Fenics | FX

FX PLATFORM
INTEGRATION

Fenics FX

1. About This Document

1. Introduction

This document describes the message communications required to use Fenics FX.

2. Intended Audience

This document is directed at users of Fenics FX. This is primarily suited to developers who will adapt this feed for use in connecting internal FX trading systems to Fenics FX.

3. Related Documents
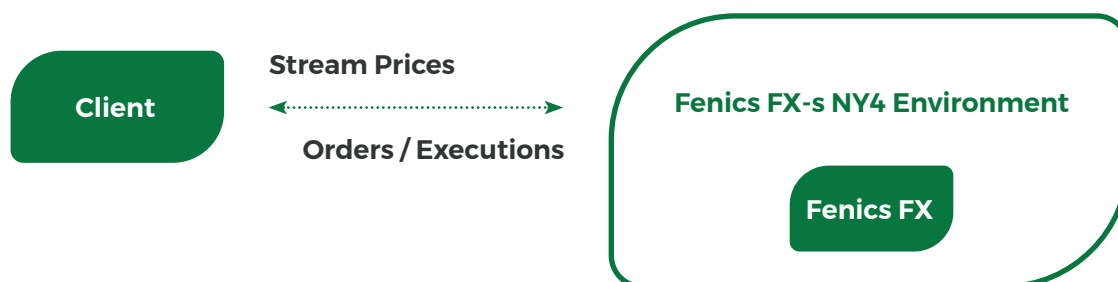
FIX 4.2 specification w/Errata dated May 1, 2001.

2. System Overview

Fenics FX service allows Clients to request prices and receive streaming prices from Fenics FX and send FX orders to Fenics FX.

The following diagram shows a client connecting via TCP to Fenics FX server.

2 TCP FIX Connections

Client

Stream Prices

Orders / Executions

Fenics FX-s NY4 Environment

Fenics FX

1. Physical Connectivity

Fenics FX offers the following connectivity options to our NY4 datacenter:

- cross connect (for institutions that also have network presence in NY4)
- direct circuit
- internet VPN

2. FIX Connectivity

Connecting to Fenics FX will be achieved through two FIX sessions over TCP connections, one for market data and one for trading. To connect, the client's system will require the following connection details:

- Fenics FX IP address and port
- FIX SenderCompID
- FIX TargetCompID

3. FIX Connectivity Currency Quoting Convention

All of the quantity fields will be in terms of the Trading currency. For example, an order to buy 1M EUR/USD at 1.31112 with Trading Currency of EUR means buying 1M EUR with 1M * 1.31112 USD. Where as, an order to buy 1M EUR/USD at 1.30115 with Trading Currency of USD means buying 1M USD with 1M/1.30115 EUR.

3. Supported Messages

1. FIX 4.2

All message traffic uses FIX 4.2 standard messaging. Specific messages supported from the standard are outlined in the tables that follow.

2. Session Messages

FIX MESSAGE	MESSAGE TYPE	FENICS FX SENDS	CLIENT SENDS
Heartbeat	0	Y	Y
Test Request	1	Y	Y
Resend Request	2	Y	Y
Reject	3	Y	
Sequence Reset	4	Y	Y
Logout	5	Y	Y
Logon	A	Y	Y

3. Application Messages

Market Data Session

FIX MESSAGE	MESSAGE TYPE	FENICS FX SENDS	CLIENT SENDS
Market Data Request	V		Y
Market Data Request Reject	Y	Y	
Market Data Full Refresh	W	Y	

Trading Session

FIX MESSAGE	MESSAGE TYPE	FENICS FX SENDS	CLIENT SENDS
New Order Single	D		Y
Execution Report	8	Y	
DK	Q		Y

4. Message Format

1. Header

The standard message header format is as follows:

TAG	FIELD NAME	REQ'D	COMMENTS
8	BeginString	Y	String, FIX.4.2
9	BodyLenght	Y	Int
34	MsgSeqNum	Y	Int
35	Msg Type	Y	String
49	SenderCompID	Y	String, as configured
56	TargetCompID	Y	String, as configured
43	PossDupFlag	N	Boolean; set to 'Y' to indicate this message may have already been sent
97	PossResend	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

2. Standard Message trailer

Each message, administrative or application, is terminated by a standard trailer containing the three digit checksum.

The standard message trailer format is as follows:

TAG	FIELD NAME	REQ'D	COMMENTS
10	CheckSum	Y	Int; zero filled three digit integer

5. Administrative Message

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 (same value used by both sides).

TAG	FIELD NAME	REQ'D	COMMENTS
	Standard Header	Y	MsgType = A
98	EncryptMethod	Y	Int; always zero
108	HeartBtInt	Y	Int; seconds; initiator will set the interval for both directions
141	ResetSeqNumFlag	N	Boolean; "Y" triggers both sides to reset sequence numbers
96	RawData	N	String; Fenics FX requires your password in tag 96 or tag 554; either is acceptable
554	Password	N	String; Fenics FX requires your password in tag 96 or tag 554
	Standard Trailer	Y	

2. Logout

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

TAG	FIELD NAME	REQ'D	COMMENTS
	Standard Header	Y	MsgType = 5
58	Text	N	String; ignored
	Standard Trailer	Y	

3. Heartbeat

The heartbeat message is sent by either send when that side has sent no other message for HeartBeatInt seconds. There is no required response to a Heartbeat message.

TAG	FIELD NAME	REQ'D	COMMENTS
	Standard Header	Y	MsgType = 0 (zero)
112	TestReqID	N	String; required when the heartbeat is the result of a Test Request message
	Standard Trailer	Y	

4. Test Request

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

TAG	FIELD NAME	REQ'D	COMMENTS
	Standard Header	Y	MsgType = 1
112	TestReqID	Y	String; will be reflected in the Heartbeat response
	Standard Trailer	Y	

5. Resend Request

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

TAG	FIELD NAME	REQ'D	COMMENTS
	Standard Header	Y	MsgType = 2
7	BeginSeqNo	Y	Int
16	EndSeqNo	Y	Int; zero indicates infinity
	Standard Trailer	Y	

6. Reject

The reject message will be sent if an invalid message is received.

TAG	FIELD NAME	REQ'D	COMMENTS
	Standard Header	Y	MsgType = 3
45	RefSeqNum	Y	Int; msgSeqNum of rejected message
371	RefTagID	N	Int; the tag number of the FIX field being referenced
372	RefMsgType	N	String; the MsgType of the FIX message being referenced
373	SessionRejectReason	N	Int; code to identify reason for a session-level Reject message
58	Text	N	String; where possible, message to explain reason for rejection
	Standard Trailer	Y	

7. Sequence Reset
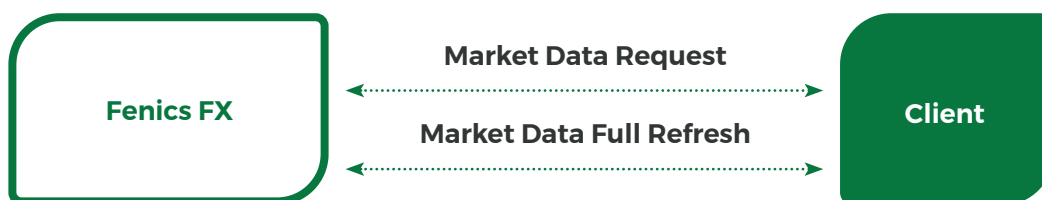
The sequence reset can only increase the sequence number.

TAG	FIELD NAME	REQ'D	COMMENTS
	Standard Header	Y	MsgType = 4
123	GapFillFlag	N	Boolean
36	NewSeqNo	Y	Int; sequence number following he gap fill or next expected sequence number if not a gap fill
	Standard Trailer	Y	

Message Resend Handling

In the event of a resend request being received from a Counter-party the FIX engine will reply by resending either the original messages, or a SequenceReset (gap fill) message in accordance with the FIX Protocol. All messages resent will be flagged as "possible duplicates".

6. Market Data

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

1. Market Data Request

Market Data Request returns one or more Market Data messages containing one or more Market Data Entries. This will be sent by the Fenics FX to start streaming market data.

TAG	FIELD NAME	REQ'D	COMMENTS
	Standard Header	Y	MsgType = V
262	MDReqID	Y	String; must be unique; (use previous value if disabling a request.)
263	SubscriptionRequestType	Y	Int; 1=Snapshot Plus Updates, 2=Disable Updates
264	MarketDepth	Y	0=Full Book 1=Top of Book; N>0 Means the top N Levels
265	MDUpdateType	N	Int; Required if 263=1, 0=Full refresh
110	MinQty	N	Int; used to limit minimum quote size shown; e.g., 10000000 to how 10million and above
267	NoMDEntryTypes	Y	Int; number of MDEntryType fields requested
269	MDEntryType	Y	String. 0=Bid, 1=Offer
146	NoRelatedSym	Y	Int; number of symbols requested
55	Symbol	Y	String; must be the first field in the repeating group; symbol is the only required and only significant field in the repeating group; symbol uniquely and fully specifies instrument. In CCY1/CCY2 format
	Standard Trailer	Y	

For example,

8=FIX.4.2|9=136|35=V|34=2|49=Client|52=20090105-12:58:21.400|56=Server| 262=req_2|263=1|265=0|264=0|267=2|269=0|269=1|146=1|55=EUR/USD|10=241
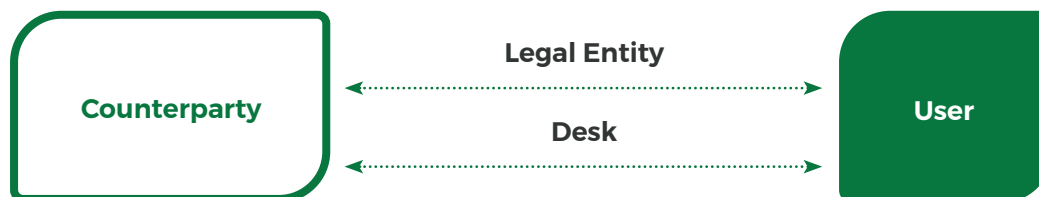
2. Market Data – Full Refresh

In FIX, Market Data messages can take two forms: Market Data Full Refresh (message type W - MDFull) and Market Data Incremental Refresh (message type X - MDIncremental). All market data from Fenics FX will take the form of Full Refresh.

TAG	FIELD NAME	REQ'D	COMMENTS
	Standard Header	Y	MsgType = W
262	MDReqID	N	String; as given in request
55	Symbol	Y	String in CCY1/CCY2 format
15	Currency	N	This field is Optional; identifies currency used for price
268	MDEntries	Y	Int; number of entries following:
269	MDEntryType	Y	0=bid, 1=offer
278	MDEntryID	N	String; unique within this message
270	MDEntryPx	Y	Price
271	MDEntrySize	Y	Decimal
290	MDEntryPositionNo	N	Int; display position of a bid or offer, numbered from most competitive to least competitive, per market side, beginning with 1
299	QuoteEntryID	Y	Id of the quote entry in the quote set
	Standard Trailer	Y	

For example,

8=FIX.4.2|9=157|35=W|49=Couter-party|56=LumeFX|34=2|52=20100226-12:40:01|262=req_2|55=EUR/USD|268=2|269=0|270=1.31112|271=1000000.0|269=1|270=1.31118|271=500000.0|10=234|

Legal Entity

Counterparty ←----------→ User

Desk

7. Trading Messages

Clients will send New Order messages to Fenics FX and expect to receive Execution Report messages from Fenics FX to indicate fills or rejects on the orders.

1. New Order

The order message will be sent to Fenics FX.

TAG	FIELD NAME	REQ'D	COMMENTS
	Standard Header	Y	MsgType = D
11	ClOrdID	Y	String; unique identifier; 24 chars max
21	HandlInst	N	1=Auto; default is Auto; only allowed value
1	Account	N	Ignored
55	Symbol	Y	String; in CCY1/CCY2 format
38	OrderQty	Y	Decimal quantity
54	Side	Y	1=Buy, 2=Sell
40	OrdType	Y	1=Market, 2=Limit
44	Price	N	Required for OrdType 2; decimal
15	Currency	Y	Currency of the trade; can be CCY1 (Base Currency) or CY2 (Term Currency)

TAG	FIELD NAME	REQ'D	COMMENTS
59	TimeInForce	N	3=IOC, 4=FOK, 0 = 'DAY'
60	TransactTime	Y	GMT
109	ClientID	N	Optional client/strategy identifier
110	MinQty	N	Decimal Qty (must be less than or equal to OrderQty), defaults to ZERO
58	Text	N	Free text
	Standard Trailer	Y	

2. Cancel Order

The Cancellation Report will be sent from Fenics FX, and the Cancel request only applies to DAY orders.

TAG	FIELD NAME	REQ'D	COMMENTS
	Standard Header	Y	MsgType = F
11	ClOrdID	Y	String; unique identifier; 24 chars max
41	OrigClOrdID	Y	ClOrdID of the original order request
1	Account	N	Ignored
55	Symbol	Y	String; in CCY1/CCY2 format
38	OrderQty	Y	Decimal quantity (should be same as the original order quantity)
54	Side	Y	1=Buy, 2=Sell
60	TransactTime	Y	GMT
58	Text	N	Free text
	Standard Trailer	Y	

3. Execution Report

The Execution Report will be sent from Fenics FX.

TAG	FIELD NAME	REQ'D	COMMENTS
	Standard Header	Y	MsgType = 8
37	OrderID	Y	String; Fenics FX's unique identifier for the order.
11	ClOrdID	Y	String; value from New Order.
17	ExecID	Y	String; Fenics FX's unique identifier.
21	HandlInst	Y	1 (Auto)
1	Account	Y	Fenics FX defined value
20	ExecTransType	Y	0=new
150	ExecType	Y	1=partial, 2=fill, 4=canceled, 8=rejected
39	OrdStatus	Y	1=partial, 2=fill, 4=canceled, 8=rejected
55	Symbol	Y	String; in CCY1/CCY2 format
15	Currency	Y	String; trade currency
38	OrderQty	Y	Decimal quantity
54	Side	Y	1=Buy, 2=Sell
40	OrdType	Y	1=Market, 2=Limit
44	Price	N	Required for OrdType 2; decimal.
60	TransactTime	Y	GMT
64	SettlDate	Y	Date (YYYYMMDD) for settlement

TAG	FIELD NAME	REQ'D	COMMENTS
32	LastQty	N	Decimal quantity; will be present for partial and fill ExecType
31	LastPx	N	Price; will be present for partial and fill ExecType
151	LeavesQty	Y	Qty left on the order
14	CumQty	Y	Total amount filled
6	AvgPx	Y	Price; zero for reject/cancel ExecType
103	OrdRejReason	N	1=unknown symbol, 6=duplicate order, 99=other; required for ExecType 8, rejected
58	Text	N	Free text
	Standard Trailer	Y	

4. Don't Know

The DK message can be sent to Fenics FX to indicate a problem with a received execution. The message raises an alert at Fenics FX but does not guarantee any action from Fenics FX. Further corrective action should be taken by the Client to remedy this error condition.

TAG	FIELD NAME	REQ'D	COMMENTS
	Standard Header	Y	MsgType = Q
37	OrderID	Y	Value from the problem execution report
17	ExecID	Y	Value from the execution report
127	DKReason	Y	1 character String
55	Symbol	Y	Value from the problem execution report
38	OrderQty	Y	Decimal quantity
54	Side	Y	1=Buy, 2=Sell
58	Text	N	Free text describing the problem
	Standard Trailer	Y	

5. Trade Drop Copy

Fenics FX can generate drop copies of all client and LP executions. The default format is detailed below. If specific extra fields are required please contact your Fenics FX representative.

TAG	FIELD NAME	REQ'D	COMMENTS
	Standard Header	Y	MsgType = 8
	Execution Report	Y	
10001	FenicsFXTradeID	Y	Unique ID of Execution
10002	Counterparty	Y	Counterparty of the Execution
10003	TradeDate	Y	Trade Date
10004	Direction	Y	Denotes Client or LP trade; valid values : C or L
10049	OrigSenderCompID	Y	SenderCompID of the original execution
10056	OrigTargetCompID	Y	TargetCompID of the original execution
	Standard Trailer	Y	

6. Revision History

VERSION	DATE CHANGED	CHANGE
1.3	5/15/2015	Added in section 1 more details to tag 264.
1.4	5/21/2015	Adding the tag 15 as an optional tag in the Market data full refresh.
1.5	11/20/2015	Adding tag 109 optional client/strategy identifier in the new order message.