FIX Session Messages Specification

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1   INTRODUCTION

The Currenex FIX offering supports automated FX rate price streams, order entry, order execution on the Currenex platform.

The purpose of this document is to provide a detailed description of the supported FIX Session information and message set required to connect to Currenex for the following:

- FIX Taker Order Placement
- FIX Taker Market Data
- FIX Taker RFQ
- FIX Real Time STP Service
- FIX Maker RFQ
- FIX Maker ESP

2   PERSISTENCE AND SEQUENCE NUMBER RESETS

2.1   Non Persisted FIX Services

 FIX message persistence is NOT supported on the following Currenex FIX services:

- FIX Taker Market Data
- FIX Taker RFQ
- FIX Real Time STP Service
- FIX Maker RFQ
- FIX Maker ESP

The inbound and outbound sequence number counts will be reset to one (1) with each new Logon. The client Logon message should always have either an initial sequence number of one (1) and or include tag 141=Y. The Currenex Logon reply message will always have an initial sequence number equal to one (1).

User can remain logged on to Currenex non-persisted services from 05:00 pm EST/EDT Sunday until approximately 05:00 on Fridays.

2.2   Persisted FIX Services

To achieve maximum performance, Currenex keeps persistence disabled by default on all FIX Taker service ids used to place orders. Though it can be enabled upon request, this is discouraged due to the negative impact persisting messages has upon performance. This applies to all FIX trade services, including Currenex Big and MidX.

Persistence is maintained per FIX node. If enabled on an id, the session will reconnect via the same FIX node as long as the node is still available and the new logon is sent within ten (10) minutes of any disconnection. If either of these is not true, the new logon will be directed to a different FIX node with the inbound and outbound message counts reset to one (1).

Otherwise, users enabled for persistence can stay continuously connected on the Currenex FIX Taker Order service from 5 pm ET Sunday until 5 pm ET Friday.

2.2.1   Persisted FIX Services Sequence Number Resets

Prior to the Friday 17:00:00 ET FIX service shutdown, Currenex will send all connected FIX Taker Order service sessions a TradingSessionStatus message containing TradesStatus (340) = 5, to indicate the sequence number reset process is about to occur. Once received, users will be unable to send new orders or replace outstanding orders. However, outstanding orders can be canceled. Status changes to outstanding orders; e.g., fills, cancels, etc., if any occur, will continue to be sent while the service shuts down.

Note: TradingSessionStatus messages will only be sent on FIX Trade services prior to a weekly logout. It will not be sent on the FIX Market data or FIX STP sessions.

Currenex will then send a Logout message to disconnect all active client sessions. Upon receiving the Logout message, a client should disconnect. Upon logging in again with the Sunday exchange 5 pm ET start up, user FIX inbound and outbound sequence numbers should be reset to one (1).

Users can still apply their own daily reset process, if needed, by ensuring their Logon message contains tag 141=Y.

2.2.2   Mismatched Sequence Number Counts

If Currenex responds to a client initiated Logon message with a Logout message containing Text (58) = "MsgSeqNum too low, expecting <##> but received <#> Logon," the client should either

- Reset its sequence number to the stated expected value or
- Reset both the inbound and outbound sequence number counts to one (1); e.g., by sending the Logon message with ResetSeqNumFlag (141)=Y.

Clients unable to reset their sequence numbers should contact Currenex Customer support.

2.3   ResendRequest Message Limits

Currenex ResendRequest messages should be replied to with a SequenceReset message wtih GapFillFlag (123) = Y and NewSeqNo (36) set to the number from which to renew the sequence count.   Actual FIX messages should NEVER be replayed in response to a Currenex initiated ResendRequest message.

Currenex ResendRequests are governed by a MaxRange count of 10,000 messages; i.e., no more than 10,000 messages can be sent per ResendRequest.

E.g., a sequence request for 30,000 messages would need to be sent as three (3) separate requests in the following ranges:

1) 0 – 10000
2) 10001 – 20001
3) 20002 – 30000

3   FIX MESSAGE LIMITS

Currenex maintains a FIX message limit a rolling time period. If a session breeches this limit, Currenex will send a TradingSessionStatus message with tag 340 = 5, indicating the session is to be closed. Orders in process will be permitted to complete, but no new orders or cancel replace operations will be permitted. Once all order processing is completed, Currenex will log the session out.

Users who receive a TradingSessionStatus with tag 340 = 5 as the result of exceeding the limit should gracefully log off and then reestablish the connection.

4   SESSION MESSAGES

The Currenex FIX specification supports FIX version 4.2 for its FIX Taker ESP service and FIX 4.4 messaging for its other FIX service.

The following convention is used in this document to indicate message direction:

- In   – a message sent to Currenex
- Out   – a message sent by Currenex.
- In/Out – a message that can be sent to or from Currenex

Available fields, requirements, values and their associated meanings are documented in the Message Details section.

Session messages establish, maintain and terminate a Currenex connection.

- Logon – (In/Out) message sent to initiate a FIX session to Currenex. The Logon message establishes the communication session, authenticates the connecting client, and initializes the message sequence number.

- Heartbeat – (In/Out) message sent by Currenex during periods of application inactivity to ensure connection validity. The receiving party should always respond with a heartbeat message.

- Resend Request – (In/Out) request that certain messages be resent. Often used when gaps are detected in the sequence numbering, when a message is lost, or during the initialization process.

- Test Request ‾ (In/Out) used to verify session connectivity and to synchronize sequence numbers. The receiving party should always respond with a heartbeat message.

- Logout – (In) signals the normal termination of the trading session. A session terminated without a Logout message will be considered an abnormal condition. The Currenex FIX gateway treats a MP as logged out whenever the communication session is dropped.

4.1   Session Message Details

The fields that make up each message are described in this section.

Note that a number of fields specific to Currenex are also used.

In the below tables, stream specific messages are presented in columns: "Tag," "Field Name," "Required," and "Description" going from left to right

4.1.1   Standard Header

Tag	Field Name	Required	Comments
8	BeginString	Y	Message start. Handled by FIX engine.
9	BodyLength	Y	Message length. Handled by FIX engine.
35	MsgType	Y	The message type. Refer to individual messages for valid values.
49	SenderCompID	Y	Provided by Currenex - the user's trading account id.
56	TargetCompID	Y	Default setting is "CNX"

Tag	Field Name	Required	Comments
34	MsgSeqNum	Y	Message sequence number. Handled by FIX engine.
43	PossDupFlag	N	Indicates possible retransmission of message with this sequence number: Y = Possible duplicate N = Original transmission. Used by Currenex on SequenceResets and ResendRequests.
52	SendingTime	Y	The GMT timestamp on the message. Handled by FIX engine.

4.1.2 Standard Trailer

Tag	Field Name	Required	Comments
10	CheckSum	Y	A value calculated by the FIX engine from the message data and transferred with the data. If the data received does not match the CheckSum value, the data was corrupted in transit.

4.1.3 Heartbeat

Tag	Field Name	Required	Comments
	Standard Header	Y	MsgType tag 35 = 0
112	TestReqID	N	Required if heartbeat is due to a Test Request message.
	Standard Trailer	Y	

4.1.4 Logon

Tag	Field Name	Required	Comments
	Standard Header	Y	MsgType tag 35 = A
98	EncryptMethod	Y	0 – not encrypted is the only accepted value.
108	HeartBtInt	Y	Heartbeat interval in seconds.
141	ResetSeqNumFlag	N	Y – resets both the incoming and outgoing sequence numbers to 1.
554	Password	Y	Id specific password.
	Standard Trailer	Y	

4.1.5 Logout

Tag	Field Name	Required	Comments
	Standard Header	Y	MsgType tag 35 = 5
58	Text	N	Descriptive text message. Possible values for initial logon failure include: Configuration Error System Failure Authentication Error
	Standard Trailer	Y	

4.1.6 Resend Request

Tag	Field Name	Required	Comments
	Standard Header	Y	MsgType tag 35 = 2
7	BeginSeqNo	Y	First sequence number in the range to be resent.
16	EndSeqNo	Y	Last sequence number in the range to be resent. For single message resend requests, set BeginSeqNo = EndSeqNo. If request is for all messages subsequent to a particular message, EndSeqNo = 0.
	Standard Trailer	Y	

4.1.7 Test Request

Tag	Field Name	Required	Comments
	Standard Header	Y	MsgType tag 35 = 1
112	TestReqID	Y	Unique ID of test request.
	Standard Trailer	Y	

5   APPENDICES

5.1   Revision History

Revision Number	Revision Date	Page Number	Update
1	20 August 2012	3	Section 2.2.1 has been revised to reflect the change in sequence number reset from nightly to weekly.
2	28 May 2014	3	Section 2.2.1: Added a note regarding TradingSessionStatus prior to weekly logout.
3	27 March 2015	8	Section 4.1.5: Added possible valued for Text (58) for initial logon failure.
4	25 August 2015	3	Section 2.2: Updated description of persistence.
5	8 February 2016	3	Section 2.2: Added note on Currenex Big and MidX.