CBOE Application Programming Interface

CBOE FIX 4.2 Version 9.0 - Release Notes

Provides an overview of the updates and changes to the FIX 4.2 with this version release.

CBOE PROPRIETARY INFORMATION

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Front Matter

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Support and Questions Regarding This Document

Questions regarding this document can be directed to The Chicago Board Options Exchange at 312.786.7300 or via e-mail: api@cboe.com.

The latest version of this document can be found at the CBOE web site http://systems.cboe.com.

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Overview

The material presented in this document highlights the upcoming changes for the new release of the FIX 4.2 API, Version 9.0. Documentation changes are detailed in the sections below. Your feedback or questions regarding this document should be sent to API@cboe.com

FIX 4.2, V9.0 Highlights

The upcoming CBOEdirect software release supports a new mechanism for entering orders that makes order entry light and rapid. Customers can use this interface in lieu of quotes to take the added advantages of tiered quoting as well as one sided quoting.

Light Orders

Light order entry is accomplished by minimizing the order message size and by lessening the order status reports sent to the FIX user. FIX users will have to map to a new User Defined Field (UDF) in the Logon message to specify whether to enter light orders, regular orders or both.

Logon Message

The existing Logon message, *MsgType[35]* = A, will be modified to include a new UDF, OrderTypeLogonIndicator [9318]. FIX users will have to map to OrderTypeLogonIndicator [9318] to specify whether the user will send light orders, regular orders or both. The values are as follows:

> 0 = will specify ONLY light orders
>
> 1 = will specify ONLY regular orders
>
> 2 = will specify both light and regular orders

Without specifying OrderTypeLogonIndicator [9318], CBOE will assume that the user will only send in regular orders.

Logon Message

Tag	Field Name	FIX Req'd	CBOE Req'd	Comments
	Standard Header	Y	Y	*MsgType[35] = A*
				Header fields SenderSubID[50] and TargetSubID[57] are required.

Tag	Field Name	FIX Req'd	CBOE Req'd	Comments
50	*SenderSubID*	Y	Y	For Logon *(MsgType=***A***)* must contain: *UserId:Password:LogonType* Where: *UserID* – is the CBOE assigned user id *Password* – is the CBOE assigned password *LogonType* – is an optional logon type of "**PRI"** for Primary (default) or "**SEC"** for Secondary logon. Most firms should use the default. Contact the CBOE API relations team if you feel your application warrants use of multiple logins. Note: FIX user IDs (SenderSubId) may not establish multiple user sessions using the same ID.
57	*TargetSubID*	Y	Y	For Logon (*MsgType=***A***): Used to specify the type of environment either "TEST", "PROD" If you require order status to be published immediately following successful logon you must append: ":WITHORDERPUBLISH" after the *Environment.* The default behavior for Version 2.0 is to NOT publish order status upon logon. If you would like to handle SecurityStatus messages in the compact mass message format, you must append: ":COMPPRODSUB" after the *Environment*. To compress fill report messages, you must append: ":COMPFILLRP" after the *Environment*. To compress ExecID [17], you must append: ":COMPEXECID" after the *Environment*. CBOE will publish an ExedID[17] field that will be a maximum of 30 characters. To participate in Market Maker Hand Held trade functionality and notifications, you must append: ":MMHH" after the environment.
98	EncryptMethod	Y	Y	CBOE does not support encryption at this time.
108	HeartBtInt	Y	Y	This tag is the heartbeat interval in seconds. It is determined by the user at login time. The firm's heartbeat interval should be greater than 5 seconds. If the user fails to respond to 3 test requests following missed "heartbeats", CBOE will log out the user.
95	RawDataLength	N	N	Not used

Tag	Field Name	FIX Req'd	CBOE Req'd	Comments
96	RawData	N	N	Not used
141	ResetSeqNumFlag	N	N	CBOE *does not* support this tag.
9003	*UDFSupportIndicator*	*N*	*Y*	Possible values: 0 = Does not support UDF messages 1 = Supports UDF in messages 2 = Supports UDF in repeating groups in all messages 3 = Supports UDF in repeating groups in Mass Quote Message 4 = Supports UDF in repeating groups in Market Data Message Firms that plan to enter orders only (no quote entry or market data) may leave this tag out of the Logon message. However CBOE requires this tag for quote entry and market data. On trading FIX Engines (non CFIX engines), only 9003=3 will be supported and the logon will be rejected if 9003 is set to 4. For Logons to the CFIX engines, only 9003 = 4 will be supported and the logon request will be rejected if the tag 9003 is set to 3. Also this would mean that firms doing Market Data via CFIX should have CFIX as their first engine instead of the trading engine.
9191	*SuppressOrderStatus*	*N*	*Y*	Users can request the suppression of certain types of Execution Reports through the use of this tag. This tag can have multiple comma-separated values. Valid values are the same as OrdStatus[39]. Status of the order. **Options and Futures**: 0 = New 1 = Partially filled 2 = Filled 3 = Done for day 4 = Canceled 6 = Pending Cancel/Replace A = Pending New
9192	*ConcurrentOrder/QuoteIndicator*	*N*	*N*	This field is optional. It is used to select the usage of the concurrent threading model. Valid values are: 1=Enable concurrent quote Model 2=Enable concurrent order Model 3=Enable both concurrent order and quote model
9318	*OrderTypeLogonIndicator*	*N*	*N*	This field specifies what order type will be sent to CBOE. Valid values are: 0 = Only Light orders 1 = Only Regular orders 2 = Both Light and Regular orders Without specifying this field, the system will assume that the user will only send in regular orders.
	Standard Trailer	*Y*	*Y*	*Per standard.*

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Logon Message Example

[8=FIX.4.2|9=93|35=A|49=FF10|56=DFIX201|34=54|50=SUN:SUN|57=TEST|52=20101223-
16:42:32.561|98=0|9318=0|108=30|10=210|]

Light Order Entry

Firms will use the FIX New Order—Single Message, *MsgType[35]* = D, to transmit light orders
to CBOE Markets. The UDF, LightOrderIndicator [9317], has been created to specify light order
entry.

Table 1 New Order—Single Message

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
	Standard Header	Y	Y	*MsgType[35]* = D
11	ClOrdID	Y	Y	AAA9999 – 3 character branch followed by 4 character sequence number
55	Symbol	Y	N	N/A – Symbol required per FIX protocol but we would ignore this field.
48	SecurityID	N	Y	SecurityId(Product Key) must be specified.
54	Side	Y	Y	1 = Buy 2 = Sell
38	OrderQty	N	Y	Quantity specified on the original request message from the firm.
40	OrdType	N	Y	Refer to Contingency Mapping Table for information on which order types are supported in which CBOE markets.
44	Price	N	Y	Price per contract
47	Rule80A	N	Y	**Options, Futures and Stock**: Can be used to specify the order capacity (order origin) as an alternative to CustomerOrFirm[204]. Must be used instead of CustomerOrFirm[204] for values other than Firm, Customer, MarketMaker. See the section entitled *"Specify the order capacity (origin) on an order."*
77	OpenClose	N	Y	**Options and Futures**: Possible values: "O" or "C" ("N" is not supported by FIX). If OpenClose is not specified, the effect will be the same as "Not Applicable." Required for all origins except M, N and I. For M and N orders, required in Restricted Series.
386	NoTradingSessions	N	Y	Used to specify the number of trading sessions – at this time 1 and only 1 trading session must be specified for each order.
Begin Repeating Group for NoTradingSession				
336	→TradingSessionID	N	Y	No more than one TradingSessionID must be specified on each order: CBOE trading floor: 'W_MAIN' Stock Trading On CBOEdirect: 'W_STOCK'

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
End Repeating Group				
	CBOE Custom Fields			
9317	LightOrderIndicator	N	Y	Must be 1
9321	SecondaryClOrdID	N	N	8 character user generated Id
	Standard Trailer	Y	Y	

Light Order Entry Example

8=FIX.4.2|9=206|35=D|49=FF10|56=DFIX201|34=112|50=SUN:SUN|57=TEST|52=20101220-15:33:48.571|11=AAA0007|21=1|55=[N/A]|48=941681779|54=1|60=20101220-15:33:48.571|38=10|40=2|77=C|9317=1|386=1|336=W_MAIN|47=C|9321=MAGIC|44=1.9|10=145|

Light Order New Execution Report

The Execution Report is the normal message that is provided in response to messages received from a firm by CBOE. The Execution Report is used to respond to new orders, cancel requests, cancel replace requests and order status requests. For light orders, new Execution Reports will not be sent if the order is filled or cancelled right away. In these cases, CBOE will only send the fill or cancel reports. New UDFs, PendingFillQty [20102] and PendingCxlQty [20103], will provide this information.

Light Order New Execution Report

Tag	Field Name	Comments
	Standard Header	*MsgType[35]* = 8
37	OrderID	Will be set to the CBOE OrderID which is of the form highCBOEId:lowCBOEid.
11	ClOrdID	Format: `AAA9999-YYYYMMDD`.
17	ExecID	Each execution report will contain a unique ExecID to identify the message.
20	ExecTransType	This value will always = 0 (new).
150	ExecType	0 = New
39	OrdStatus	0 = New
55	Symbol	Will be the same value as entered in the order
48	SecurityID	CBOEdirect product key
54	Side	Will be the same value as entered in the order
151	LeavesQty	Quantity open for further execution.
14	CumQty	For options and futures this refers to the total number of contracts filled on the order during the life time of the order.

Tag	Field Name	Comments
6	AvgPx	CBOEdirect does not calculate this value. Will always be 0.00.
	Custom Defined Fields	
9321	SecondaryClOrdId	8 character user generated Id
20102	PendingFillQty	If the order is filled right away this field will be filled with the fill quantity and will be followed by a normal fill report
20103	PendingCxlQty	If the order is cancelled right away this field will have the cancelled quantity and a cancel report will follow this.
	Standard Trailer	

Light Order New Execution Report Example

8=FIX.4.2|9=0201|35=8|57=SUN:SUN|34=68|49=DFIX201|56=FF10|52=20101220-15:33:49|37=66134:800671071|11=AAA0007|17=2081c834c50b37|20=0|39=0|55=[N/A]|48=941681779|54=1|14=0|6=0|60=20101220-15:33:49|150=0|151=10|9321=MAGIC|10=088|

Light Order Cancel Request

Firms use the FIX Order Cancel Request, *MsgType [35] = F,* to cancel all of the remaining quantity of a light order that has been entered using FIX 4.2. For light order cancel requests, a pending cancel message will not be sent to the user. The cancel report will confirm that the entire order has been completely cancelled. Cancel/Replace requests are not supported for light orders.

Light Order Cancel Request Message

Tag	Field Name	FIX Req'd	CBOE Req'd	Comments
	Standard Header	Y	Y	MsgType[35] = F
11	ClOrdID	Y	Y	AAA9999 – 3 character branch followed by 4 character sequence number.
41	OrigClOrdID	Y	Y	ClOrdID of the order that the firm wishes to cancel
55	Symbol	Y	N	N/A
9321	SecondaryClOrdId	N	N	8 character user generated Id
9317	LightOrderIndicator	N	Y	Must be 1
54	Side	Y	Y	Must be the same as specified on the original order request.
20104	TradingSessionID	N	Y	Trading Session
48	SecurityID	N	Y	SecurityId(Product Key) must be specified.
	Standard Trailer	Y	Y	

Light Order Cancel Report Message

Tag	Field Name	Comments
37	OrderId	Will be set to the OrderID from CBOE
11	ClOrdId	From the original order

Tag	Field Name	Comments
17	ExecId	Unique serial number derived by CBOE
20	ExecTransType	Identifies transaction type. 0 = New
39	OrdStatus	4 = Cancel
55	Symbol	N/A
48	SecurityId	SecurityId(Product Key)
54	Side	Same as specified on the original order request.
14	CumQty	Total number of contracts filled.
6	AvgPx	Calculated average price of all fills on this order
150	ExecType	Describes the execution type
151	LeavesQty	Remaining quantity
84	CxlQty	Quantity cancelled.
9321	SecondaryClOrdId	8 character user generated Id

Light Order Cancel Request Example

8=FIX.4.2|9=180|35=F|49=FF10|56=DFIX201|34=319|50=SUN:SUN|57=TEST|52=20101220-17:25:29.536|11=ABC0022|41=AAA0021|55=[N/A]|9321=MAGIC|9317=1|60=20101220-17:25:29.536|54=1|20104=W_MAIN|48=941681779|10=078|

Light Order Cancel Report Example

8=FIX.4.2|9=0206|35=8|57=SUN:SUN|34=75|49=DFIX201|56=FF10|52=20101220-15:37:11|37=66134:800671071|11=ABC0008|17=2081c834c50b38|20=0|39=4|55=[N/A]|48=941681779|54=1|14=0|6=0|60=20101220-15:37:11|150=4|151=0|84=10|9321=MAGIC|10=052|

Document Changes

FIX-01

- No changes

FIX-03a

- Modified the existing Logon message, *MsgType[35] =* A, to include a new UDF, OrderTypeLogonIndicator [9318]

FIX-03b (Including Tag Dictionary)

- Added the new UDFs below based on this release.

  - LightOrderIndicator[9317]

- TradingSessionID[20104]
- OrderTypeLogonIndicator[9318]
- PendingFillQty[20102]
- PendingCxlQty[20103]

FIX-03c

- Based on this release, a new section was added called "Creating and Submitting Light Orders using the New Order Single Message (MsgType=D)."

- Added a section named "Considerations for Light Orders" that includes:

  o Cancel Replace of Light Orders are not supported.
  o Partial cancels are not supported.
  o Origin codes that correspond to quote-like orders (e.g. "I") are not allowed for Light Orders.
  o Bust Reinstate of Light Orders is not supported.
  o Light Orders are supported for both options as well as stocks.
  o Cancel Requests for light orders are supported.
  o Market Orders are not allowed.
  o Light Orders are always treated as *DAY* orders.
  o The only contingency that is allowed is *IOC*.
  o Light Orders are not allowed on BOB classes.
  o Light Orders are not allowed on restricted series.
  o All Light Orders for a user will be canceled on logout.
  o Light Orders are not auction eligible. Also, Light Orders cannot be used to respond to auctions. However, Light Orders can possibly end an auction just like regular orders.
  o Light Orders are NBBO protected only if the NBBO protected flag is set to true in the incoming order.
  o Light Orders are never linked away. The order will be canceled if another exchange is at a better price and the NBBO protection is ON.
  o Light orders must be included in the opening and as part of the opening trades. If any remaining light orders would normally go through HALO, they still should as long as they are marked as NBBO protected. Light Orders that are not filled in HALO must not be routed away; instead they must be cancelled. Light Orders that are not marked as NBBO protected must be cancelled rather than go through HALO.

- New sections and examples were added for light order execution reports, cancel requests and cancel reports.

FIX-03d

- No changes.

FIX-06

- No changes

FIX-07

- No changes