DMALINK®
WORLD-CLASS CURRENCY TRADING TOOLS

ELECTRONIC e-FX MARKETPLACE

FX/BULLION API CONNECTIVITY GUIDE

DMALINK ™

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www.dmalink.com/agreement

Prospective Platform Users, market makers and takers, can submit our onboarding form to request a live trading account, subject to Terms and Prime Broker NOP credit limit approval:

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Business Support

The DMALINK Business Support team operates 24/5.5 over three time zones and are available to deal with any problems or queries.

For support queries, please call or email

ops@dmalink.com
+44 (0) 20 7117 2517

Alternatively, you can submit a support ticket electronically:

www.dmalink.com/client-support-hub

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About this manual

This manual provides information required by Platform Users to access electronic foreign exchange and bullion prices streamed by DMALINK. The Introduction chapter provides an overview of the API. The subsequent chapters provide instruction on the use of the various components of the system.

We work with multiple FIX API providers. For the purpose of eFX and bullion price distribution in London (LD4) and New York (NY4) we connect Platform Users through our OneZero hub and FIX API.

Other products may require connectivity to a different API which we will communicate with Platform Users. For instance, specific liquidity sources or products may be available through Fluent Technologies or other Systems.

It is intended that this manual is read on-line in pdf format using Adobe Acrobat reader. Cross reference links are highlighted in red text and provide a means of navigating to related information. It may also be printed.

Who this manual is for

This manual is designed for use by Platform Users of DMALINK. A trader uses the API system to:

- View prices, spread and depth from any of the pools of liquidity assigned
- Submit quotes/orders
- Monitor positions and exposures in real-time view

DMALINK solution overview

DMALINK™ is an established FX cash and precious metals execution platform supporting some of the world's largest institutional participants to effectively manage their exposure across 63 currency pairs through our wide-reaching network of regional liquidity access points in London (LD6) and New York (NY4).

As part of proven FIX and Binary API and GUI technology powered by independent mid-rate reference data, we help to automate and simplify the FX trading and reporting operations of our clients. We provide a true measure of cost of execution as standard.

DMALINK is the only bank and exchange-independent ECN that enables market makers to offer their regional pricing to clients at $0 brokerage fee. Clients benefit from improved top of book pricing vs other traditional venues.

Please consult the solution sheet for detailed platform features:

dmalink.com/solution

FIX 4.4 Trade /Quote Specification

Confidential and Proprietary

Version 1.6.0 – November 7, 2019

Contents

Versions

ExternalFIX API Version Number	Date	Changes	Introduced In Build
1.0.0	2017-01-09	Initial Version	5.4.0
1.0.0	2017-01-23	Minor document corrections (grammar, broken hyperlinks, Sequence Reset message being mislabeled as 35=2 instead of 35=4)	5.4.0
1.0.0	2017-07-02	Removed the quote unsubscribe from the documentation since it is not supported.	5.4.0
1.1.0	2017-07-02	ExecutionReport (35=8): • Added Account field. Previous version will reject ExecutionReport messages that contain an account field. OrderCancelRequest (35=F): • Added Account field to the documentation. It was already being sent if specified. OrderCancelReject (35=9): • Added Account field. Previous version will reject OrderCancelReject messages that contain an account field.	5.4.0
1.1.0	2017-03-17	Minor documentation clarification regarding Quote ID uniqueness and lifetime.	5.4.0
1.1.0	2017-03-21	Minor document corrections. Incorrect tag of 280 was used for MDEntryID. This has been changed to 278.	5.4.0
1.1.0	2017-05-18	Minor document corrections. Minor updates to the description of the Symbol field in several places in this document, for clarity.	5.4.0
1.2.0	2017-08-04	MarketDataSnapshotFullRefresh (35=W): • QuoteEntryID changed to required. • This is an un-versioned, breaking change. Clients will be required to add the QuoteEntryID if it was not already being included when upgrading to this version. Please contact oneZero support if a QuoteEntryID cannot be added in a timely manner.	6.1.0
1.2.0	2017-11-14	Updated "Order Type / Time In Force Chart" section to clarify that the client does not have to support all valid combinations.	6.1.0
1.2.0	2018-01-24	Added breaking change note for specification version 2017-08-04. Minor documentation correction: • Added missing "35=" for MarketDataSnapshotFullRefresh to the "QuoteSessionMessaging.Summary.Quote IDs" section.	6.1.0
1.2.0	2018-04-06	MarketDataIncrementalRefresh (35=X): • Removed 'B' from list of valid values for Tag 276. This was an error in previous versions of this document and was	6.1.0

		never supported.	
1.3.0	2018-08-14	ExecutionReport (35=8): • Added support for counterparty reporting via tags NoContraBrokers (Tag 382), ContraBroker (Tag 375) and ContraTradeQty (437)	7.0.0

1.4.0	2019-05-28	NewOrderSingle (35=D):
		• Added Parties Component Block (453)
		    ○ Added PartyID (448)
		    ○ Added PartySource (447)
		    ○ Added PartyRole (452)
			8.0.1

1.5.0	2019-05-28	MarketDataRequest (35=V): • Clarified unsubscribing w/ SubscriptionRequestType set to Disable Previous (263=0). • Clarified non-use of Snapshot Only SubscriptionRequestType (263=0)	8.0.1
1.6.0	2019-11-07	ExecutionReport (35=8): • Added ContraLegRefID (Tag 655) • Added OZContraTradePrice (Tag 8890)	8.2.0
1.7.0	2020-06-01	NewOrderSingle (35=D): • Field Price (Tag 44) is now never sent for market orders. (Before it was either set to zero or to a reference price, though it was already marked as conditionally required.)	8.6.0

Introduction

Purpose

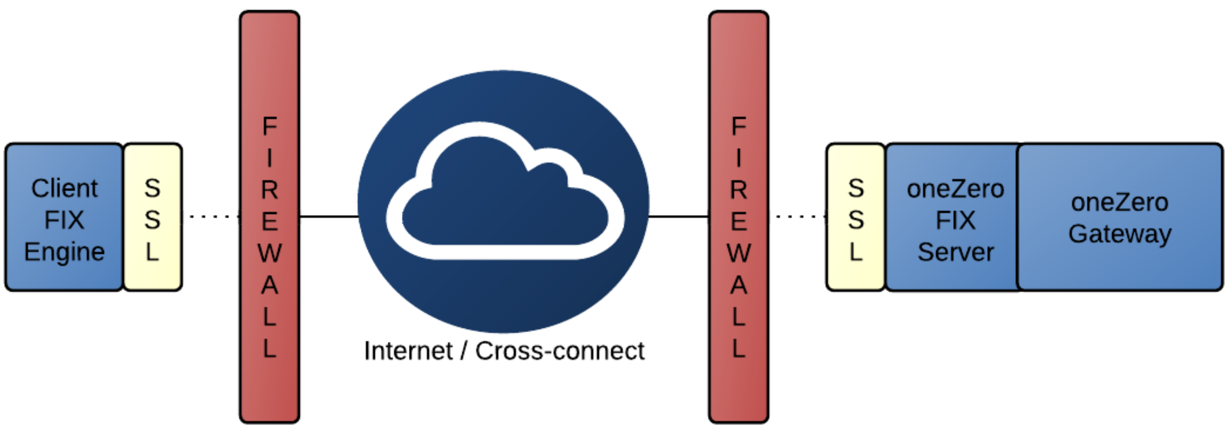
The purpose of this document is to outline the rules of engagement for interfacing with the oneZero Financial Systems Gateway via the Financial Information eXchange (FIX) protocol in order to publish quote data and receive trades.

Functionality

The oneZero External FIX 4.4 API is designed specifically for spot markets, foreign exchange (FX), and contracts for difference (CFDs). The FIX API into oneZero's quote/trade routing engine is designed for the following functionalities:

- Connectivity
- Quote Streaming (Subscription)
- Order Execution

System Overview



References

More information on oneZero Financial Systems, LLC and the oneZero Financial Systems Gateway can be found at our website: www.onezero.com

Documentation and standards for the FIX Protocol are available from the FIX Protocol Limited organization via their website: www.fixprotocol.org

Connectivity

Introduction

Connecting to the oneZero External FIX 4.4 API:

1) Client opens socket connection to oneZero FIX Server on pre-defined port.
2) Client sends FIX Logon Request (35=A)
3) oneZero Gateway sends FIX Logon Response (35=A)
4) oneZero / Client exchange Heartbeat (35=0)

Credentials

Customers connecting to the oneZero External FIX API will receive the following information from oneZero which should remain configurable within their FIX Engine:

Quote Session	
IP Address	
Port	
SenderCompID	
TargetCompID	
Password	
Trade Session	
IP Address	
Port	
SenderCompID	
TargetCompID	
Password	

Prior to connecting to oneZero arrangements must be made to adjust the oneZero firewall to permit the IP from which the client will be connecting.

Verification

Prior to testing FIX API conformance all clients connecting to oneZero via FIX should run a network connectivity test using a TELNET protocol client application. In Microsoft Windows, open the COMMAND PROMPT and enter (for both quotes and trades):

```
TELNET <IP Address> <Port>
```

A blank screen indicates success, for any error contact oneZero IT.

Connection Keepalive Requirements

Clients connected to oneZero are required to send a Heartbeat (35=0) to oneZero, on each connected FIX session, at least once every 30 seconds. Sessions that do not fulfill this requirement may be disconnected for lack of communication.

Versioning

The target oneZero External FIX API version number is specified by the client in the Logon (35) request message in a custom field, OZExternalFIXSpecVersion (33000). When the Logon request is received, oneZero will check if the requested version is compatible with the configured version of the running FIX engine. If the versions are not compatible a Reject message will be sent. If the versions are compatible, then the version in use by the oneZero FIX engine will be added to the Logon Response.

FIX Admin Messaging

Summary

Admin messages are used to establish, maintain, and terminate all FIX sessions.

Please note that the BusinessMessageReject (3) is not an admin message; however, it serves a similar purpose as the admin level messages and is used by both the Quote and Trade sessions.

StandardHeader

The standard header included on all FIX Messages sent/received by oneZero.

Standard Header					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
8	BeginString	Y	FIX.4.4	String	Always first field in message.
9	BodyLength	Y	-	Int	Always second field in message.
35	MsgType	Y	-	String	Always third field in message.
34	MsgSeqNum	Y	-	Int	The sequence number of the message, can be embedded outside of header.
49	SenderCompID	Y	-	String	The SenderCompID supplied to the client by oneZero.
52	SendingTime	Y	-	String	UTC time message was sent. Must include milliseconds.
56	TargetCompID	Y	-	String	The TargetCompID supplied to the client by oneZero.

StandardTrailer

The standard trailer included on all FIX Messages sent/received by oneZero.

Standard Trailer					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
10	CheckSum	Y	-	String	Always last field in message. Three byte, unencrypted checksum.

Logon

A Logon request (A) is sent by the client to oneZero to initiate a FIX session. The target oneZero External FIX API version should be specified in the custom field OZExternalFIXSpecVersion (33000).

A Logon response is sent by oneZero to the client if the Logon request is accepted. OZExternalFIXSpecVersion (33000) will contain the oneZero External FIX API version in use by the oneZero FIX Engine.

Note: See FIX Messaging - Versioning section above for additional information about oneZero External FIX API versioning.

Logon (MsgType, 35=A)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
98	EncryptMethod	Y	0	Int	Must be type 0 (None)
108	HeartBtInt	Y	<= 30	Int	How often the client would like to receive a periodic heartbeat from oneZero, in seconds. This value should be 30 or less.
141	ResetSeqNumFlag	C	-	Boolean	Forces automatic reset of sequence # for both sides. Will be set to Y for quoting sessions.
554	Password	C	-	String	The password supplied to the client by oneZero. Must be set for the request. Will not be set for the response.
33000	OZExternalFIXSpecVersion	Y	#.#.#	String	The oneZero external FIX specification version in use by the sender.
<Standard Trailer>					

Heartbeat

A Heartbeat (35=0) is sent by either oneZero or the client as a keep-alive and means of verifying FIX connectivity. A Heartbeat is also sent in response to a TestRequest (35=1).

Client connections should send a Heartbeat to oneZero, at a minimum, every 30 seconds.

Note: See Connection Keepalive Requirements section above for additional heartbeat requirements oneZero places on client sessions.

Heatbeat (MsgType, 35=0)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
112	TestReqID	N	-	String	If responding to a TestRequest, the Test Request ID.
<Standard Trailer>					

TestRequest

A TestRequest (35=1) is sent by either oneZero or the client as a means of verifying two-way FIX connectivity. A Heartbeat (35=0) is sent in response to a TestRequest.

Test Request (MsgType, 35=1)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**

<Standard Header>					
112	TestReqID	Y	-	String	If responding to a TestRequest, the Test Request ID.
<Standard Trailer>					

ResendRequest

The ResendRequest (35=2) is sent by either oneZero or the client to initiate the retransmission of messages. This function is utilized if a sequence number gap is detected, if the receiving application lost a message, or as a function of the initialization process.

Resend Request (MsgType, 35=2)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
7	BeginSeqNo	Y	-	Int	The first sequence number from this session to resend.
16	EndSeqNo	Y	-	Int	The last sequence number from this session to resend. Set to 0 to resend all message following the BeginSeqNo.
<Standard Trailer>					

SequenceReset

A SequenceReset (35=4) is sent by either oneZero or the client to specify the new sequence number to reset to as the value of the next sequence number to be expected by the message recipient immediately following this message and/or sequence numbers being skipped.

Resend Request (MsgType, 35=4)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
123	GapFillFlag	N	-	Boolean	If present and set to Y then the gap fill mode will be used for the reset; otherwise, reset mode will be used.
36	NewSeqNo	Y	-	Int	The value of the next sequence number to be expected by the message recipient immediately following the messages and/or sequence numbers being skipped
<Standard Trailer>					

Reject

A Reject (35=3) is sent by either oneZero or the client in response to an unsupported or malformed, admin-level FIX message. When possible, a reason and explanation for the rejection is supplied in the SessionRejectReason (373) and Text (58) fields, respectively.

Note: A Reject is sent in response to unsupported or malformed, admin-level messages while a BusinessMessageReject (j) is sent in response to unsupported or malformed, application-level messages.

Note: A FIX level reject is different than a trade level reject, which would be sent via an ExecutionReport (35=8). The Reject is only for admin-level message rejects.

Reject (MsgType, 35=3)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
45	RefSeqNum	Y	-	Int	The MsgSeqNum of the message causing the FIX Reject.
371	RefTagID	N	-	Int	The FIX tag of the field which caused the FIX reject.
372	RefMsgType	N	-	Int	The MsgType of the message that caused the FIX Reject.
373	SessionRejectReason	N	-	Int	An enumerated reason for the FIX Reject.
58	Text	N	-	String	Text explaining the FIX Reject.
<Standard Trailer>					

BusinessMessageReject

A BusinessMessageReject (j) is sent by either oneZero or the client in response to an unsupported or malformed FIX application-level message. When possible, a reason and explanation for the rejection is supplied in the BusinessRejectReason (380) and Text (58) fields, respectively.

Note: A Reject (35=3) is sent in response to unsupported or malformed, admin-level messages while a BusinessRejectMessage is sent in response to unsupported or malformed, application-level messages.

Note: A FIX level reject is different than a trade level reject, which would be sent via an ExecutionReport (35=8). The BusinessMessageReject is only for application-level message rejects.

Business Message Reject (MsgType, 35=j)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
45	RefSeqNum	N	-	Int	The MsgSeqNum of the message causing the FIX reject.
372	RefMsgType	Y	-	Int	The MsgType of the message that caused the FIX reject.
379	BusinessRejectRefID	N	-	Int	The value of the application-level 'ID' field on the message being referenced. Required

					unless the corresponding ID field (see list above) was not specified.
380	BusinessRejectReason	Y	-	Int	Code to identify the reason for the FIX reject.
58	Text	N	-	String	Text explaining the FIX reject.
354	EncodedTextLen	N		Int	Length of EncodedText field. Must be set if EncodedText field is specified and must immediately precede it.
355	EncodedText	N	-	String	Encoded (non-ASCII characters) representation of the Text field in the encoded format specified via the MessageEncoding field.
<Standard Trailer>					

Logout

A Logout (35=5) is sent by either oneZero or the client to terminate a FIX session. When applicable, a reason for the Logout will be provided in the Text (58) field.

Logout (MsgType, 35=5)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
58	Text	N	-	Text	Reason for the logout, if available
<Standard Trailer>					

Quote Session Messaging

Summary

Once connected to the oneZero External FIX API Quote Session, oneZero will subscribe to streaming quote updates from the client using a MarketDataRequest (V) with SubscriptionRequestType (263) set to Subscribe (1, Snapshot + Updates). A single MarketDataRequest will be sent per Symbol (55). The client will respond with a MarketDataRequestReject (Y) for a request that is malformed or references an invalid symbol.

oneZero can cancel streaming for any symbol, or a group of symbols, using a MarketDataRequest (V) with SubscriptionRequesType (263) set to Disable Previous Update (2).

oneZero will not send a MarketDataRequest (V) with SubscriptionRequesType (263) set to Snapshot Only (0).

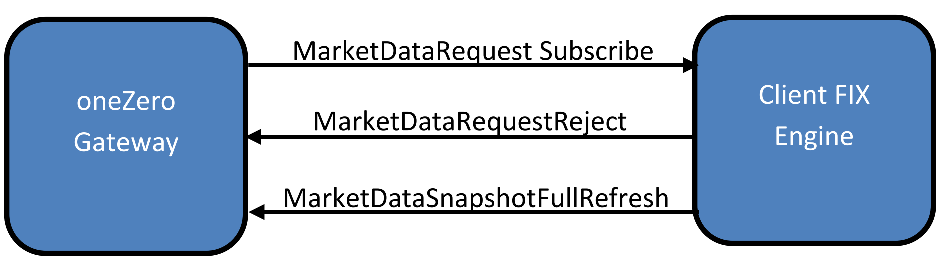
oneZero supports two methods for streaming quotes, FullRefresh (0) and IncrementalRefresh (1). The method to use for the session will be sent in the first MarketDataRequest in the MDUpdateType (265) field. The method will remain the same for subsequent requests within the session.

Full Refresh

For any valid MarketDataRequest (V) with an MDUpdateType (265) set to FullRefresh (0), the client will respond with a MarketDataSnapShotFullRefresh (W) for each symbol and continue streaming quote updates for the duration of the FIX session.

Messaging Sequence

- oneZero sends a MarketDataRequest (V), Subscribe (1), FullRefresh (0) for each desired Symbol (55).
- For each MarketDataRequest, the client responds with:
  - MarketDataRequestReject (Y) if the symbol is invalid.
  - MarketDataSnapShotFullRefresh (W) if the symbol is valid.
- For subscribed symbols, the client sends:
  - MarketDataSnapShotFullRefresh for changes to symbols.
- All streaming stops upon Logout (5).

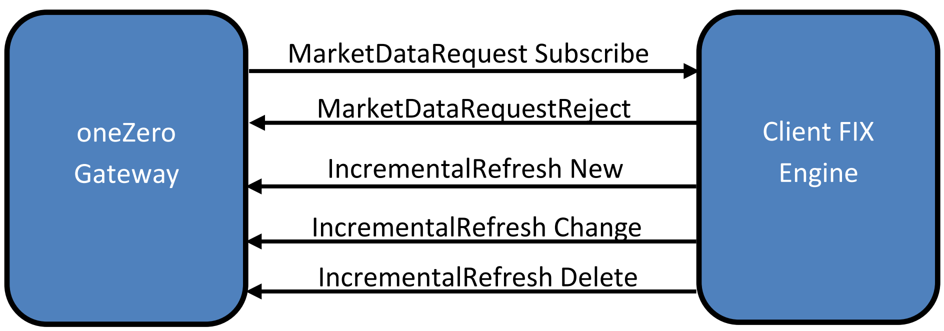


Incremental Refresh

For any valid MarketDataRequest (V) with an MDUpdateType (265) set to IncrementalRefresh (1), the client will respond with a MarketDataIncrementalRefresh (X) with MDUpdateAction (279) set to New (0). The client will send any changes regarding a subscribed symbol to oneZero via a MarketDataIncrementalRefresh with MDUpdateAction set to Change (1). If the client deletes the symbol then a MarketDataIncrementalRefresh with MDUpdateAction set to Delete (2) will be sent to oneZero.

Messaging Sequence

- oneZero sends a MarketDataRequest (V), Subscribe (1), IncrementalRefresh (1) for each desired Symbol (55).
- For each MarketDataRequest, the client responds with:
  - MarketDataRequestReject (Y) if the symbol is invalid.
  - MarketDataIncrementalRefresh (X) New (0) for each valid symbol.
- For subscribed symbols, the client sends:
  - MarketDataIncrementalRefresh Change (1) for changes to symbols.
  - MarketDataIncrementalRefresh Delete (2) for removed symbols.
- All streaming stops upon Logout (5).



Quote Cancelling

A quote sent by the client to oneZero can be cancelled using the QuoteCancel (35=Z) message. Please note that quotes can only be cancelled by referencing the symbol. Cancelling by an ID is not currently supported.

Quote IDs

All quotes for a given symbol must have a unique ID; uniqueness must be guaranteed for, at a minimum, the duration of the session. The field designated for this ID will be QuoteEntryID (299), MDEntryID (278), or QuoteID (117) for the MarketDataSnapshotFullRefresh (35=W), MarketDataIncrementalRefresh (35=X), or NewOrderSingle (35=D) messages, respectively.

MarketDataRequest

A MarketDataRequest (35=V) is sent by oneZero to the client to request market data for a given Symbol (55) or to change the SubscriptionRequestType (263) for a given Symbol. The

SubscriptionRequestType will be set to Subscribe (1) to begin quote streaming. The MDUpdateType (265) will be set to either FullRefresh (0) or IncrementalRefresh (1). The MDUpdateType will be the same for all MarketDataRequests within a single session. There will always be two MDEntryTypes (267) with the first set to Bid (0) and the second set to Offer (1). There will always be one Symbol.

MarketDataRequest (35=V)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
262	MDReqID	Y	-	String	A unique (per session) ID for the Market Data Request.
263	SubscriptionRequestType	Y	1	Int	1 = Subscribe
264	MarketDepth	Y	-	Int	The depth of market (number of price layers) to be quoted for the symbol(s)
265	MDUpdateType	Y	0 or 1	Int	The update type: • 0 = Full Refresh. • 1 = Incremental Refresh.
267	NoMDEntryTypes	Y	2	Int	2 – Bid and Offer will always be requested.
=>269	MDEntryType	Y	0 or 1	Int	Type (side) of quote requested. • 0 = Bid • 1 = Offer
146	NoRelatedSym	Y	1	Int	Number of Symbols (55) requested. Will always be 1.
=>55	Symbol	Y	-	String	Requested symbol (in CCY1/CCY2 format for FX).
<Standard Trailer>					

MarketDataRequestReject

A MarketDataRequestReject (35=Y) is sent by the client to oneZero in response to a MarketDataRequest (35=V) that cannot be processed. If applicable the reason for the rejection should be specified in MDReqRejReason (281). Any additional information about the rejection should be stored in Text (58).

MarketDataRequestReject (35=Y)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
262	MDReqID	Y	-	String	The MDReqID of the MarketDataRequest being rejected.
281	MDReqRejReason	N	-	Int	An enumerated reason for the rejection of the

					MarketDataRequest.
58	Text	N	-	String	Additional reason for the rejection, if available.
<Standard Trailer>					

MarketDataSnapshotFullRefresh

A MarketDataSnapshotFullFefresh (35=W) is sent by the client to oneZero in response to a MarketDataRequest (35=V). The message contains all of the market data for the requested Symbol (55).

MarketDataSnapshotFullRefresh (35=W)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
262	MDReqID	Y	-	String	The MDReqID of the originating MarketDataRequest message.
55	Symbol	Y	-	String	The symbol (in CCY1/CCY2 format for FX) being quoted in the MarketDataSnapshot.
268	NoMDEntries	Y	-	Int	Number of MDEntries following.
=>269	MDEntryType	Y	0 or 1	Int	Type (side) of quote: • 0 = Bid • 1 = Offer
=>270	MDEntryPx	Y	-	Price	The price for the MDEntry
=>271	MDEntrySize	N	-	Size	The quantity (tradeable volume) of the market data entry.
=> 276	QuoteCondition	N	A, B, or I	String	• A = Tradeable Quote • B = Closed Quote • I = Indicative Quote
=>282	MDEntryOriginator	N	-	String	The originator of the quote
=>299	QuoteEntryID	Y	-	String	Unique ID for quote.
<Standard Trailer>					

MarketDataIncrementalRefresh

A MarketDataIncrementalRefresh (35=X) is sent by the client to oneZero when one or more market data entries has been added, changed, or deleted.

MarketDataIncrementalRefresh (35=X)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
262	MDReqID	Y	-	String	The MDReqID of the originating MarketDataRequest message.
268	NoMDEntries	Y	> 0	Int	Number of MDEntries following. Must be greater than zero.
=>279	MDUpdateAction	Y	0, 1, or 2	Int	The type of change to the MDEntry: • 0 = New

					• 1 = Change • 2 = Delete Must be the first field in the group.
=>269	MDEntryType	Y	0 or 1	Int	Type (side) of quote: • 0 = Bid • 1 = Offer
=>55	Symbol	Y	-	String	The symbol (in CCY1/CCY2 format for FX) of the instrument being updated.
=>278	MDEntryID	Y	-	String	Unique ID for this market data entry.
=>270	MDEntryPx	N	-	Price	The price for the MDEntry.
=>271	MDEntrySize	N	-	Size	The quantity (tradeable volume) of the market data entry.
=> 276	QuoteCondition	N	A or I	String	• A = Tradeable Quote • I = Indicative Quote
=>282	MDEntryOriginator	N	-	String	The originator of the quote.
<Standard Trailer>					

QuoteCancel

A QuoteCancel (35=Z) is sent by the client to oneZero to cancel the previous quote for a specified Symbol(s) (55). QuoteCancels are only sent for 1..n symbols or for all symbols depending on the QuoteCancelType (298).

A quote can only be canceled by Symbol (55). Canceling a quote by QuoteEntryID (299), MDEntryID (278), or QuoteID (117) is not currently supported.

A QuoteStatusReport (35=AI) will not be sent by oneZero in response to the QuoteCancel.

Quote Cancel (35=Z)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
298	QuoteCancelType	Y	1 or 4	Int	• Cancel All Quotes (4) • Cancel Symbol (1)
295	NoQuoteEntries	C	-	String	Number of symbols to cancel. Required and must be greater than zero if QuoteCancelType = CancelSymbol (1).
=>55	Symbol	C	-	String	Symbol (in CCY1/CCY2 format for FX) for quote to cancel. Required if QuoteCancelType = CancelSymbol (1).
<Standard Trailer>					

Trade Session Messaging

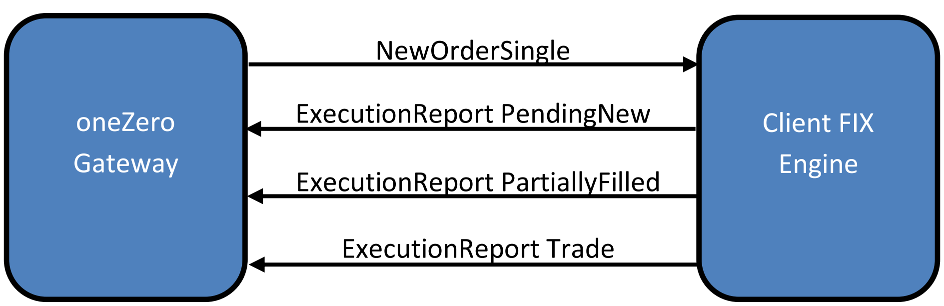
Summary

Once connected to the oneZero External FIX API Trade Session, oneZero will request a trade by sending a NewOrderSingle (D). The client will respond immediately with an ExecutionReport (8) with an ExecType (150) of PendingNew (A). An order never made working due to credit or other failures will receive an ExecType Rejected (8). In the case an order is partially filled, individual ExecutionReports must be sent for EACH partial fill with OrdStatus (39) PartiallyFilled (1). Once an order is completely filled, an ExecutionReport with ExecType Fill (2) must be sent. In the case the order times out, or is canceled by oneZero an ExecutionReport with ExecType Canceled (4) must be sent. The CumQty (14) field in the Canceled report will reflect any partial fills that happened for the canceled order.

If oneZero wishes to cancel the processing of a trade, an OrderCancelRequest (F) will be sent. If the order cannot be canceled, an OrderCancelReject (9) must be sent by the client in response. Alternatively, the client FIX API will return an ExecutionReport with type Canceled (4) once the order completes, with any filled quantity indicated as described above.

Messaging Sequence

- oneZero Sends NewOrderSingle (D).
- The client responds with ExecutionReport (8) with ExecType (150) set to PendingNew (A).
- The client responds with 0..n ExecutionReport(s) with OrdStatus (39) set to PartiallyFilled (1) and ExecType (150) set to Trade (F).
- The client responds with an ExecutionReport with ExecType set to:
    - Trade (F) for a completed order.
    - Canceled (4) for a cancelled order.
    - Rejected (8) for a rejected order.



Order Type / Time In Force Chart

The following chart outlines the order and time-in-force types that can be supported by the client.

	Immediate Or Cancel (IOC)	Fill Or Kill (FOK)	Good Till Cancel (GTC)
Market	Supported	Supported	Supported

Limit	Supported	Supported	Supported
Previously Quoted	Supported	Supported	Unsupported

NewOrderSingle

A NewOrderSingle (D) is sent by oneZero to the client to submit an order for execution.

Note: See Quote Session Messaging – Summary – Quote IDs section above for additional information about quote identification.

NewOrderSingle (35=D)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
1	Account	N	-	String	User defined account name. For retail systems, should be a unique identifier for the underlying trader. For individual traders, can be set to any value or omitted.
11	ClOrdID	Y	-	String	An ID for the trade. Will be universally unique across all prior trading sessions.
21	HandlInst	Y	1	Int	1 = "Automated execution order, private, no Broker intervention"
55	Symbol	Y	-	String	The symbol (in CCY1/CCY2 format for FX) from a previous MarketDataRefresh.
54	Side	Y	1 or 2	Int	The side (buy or sell) of the request. • 1 = Buy • 2 = Sell
38	OrderQty	Y	-	Qty	Order amount (FX, CCY1 amount)
40	OrdType	Y	1, 2, or D	Int	Enumeration for the Type of Order. • 1 = Market • 2 = Limit • D = Previously Quoted
44	Price	C	-	Price	**Conditionally required** based on OrdType. • OrdType=1 (Market): Never sent • OrdType=2 (Limit): Required and set to the limit price • OrdType=D (Previously Quoted): Required and set to the price of the quote being traded on
117	QuoteID	C	-	String	The ID of a previously quoted symbol to use for this trade for PREVIOUSLY QUOTED orders.
58	Text	N	-	String	User comment field.

59	TimeInForce	Y	1, 3, or 4	Int	Enumeration of order duration. • 1 = Good Till Cancel (GTC) • 3 = Immediate Or Cancel (IOC) • 4 = Fill or Kill (FOK) FOK will not be set for OrdType = PREVIOUSLY QUOTED.
60	TransactTime	Y	-	Time	Time of order creation in UTC format.
453	NoPartyIDs	N	1	Int	Used to identify and convey underlying trader information related to the order. Supported for version 1.4.0 and later. When specified, must have a value of 1.
=> 448	PartyID	Y	-	String	Identifies the underlying trader.
=> 447	PartyIDSource	Y	D	String	Identifies the class the underlying trader. Will always be “D” – Proprietary.
=> 452	PartyRole	Y	3	Int	Identifies the role of the party ID. Will always be ‘3’ – Client ID.
<Standard Trailer>					

ExecutionReport

An execution report message is sent by the client to oneZero in response to a NewOrderSingle (D). The execution report will be used for one of the following:

- confirm the receipt of an order,
- confirm changes to an existing order (i.e. accept cancel and replace requests),
- relay order status information,
- relay fill information on working orders,
- relay fill information on tradeable or restricted tradeable quotes reject orders,
- or report post-trade fees calculations associated with a trade.

ExecutionReport (35=8)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
1	Account	N	-	String	User defined account name. For retail systems, should be a unique identifier for the underlying trader. For individual traders, can be set to any value or omitted.
11	ClOrdID	Y	-	String	The ClOrdID sent by oneZero in the corresponding NewOrderSingle message.
37	OrderID	Y	-	String	Unique ID for the order

					assigned by the client.
17	ExecID	Y	-	String	A unique ID for the ExecutionReport assigned by the client.
39	OrdStatus	Y	1, 2, 4, or 8	Int	Describes the current state of the order corresponding to this execution report. A=Pending New (Received) 1=Partially Filled (Open, with some fills but is not completely filled) 2=Fill (Completely Filled) 4=Canceled (Cancelled, can have fills but is not a complete fill.) 8=Rejected (Rejected, no fills)
150	ExecType	Y	A, 4, 8, or F	Int	The enumerated type of this ExecutionReport: A=Pending New (Received) 4=Canceled (Cancelled, can have fills but is not a complete fill.) 8=Rejected (Rejected, no fills) F = Trade (this report indicates a full or notification of partial fillled volume)
55	Symbol	Y	-	String	The symbol (in CCY1/CCY2 format for FX) from the original request.
54	Side	Y	1 or 2	Int	The side (by or sell) of the original request. • 1 = Buy • 2 = Sell
38	OrderQty	Y	-	Qty	Original order quantity. Does not indicate a filled amount, only for reference.
40	OrdType	Y	1, 2, D	Int	Enumerated Order Type from the original request. For reference: 1 = Market 2 = Limit D = Previously Quoted
44	Price	N	-	Price	The original requested price for the order.
59	TimeInForce	Y	1, 3, or 4	Int	Enumeration of order duration for the original request. 1 = Good Till Cancel (GTC)

					3 = Immediate Or Cancel (IOC) 4 = Fill Or Kill (FOK)
31	LastPx	N	-	Price	If ExecType is Trade, this will be set to the price of the fill.
32	LastQty	N	-	Qty	If ExecType is Trade, this will be set to the quantity bought or sold.
151	LeavesQty	Y	-	Qty	The remaining quantity to fill from the original requested amount.
14	CumQty	Y	-	Qty	The total quantity filled for original request, including this fill.
6	AvgPx	Y	-	Price	The Average Price of all fills for this request, including this fill. This will be 0 if ExecType is Pending New.
64	SettlDate	N	-	Date	If ExecType is Trade, this will be set to the UTC Settlement Date for the fill in YYYYMMDD format.
75	TradeDate	N	-	Date	If ExecType is Trade, this will be set to the UTC Trade Date for the fill in YYYYMMDD format.
103	OrdRejReason	N	-	Int	The reason the order was rejected, if ExecType is Rejected.
58	Text	N	-	String	If ExecType is Rejected or Canceled, and the reason is known, will be set to a text explanation of the reason .
60	TransactTime	N	-	Date	Time of the original order creation in UTC Format. Not sent when ExecType is Pending New
382	NoContraBrokers	N	> 0	Int	Number of ContraBroker repeating instances to follow. If specified, must be > 0.
=> 375	ContraBroker	C	-	String	Name of the underlying trade counterparty. Required if NoContraBrokers > 0, in which case it must be first field in the repeating group.
=> 437	ContraTradeQty	N	-	Qty	Quantity of the trade attributable to the

					ContraBroker specified in tag 375.
=> 655	ContraLegRefID	N	-	String	The trade ID of the trade attributable to the ContraBroker specified in tag 375.
=> 8890	OZContraTradePrice	N	-	Price	Price of the trade attributable to the ContraBroker specified in tag 375.
<Standard Trailer>					

OrderCancelRequest

An OrderCancelRequest (F) is sent by oneZero to the client to request the cancelation for all of the remaining quantity of an existing order.

OrderCancelRequest (35=F)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
1	Account	N	-	String	User defined account name. For retail systems, should be a unique identifier for the underlying trader. For individual traders, can be set to any value or omitted.
41	OrigClOrdID	Y	-	String	The ClOrdID from the original order the client wishes to cancel.
11	ClOrdID	Y	-	String	A unique ID to identify this cancel request specifically.
54	Side	Y	1 or 2	Int	The side (buy or sell) of the request. 1 = Buy 2 = Sell
60	TransactTime	Y	-	Date	Time this order request was initiated/released by the trader or trading system.
<Standard Trailer>					

OrderCancelReject

An OrderCancelReject (9) is sent by the client to oneZero in response to an OrderCancelRequest (F) that cannot be honored.

OrderCancelReject (35=9)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
1	Account	N	-	String	User defined account name. For retail systems, should be a unique identifier for the

					underlying trader. For individual traders, can be set to any value or omitted.
37	OrderID	Y	-	String	A Unique Order ID assigned to the original accepted order by the FIX Engine. Will be ‘NONE’ if CxlRejReason=1
41	OrigClOrdID	Y	-	String	The ClOrdID from the original order the client wishes to cancel
11	ClOrdID	Y	-	String	The unique ID to identify the originating cancel request.
39	OrdStatus	Y	-	Int	Enumeration indicating the status of the order that was attempted canceled.
102	CxlRejReason	Y	0 or 1	Int	Enumeration indicating the reason why the cancel was rejected. 0=TooLateToCancel – Order has already been canceled or filled. 1=UnknownOrder – Order ID not found in FIX engine.
434	CxlRejResponseTo	Y	-	Int	Enumeration indicating the type of request this reject is in response to.
60	TransactTime	Y	-	Date	The time the last action on the order was transacted.
<Standard Trailer>					

Corporate Actions

Summary

The oneZero External FIX API supports the processing of Corporate Actions within the Trade Session. The supported corporate actions are Contract for Difference (CFD) Dividends and CFD Splits.

SecurityStatus

A SecurityStatus (f) is sent by the client to oneZero to report changes in status of a security. The CorporateAction (292) must be either CFDDividends (A) or CFDSplits (J).

SecurityStatus (35=f)					
Tag	**Field Name**	**Required**	**Value**	**Type**	**Comments**
<Standard Header>					
55	Symbol	Y	-	String	The symbol (in CCY1/CCY2 format for FX) for the corporate action.
292	CorporateAction	Y	A or J	MultipleValueString	Currently required to be either “A” for CFD Dividends or “J” for CFD Splits.
15	Currency	C	-	Currency	Required for 292=“A”, will be the currency of the dividend.
332	HighPx	C	-	Price	Required for 292=“A”, will be the Long Dividend.
333	LowPx	C	-	Price	Required for 292=“A”, will be the Short Dividend.
330	BuyVolume	C	-	Qty	Required for 292=“J”, will be the Result Shares for a CFD Split
331	SellVolume	C	-	Qty	Required for 292=”J”, will be the Initial Shares for a CFD Split
10001	Liquidate Fractional Shares	C	0 or 1	Boolean	Required for 292=“J”. 0 = Round Fraction. 1.4->1.0, 1.5->2.0 1 = Liquidate Fraction. 1.6->1.0, 0.6 is paid out at top of book prices from the side the client executed on.
58	Text	N	-	String	The comment for the

					corporate action
<Standard Trailer>					