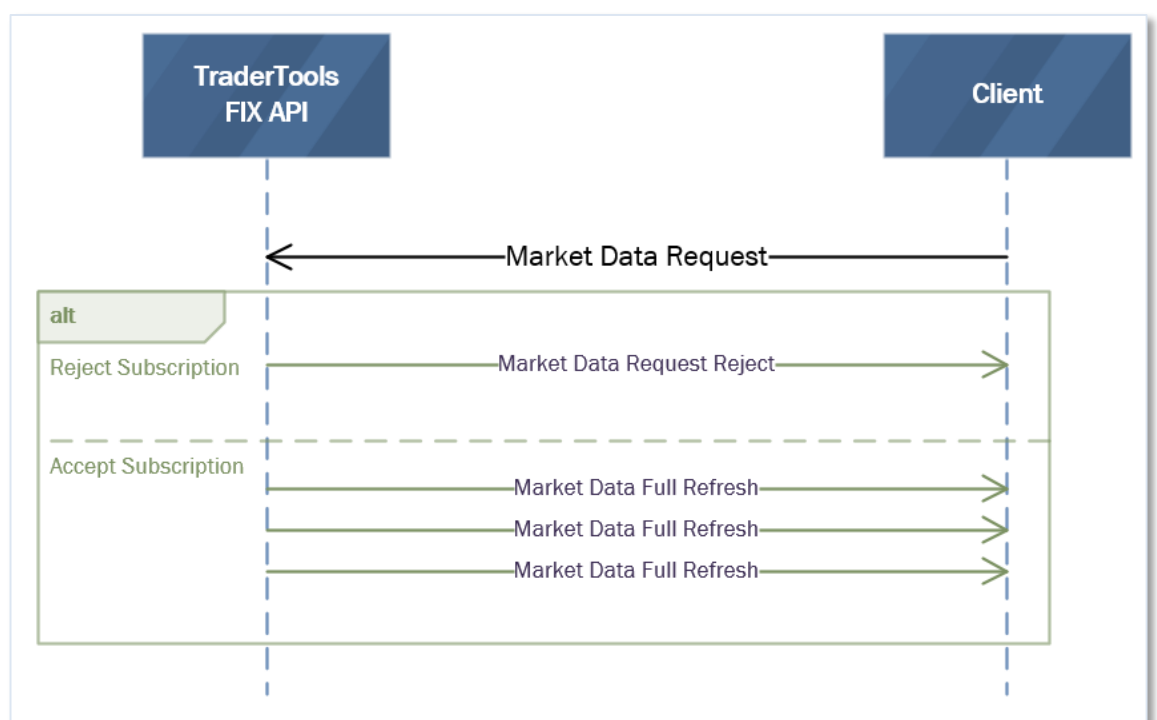


Figure 1: Market Data session sequence diagram

6.1.1 Market Data Request

The Market Data Request returns one or more Market Data messages containing one or more Market Data entries. This will be sent by the client to start streaming market data.

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = V
262	MDReqID	Y	Must be unique. (Use previous value if disabling a request.)
453	NoPartyIDs	N	Omitted or 1
448	PartyID	N	This is the trader name or ID Mandatory if 453=1
447	PartyIDSource	N	Always D = proprietary/custom code Mandatory if 453=1
452	PartyRole	N	Always 11 = Order Origination Trader Mandatory if 453=1
263	Subscription Request Type	Y	1 = snapshot (Subscribe) 2 = Disable previous (un-Subscribe)
264	MarketDepth	Y	0 = Full book
265	MDUpdateType	N	Integer. Required for 263=1. 0 = Full refresh
267	NoMDEntryTypes	Y	Integer. Number of MDEntryType fields requested. TraderTools FIX API ignores this entry and will always consider = 2.
→	269 MDEntryType	Y	String. 0 = Bid, 1 = Offer. TraderTools FIX API ignores this entry and will always consider that the client requests for both bid and offer.
146	NoRelatedSym	Y	Always 1
→	55 Symbol	Y	String. Must be the first field in the repeating group. The symbol is the only required and significant field in the repeating group. The symbol is unique and specific to the instrument. Displayed in CCY1/CCY2 format.
	<i>Standard Trailer</i>	Y	

Example:

```
8=FIX.4.4|9=146|35=V|34=5|49=CUST-MD|52=20130801-00:05:11.699|
56=LMP-MD|262=ef5937f784fc4604bb7f3b71e0c3b116|263=1|264=0|265=0|
267=2|269=0|269=1|146=1|55=EUR/USD|10=083|
```

6.1.2 Market data request reject

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = Y
58	Text	Y	Reject Reason
262	MDReqID	Y	Must refer to the MDReqID of the request
	<i>Standard Trailer</i>	Y	

6.1.3 Market Data – Full Refresh

In FIX standard Specification, Market Data messages can take two forms:

- Market Data Full Refresh (message type W - MDFull)
- Market Data Incremental Refresh (message type X - MDIncremental)

All market data from TraderTools will take the form of a **Full Refresh**.

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = W
262	MDReqID	Y	As provided in the request
55	Symbol	Y	In CCY1/CCY2 format
268	MDEntries	Y	Integer. Number of entries following.
→	269 MDEntryType	Y	0 = bid, 1 = offer
→	299 QuoteEntryID	Y	instead of 278
→	270 MDEntryPx	Y	Price
→	271 MDEntrySize	Y	Maximum amount that can be traded at this price. 0 in all tiers will indicate that there is no liquidity, and that prices should be cleared on the client's end. In case of rate cancelation, the stream will resume automatically when available and there is no need to re-register.
→	272 MDEntryDate	Y	The value date of the price
	<i>Standard Trailer</i>	Y	

Example – Full Book Update with liquidity:

```
8=FIX.4.4|9=614|35=W|34=61565|49=LMP-MD|52=20130801-07:51:40.977|
56=CUST-MD|55=EUR/USD|262=0bf598183e29426088a5466f7570a84c|268=10|
269=0|270=1.32386|271=500000|272=20130805|299=FIX-W-208978-B0|
269=1|270=1.32434|271=500000|272=20130805|299=FIX-W-208978-A0|
269=0|270=1.32376|271=1000000|272=20130805|299=FIX-W-208978-B1|
```

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```
269=1|270=1.32444|271=1000000|272=20130805|299=FIX-W-208978-A1|
269=0|270=1.32366|271=2000000|272=20130805|299=FIX-W-208978-B2|
269=1|270=1.32455|271=2000000|272=20130805|299=FIX-W-208978-A2|
269=0|270=1.32354|271=5000000|272=20130805|299=FIX-W-208978-B3|
269=1|270=1.32465|271=5000000|272=20130805|299=FIX-W-208978-A3|
269=0|270=1.3234|271=10000000|272=20130805|299=FIX-W-208978-B4|
269=1|270=1.32478|271=10000000|272=20130805|299=FIX-W-208978-A4|10=123|
```

Example – Rate Cancellation:

This message will be sent if there is no liquidity currently for the given currency pair. The book will have 0 amount for both bid and offer.

```
8=FIX.4.4|9=190|35=W|34=69425|49=LMP-MD|52=20130801-08:31:21.401|
56=ALFA-MD|55=EUR/JPY|262=ef5937f784fc4604bb7f3b71e0c3b116|268=2|
269=0|270=0|271=0|272=20130805|299=FIX-W-216838-B0|
269=1|270=0|271=0|272=20130805|299=FIX-W-216838-A0|10=156|
```

6.2 RFSQ – streaming quotes session

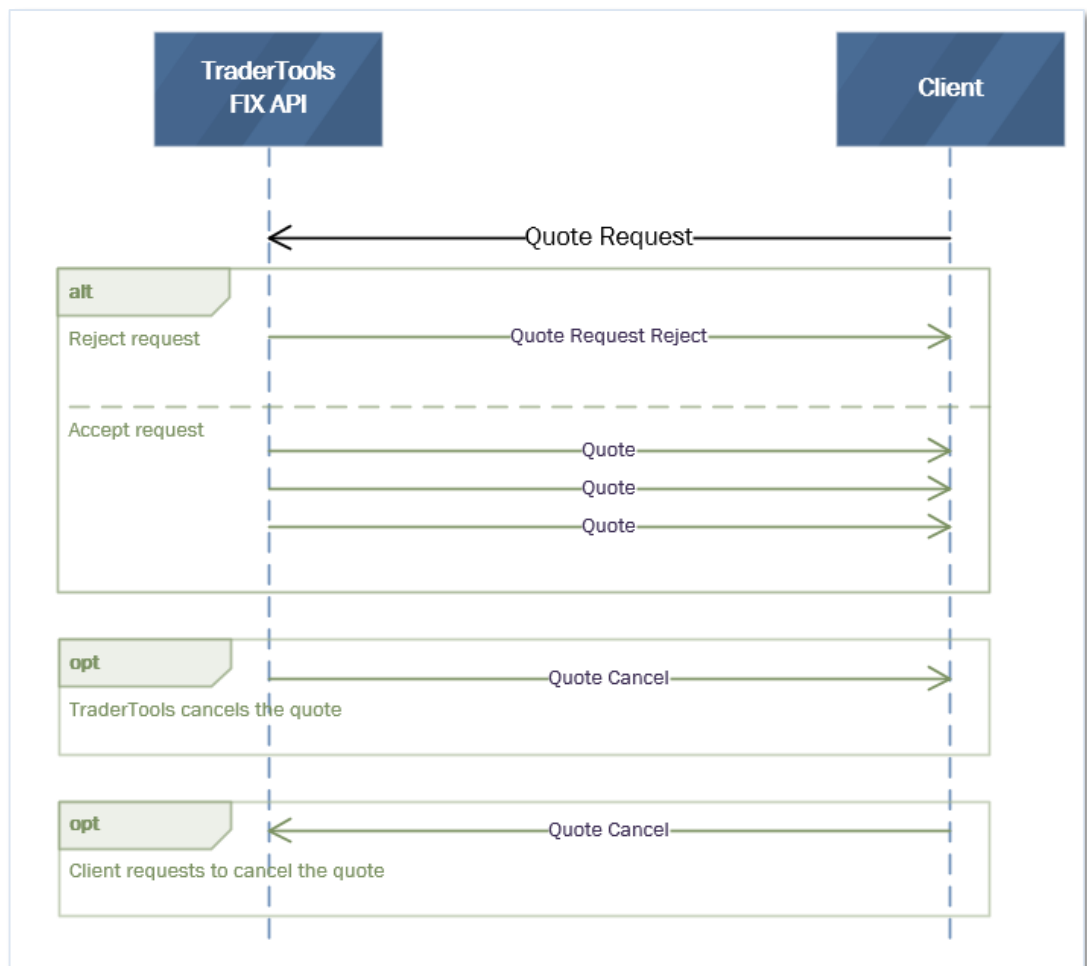


Figure 2: Quotes session sequence diagram

6.2.1 Quote Request

The Quote Request is sent by the Client to request a Quote for a **Forward** or a **Swap**. If accepted, this request will return one or more (a stream) quote messages each containing one Market Data entry.

FX Liquidity System FIX Message Specification

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = R
131	QuoteReqID	Y	Must be unique.
1	Account	Y	This is the account that the trade will be booked against, according to the account/s provided by TraderTools.
146	NoRelatedSym	Y	Always 1
→	55 Symbol	Y	String. Must be the first field in the repeating group. The symbol is the only required and significant field in the repeating group. The symbol is unique and specific to the instrument. Displayed in CCY1/CCY2 format.
→	54 Side	Y	Integer. Indicates the requested side (side of the far leg for Swaps): 0 = 2-Way 1 = Buy 2 = Sell
→	38 OrderQty	Y	Order quantity of the Forward or Near Leg Swap
→	40 OrdType	Y	D=Previously Quoted
→	192 OrderQty2	N	Order quantity of Far Leg Swap If empty, assume OrderQty2=OrderQty
→	63 FutSettType	N	Tenor of the Forward or Near Leg Swap, use this to designate that a Fixed Tenor is used in the subscription. The following are available Tenor codes: ON = Overnight, Next (Swaps only) TN = Tomorrow, Next (Swaps only) SN = Spot, Next (Forwards and Swaps) 1W = 1 Week 2W = 2 Weeks 3W = 3 Weeks 1M = 1 Month 2M = 2 Months 3M = 3 Months 4M = 4 Months 5M = 5 Months 6M = 6 Months 7M = 7 Months 8M = 8 Months 9M = 9 Months 10M = 10 Months 11M = 11 Months

Tag	Field Name	Required	Comments
			1Y = 1 Year
→	64 FutSettDate	N	Date (YYYYMMDD) for settlement of the Forward or Near Leg Swap, should be used to indicate Broken Date.
→	6216 FutSettType2	N	Tenor of Far Leg Swap
→	193 FutSettDate2	N	Date (YYYYMMDD) for settlement of the Forward or Near Leg Swap
7071	Product Type	Y	String. The type of product. Always "FX-STD"
	<i>Standard Trailer</i>	Y	

A Quote Request is identified as a Forward when tag 63 or 64 is used.

A Quote Request is identified as a Swap when tag 6216 or 193 is used.

In order to request a **Fixed Tenor**, you would need to specify in tag 63 the given Tenor.

Example of Fixed Tenor Quote Request:

```
< 8=FIX.4.4|9=127|35=R|49=TEST-MD|56=TT-MD|34=53|52=20151223-
12:05:52|131=1|1=TEST|146=1|55=EUR/USD|54=1|38=1000000|40=D|63=1M|7071=FX
-STD|10=122|
```

In order to request a **Broken Date**, you would need to specify in tag 64 the given Value Date.

Example of Broken Date Quote Request:

```
8=FIX.4.4|9=146|35=R|34=5|49=CUST-MD|52=20130801-00:05:11.699|
56=LMP-MD|131=ef5937f784fc4604bb7f3b71e0c3b118|146=1|55=EUR/USD|
|54=0|38=1000000|63=SN|192=1500000|193=20131223|10=083|
```

6.2.2 Quote Request Reject

The Quote Request Reject is sent to the taker indicating that Quote Request was rejected.

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = AG
131	QuoteReqID	Y	Must be unique.

Tag	Field Name	Required	Comments
658	QuoteRequestRejectReason	Y	1 = Unknown symbol (Security) 2 = Exchange (Security) closed 3 = Quote Request exceeds limit 4 = Too late to enter 5 = Invalid price 6 = Not authorized to request quote 7 = No match for inquiry 8 = No market for instrument 9 = No inventory 10 = Pass 99 = Other
146	NoRelatedSym	Y	Always 1
→	55 Symbol	Y	String. Must be the first field in the repeating group. The symbol is the only required and significant field in the repeating group. The symbol is unique and specific to the instrument. Displayed in CCY1/CCY2 format.
→	7071 Product Type	Y	String. The type of product. Always "FX-STD"
58	Text	Y	Reason why the request was rejected as text.
	<i>Standard Trailer</i>	Y	

6.2.3 Quote

The Quote message contains the Market Data entry requested from a Quote Request.

Please note!

On trade date change any registration to short dates (before spot), might be cancelled and the user will have to re-register to prices

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = S
1	Account	Y	This is the account that the trade will be booked against, according to the account/s provided by TraderTools.
117	QuoteID	Y	Unique identifier of the quote
131	QuoteReqID	Y	Must be unique.

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Tag	Field Name	Required	Comments
55	Symbol	Y	String. The symbol is unique and specific to the instrument. Displayed in CCY1/CCY2 format.
7071	Product Type	Y	String. The type of product. Always "FX-STD"
188	BidSpotRate	N	Spot rate corresponding to the all-in bid price
190	OfferSpotRate	N	Spot rate corresponding to the all-in offer price
132	BidPx	N	All-in bid price for Forwards or Near leg of a Swap (in case of buy swap)
133	OfferPx	N	All-in offer price for Forwards or Near leg of a Swap (in case of sell swap)
189	BidForwardPoints	N	Points corresponding to the all-in bid price for Forwards or Near leg of a Swap
191	OfferForwardPoints	N	Points corresponding to the all-in offer price for Forwards or Near leg of a Swap
6050	BidPx2	N	All-in Far leg of Swap (in case of sell swap)
6051	OfferPx2	N	All-in Far leg of Swap (in case of buy swap)
642	BidForwardPoints2	N	Points corresponding to the all-in bid price 2 for Far leg of Swap
643	OfferForwardPoints2	N	Points corresponding to the all-in offer price 2 for Far leg of Swap
1065	BidSwapPoints	N	The bid FX Swap points for an FX Swap trade based on both legs of the swap. Can be positive or negative
1066	OfferSwapPoints	N	The offer FX Swap points for an FX Swap based on both legs of the swap. Can be positive or negative
15	Currency	Y	String. Currency that the OrderQty refers to.
38	OrderQty	Y	Order quantity of the Forward or Near Leg Swap
192	OrderQty2	N	Order quantity of Far Leg Swap If empty, assume OrderQty2=OrderQty
63	FutSettType	N	Tenor of the Forward or Near Leg Swap
64	FutSettDate	N	Date (YYYYMMDD) for settlement of the Forward or Near Leg Swap
6216	FutSettType2	N	Tenor of Far Leg Swap
193	FutSettDate2	N	Date (YYYYMMDD) for settlement of the Forward or Near Leg Swap
	<i>Standard Trailer</i>	Y	

Example:

```
> 8=FIX.4.4|9=221|35=S|34=47|49=LMP-MD|52=20151223-12:05:48.415|56=TEST-  
MD|1=TEST|15=EUR|38=1000000|55=EUR/USD|63=1M|64=20160129|117=5278f8aef1  
089-4c4edce802-1M-5278f8af0e95b-  
1M|131=1|133=1.094318|190=1.09312|191=0.001198|7071=FX-STD|10=231|
```

6.2.4 Quote Cancel

The Quote Cancel message is sent by either party of the FIX connection to cancel a specific quote request.

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = Z
131	QuoteReqID	Y	Identifier of the quote request to cancel
117	QuoteID	Y	0 = Currently published quote
298	QuoteCancelType	Y	4 = Cancel all the quotes for the relevant currency pair
7071	Product Type	Y	String. The type of product. Always "FX-STD"
	<i>Standard Trailer</i>	Y	

Example:

```
8=FIX.4.4|9=87|35=Z|49=TEST-MD|56=LMP-MD|34=67|52=20151223-  
12:12:14|131=1|117=0|298=4|7071=FX-STD|10=248|
```

7. Trading messages

Clients will send New Order messages to TraderTools and expect to receive Execution Report (ER) messages from TraderTools to indicate fills or rejects on the orders.

7.1.1 Trading at the market

When trading at the market – IOC (Immediate or Cancel) or FOK (Fill or Kill) orders, the client should expect an immediate fill/partial fill or a cancellation (cancellation in case the market had moved).

In any case the client should receive an immediate response to the trade request.

Trading at the market is available for Limit and Market order types.

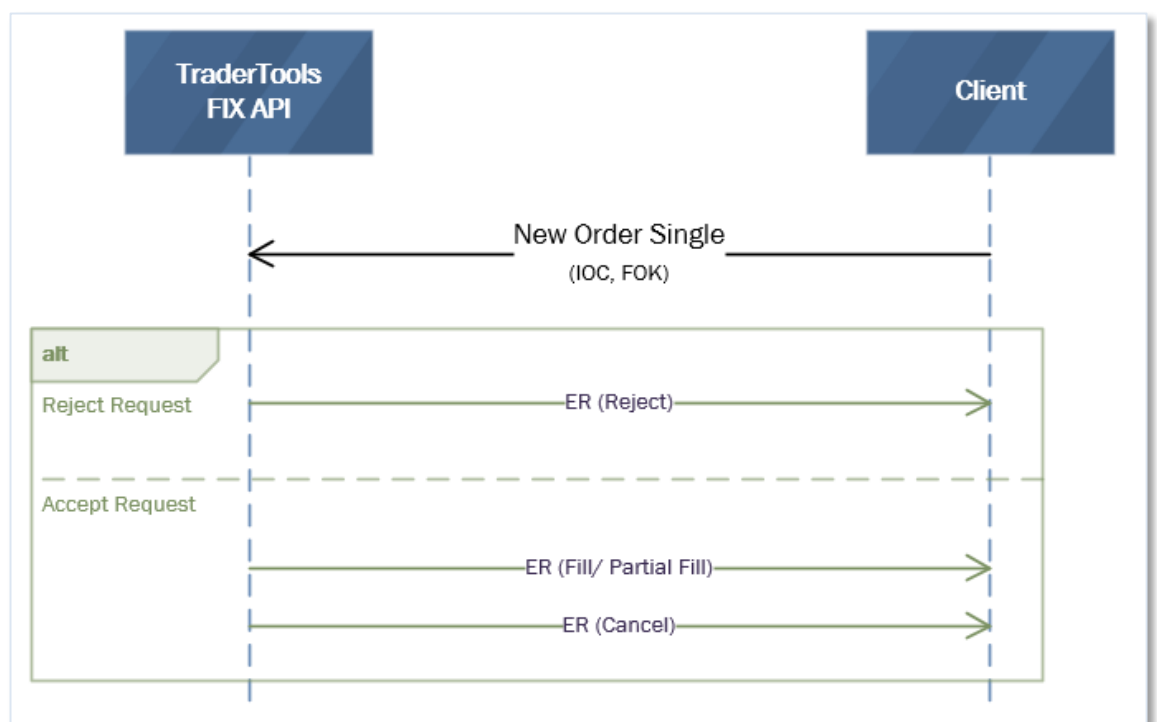


Figure 3: Dealing (IOC, FOK) – Trading Sequence

7.2 New Order Single

The new order single message is sent from the client to TraderTools:

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = D
1	Account	Y	This is the account that the trade will be booked against, according to the account/s provided by TraderTools.
11	ClOrdID	Y	Unique identifier for the trade (40 chars max)
453	NoPartyIDs	N	Omitted or 1
448	PartyID	N	This is the trader name or ID Mandatory if 453=1
447	PartyIDSource	N	Always D = proprietary/custom code Mandatory if 453=1
452	PartyRole	N	Always 11 = Order Origination Trader Mandatory if 453=1
21	HandlInst	N	Always 1=Auto.
55	Symbol	Y	In CCY1/CCY2 format
117	QuoteID	Y	This field should be populated with the value that was received in tag 299 (QuoteEntryID) within the market data message, 35=W. Or QuoteID – tag 117 – of the quote message, 35= S, in case a quote message session is implemented.
38	OrderQty	Y	Order quantity (for Spot, Forward or Near Leg Swap). Order quantity cannot be stated in decimal, but rather full currency units
110	MinQty	N	Optional values: <ul style="list-style-type: none"> 0 in this case the field can be omitted Equals to order quantity, and this would mean that the order can only be fully filled ('All-or-None') please note: this field is only needed for resting orders. For orders placed at the market the client may use 59=4 (FOK).
192	OrderQty2	N	Order quantity of Far Leg Swap If empty, assume OrderQty2=OrderQty
54	Side	Y	1=Buy, 2=Sell. Note that the side always refers to the base currency. See to section Trading on page 2-8 for details.

Tag	Field Name	Required	Comments
			For Swap, the side always references the Far Leg side.
40	OrdType	Y	1 = Market 2 = Limit
44	Price	N	This is the target price of the Spot order. For forward, this is the all-in price. For Swap, this is the Near leg all-in price. Required for OrdType=2 only. Ignored if OrdType=1.
640	Price2	N	Far leg all-in price of a swap Required for OrdType=2 only for Swap. Ignored if OrdType=1.
662	BenchmarkPrice	N	<p>In case of implementing a Quote message (35= S): the value in this field should correspond to the all-in quote price (tag 132 or 133 according to the side)</p> <p>in case of implementing a Market Data Snapshot message (35= W): the value in this field should correspond to the MDEntryPx (tag 270)</p> <p>This field is not mandatory at this stage. However, it is highly recommended to provide it in order to see what the target market was and provide the best response to trading requests.</p> <p>This field should be always populated regardless of the Order Type (Limit, Market or Stop)</p>
10662	BenchmarkPrice2	N	<p>The value in this field should correspond to the all-in quote price (tag 6050 or 6051 according to the side) within the corresponding quote message (35= S)</p> <p>This field is not mandatory at this stage. However, it is highly recommended to provide it in order to see what the target market was and provide the best response to trading requests.</p> <p>This field should be always populated regardless of the Order Type (Limit, Market or Stop)</p>
194	LastSpotRate	N	Last Spot rate. This field is not mandatory at this stage. However, it is highly recommended to provide it in order to see what

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Tag	Field Name	Required	Comments
			the target market was and provide the best response to trading requests. This field should be always populated regardless of the Order Type (Limit or Market)
195	LastForwardsPts	N	Last Forward Points of a Forward or a Near Leg Swap. This field is not mandatory at this stage. However, it is highly recommended to provide it in order to see what the target market was and provide the best response to trading requests. This field should be always populated regardless of the Order Type (Limit or Market)
641	LastForwardsPts2	N	Forward Points of a Far Leg Swap. This field is not mandatory at this stage. However, it is highly recommended to provide to see what the target market was and provide the best response to trading requests. This field should be always populated regardless of the Order Type (Limit or Market)
15	Currency	Y	Amount currency of the trade. Can be either CCY1 or CCY2.
63	FutSettType	N	Tenor of the Forward or Near Leg Swap
64	FutSettDate	N	Date (YYYYMMDD) for settlement of the Forward or Near Leg Swap
6216	FutSettType2	N	Tenor of Far Leg Swap
193	FutSettDate2	N	Date (YYYYMMDD) for settlement of Far Leg Swap
59	TimeInForce	N	1 = Good Till Cancel (GTC) 3 = Immediate or Cancel (IOC) 4 = Fill or Kill (FOK) 6 = Good Till Date (GTD) Ignored if OrdType=1 (Market orders will execute until completion). If omitted, the default value (59=3) will be applied
126	ExpireTime	C	Conditionally required if TimeInForce = GTD. Required format is YYYYMMDD-HH:MM:SS
60	TransactTime	Y	In UTC.
	<i>Standard Trailer</i>	Y	

A New Order Request is identified as a Forward when tag 63 or 64 is used.

A New Order Request is identified as a Swap when tag 6216 or 193 is used.

Example of Spot:

```
8=FIX.4.4|9=165|35=D|34=1440|49=CUST-ORD|52=20130731-12:20:42.852|
56=LMP-ORD|1=FIXTEST|11=3jxxVznckeadm2wXbdEQ00|15=EUR|21=1|
38=1000000|40=1|54=2|55=EUR/USD|117=NED-W-208978-A1|662=1.32444|
60=20130731-12:20:41.719|10=084|
```

Example of a Forward:

```
8=FIX.4.4|9=165|35=D|34=1440|49=CUST-ORD|52=20130731-12:20:42.852|
56=LMP-ORD|1=FIXTEST|11=3jxxVznckeadm2wXbdEQ00|15=EUR|21=1|
38=1000000|40=2|44=1.0932633|54=2|55=EUR/USD|117=FIX-W-208978-
A1|194=1.32000|195=0.0011833|662=1.32444|60=20130731-
12:20:41.719|59=4|10=084|
```

7.3 Execution Report (ER)

The Execution Report (ER) will be sent from TraderTools:

Tag	Field Name	Required	Comments
	<i>Standard Header</i>	Y	MsgType = 8
37	OrderID	N	TraderTools unique identifier for the order. In case of rejection (ExecType=8), the value of this field will be 0.
11	ClOrdID	Y	as specified by the client in tag 11 within the relevant request: <ul style="list-style-type: none"> New order message Order Cancel/Replace request Order cancel request
17	ExecID	Y	In case of a fill or a partial fill (ExecType=F), this field will hold a unique execution ID. In any other case (ExecType = 0, 4, 5, 8, C) this field will hold the same value as tag 37 (OrderID)
527	SecondaryExecID	N	The execution ID of the LP against whom the trade was executed. This will not be provided in case of rejection (ExecType=8) and ExecType=4 (cancellation).
453	NoPartyIDs	N	Omitted or 1
448	PartyID	N	This is the trader name or ID Mandatory if 453=1
447	PartyIDSource	N	Always D = proprietary/custom code

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Tag	Field Name	Required	Comments
			Mandatory if 453=1
452	PartyRole	N	Always 11 = Order Origination Trader Mandatory if 453=1
1	Account	Y	The account that was identified in the 'New Order' message.
453	NoPartyIDs	N	Always 1.
448	PartyID	N	The trader who initiated the request (the logged-in user).
452	PartyRole	N	Always 11 (PartyRole = InitiatingTrader).
382	NoContraBrokers	N	Always 1.
375	ContraBroker	N	The LP against whom the trade was done. This field will hold the settling account of the LP as preconfigured by the API client. Relevant for fill or a partial fill (ExecType=F)
150	ExecType	Y	0 = New 4 = Canceled 5 = Replaced 8 = Rejected C = Expired F = Trade (fill or partial fill)
39	OrdStatus	Y	0 = New 1 = Partial fill 2 = Fill (final fill, the order is completed) 4 = Canceled (in case of IOC, or in case a GTC order was canceled by the user) 8 = Rejected C = Expired
55	Symbol	Y	In CCY1/CCY2 format
15	Currency	Y	Amount currency of the trade
38	OrderQty	Y	Amount of the order
192	OrderQty2	N	Order quantity of Far Leg Swap If empty, assume OrderQty2=OrderQty
54	Side	Y	1=Buy, 2=Sell. For Swap, the side always refers to the Far Leg Swap.
40	OrdType	Y	1 = Market 2 = Limit 3 = Stop
44	Price	N	Order Price. Conditionally required for OrdType = 2 (Limit) or 3 (Stop)

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Tag	Field Name	Required	Comments
640	Price2	N	Far leg order price of a swap.
75	TradeDate	N	The trade date of the execution
60	TransactTime	Y	In UTC terms.
63	FutSettType	N	Tenor of the Forward or Near Leg Swap
64	SettlDate	N	<p>Date (YYYYMMDD) for settlement</p> <p>i. For Spot, as provided by the LP</p> <p>ii. For Forward, the requested settlement date</p> <p>iii. For Swap, the requested near leg settlement date</p> <p>For Spot</p> <p>Relevant for fill or a partial fill (ExecType=F)</p>
6216	FutSettType2	N	Tenor of Far Leg Swap
193	FutSettDate2	N	Date (YYYYMMDD) for settlement of Far Leg Swap
32	LastQty	N	<p>Execution amount (for Spot, Forward and Near Leg Swap).</p> <p>Relevant for fill or a partial fill (ExecType=F)</p>
6808	LastQty2	N	<p>Execution amount of the Far Leg Swap.</p> <p>Relevant for fill or a partial fill (ExecType=F)</p>
31	LastPx	N	<p>All-in Execution price (for Spot, Forward and Near Leg Swap).</p> <p>Relevant for fill or a partial fill (ExecType=F)</p>
6160	LastPx2	N	<p>All-in Execution price of the Far Leg Swap.</p> <p>Relevant for fill or a partial fill (ExecType=F)</p>
194	LastSpotRate	N	<p>Spot rate of the execution price.</p> <p>This field should be always populated regardless of the Order Type (Limit or Market)</p> <p>Relevant for fill or a partial fill (ExecType=F)</p>
195	LastForwardsPts	N	<p>Forward Points of a Forward or a Near Leg Swap execution price.</p> <p>This field should be always populated regardless of the Order Type (Limit or Market)</p> <p>Relevant for fill or a partial fill (ExecType=F)</p>
641	LastForwardsPts2	N	<p>Forward Points of a Far Leg Swap execution price.</p> <p>This field should be always populated regardless of the Order Type (Limit or Market)</p> <p>Relevant for fill or a partial fill (ExecType=F)</p>
1065	BidSwapPoints	N	The bid FX Swap points for an FX Swap trade based on both legs of the swap. Can be positive or negative
1066	OfferSwapPoints	N	The offer FX Swap points for an FX Swap based on both

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Tag	Field Name	Required	Comments
			legs of the swap. Can be positive or negative
151	LeavesQty	Y	Quantity left of the order amount (for Spot, Forward and Near Leg Swap).
6164	LeavesQty2	N	Quantity left of the Far Leg Swap. Not supported yet.
14	CumQty	Y	The total amount executed (cumulative executed amount)
6165	CumQty2	N	The total amount executed (cumulative executed amount) of the Far Leg Swap. Not supported yet.
6	AvgPx	N	The accumulative average execution price (for Spot, Forward and Near Leg Swap). Relevant for fill or a partial fill (ExecType=F)
6159	AvgPx2	N	The accumulative average execution price of the Far Leg Swap. This will not be provided in case of ExecType=8 (rejection) and ExecType=4 (cancelation). Not supported yet.
59	TimeInForce	N	1 = Good Till Cancel (GTC) 3 = Immediate or Cancel (IOC) 4 = Fill or Kill (FOK) 6 = Good Till Date (GTD) Ignored if OrdType=1 (Market orders will execute until completion). If omitted, the default value (59=3) will be applied
126	ExpireTime	C	Conditionally required if TimeInForce = GTD. Required format is YYYYMMDD-HH:MM:SS
58	text	N	Holds an error message. Mandatory for ExecType=8 (rejected)
	Standard Trailer	Y	

Example – Fill:

```
8=FIX.4.4|9=326|35=8|34=1583|49=LMP-ORD|52=20130731-12:20:43.999|
56=CUST-ORD|1=FIXTEST|6=1.32475|11=3-jxxVznckeadm2wXbdE0Q00|14=1000000|
15=EUR|17=104-2874-1|31=1.32475|32=1000000|37=104-2874|38=1000000|39=2|
40=1|54=2|55=EUR/USD|60=20130731-12:20:43.967|64=2013-08-02|150=F|151=0|
527=C44OL1LZK5JV5304LD|382=1|375=Goldman|453=1|448=apiuser|452=11|10=233|
```

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Example – Reject:

```
8=FIX.4.4|9=226|35=8|34=2112|49=LMP-ORD|52=20130731-22:59:53.571|  
56=CUST-ORD|1=FIXTEST1|11=jBIViSTnwE_oR-XpcYePTA00|14=0|15=EUR|38=1000000|  
39=8|40=1|44=0|54=2|55=EUR/USD|58=Unknown account|60=20130731-22:59:53.571|  
150=8|151=1000000|10=007|
```