CBOE FIX Protocol Support

Version 9.0.2

Volume 3C: Order Routing

Programmer's Guide to order routing using the CBOE FIX 4.2 Service

CONFIDENTIAL
CBOE Proprietary Information

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Document #**[FIX-03C]**

Production Release

Front Matter

Disclaimer

Change Notices

The following change notices are provided to assist users of the CBOE FIX Services in determining the impact of changes to their applications.

Date	Version	Description of Change
15 July 2011	9.0.2	-Added a new message type for Light Order Cancel Replace Request (MsgType[35]=G) -Included the contingency, Wash Trade Prevention (WTP), in the Contingency Mapping table
29 April 2011	9.0.1	-Removed references of M and N order from ClearingOptionalData[9324] -Updated the Quote Processing section -Added LastMkt[30] to the Fill Report message.
04 Mar 2011	9.0	Included UDF PriceProtectionScope[9369] in the following message types: New Order-Single Message (MsgType=D), Order Cancel Replace Request (MsgType=G) and Execution Reports (MsgType=8) PriceProtectionScope[9369] is an existing UDF that has been added to the above message types for clarification of usage.
14 January 2011	9.0	Created a new section for "Creating and Submitting Light Orders using the *New Order- Single Message (MsgType=D)"*
17 Aug 2010	7.0	Added new exchange identifier for C2, C2OX
08 Jan 2010	7.0	-Updated ClearingOptionalData[9324] with A:AIQ -New tag for Short Sale Marking, "ShortSaleIndicator[20101]" -Added new CBSX order contingency types
12 Oct 2009	6.1	Added new contingency: Do Not Route
02 Sept 2009	6.1	Added new CBSX order contingency types
14 August 2009	6.1	New section for adding and deleting floor trades using the new 'user defined' message types: AddFloorTrade (35=U01) and DelFloorTrade (35=U02)
22 May 2009	6.0	-Added a new section for CBOE 2 (C2) -Updated the *New Order- Single Message (MsgType=D)* to include support for Directed AIM

Date	Version	Description of Change
		-Added a new section for Directed AIM examples -Modified tags, 55, 167, 200, 205, 201 and 202 to be required.
11 Feb 2009	5.3	Added information for order origin "W" (Voluntary Professional, non-Broker Dealer)
05 Jan 2009	5.3	Correction to Time In Force[18] for Intermarket Sweep Orders (ISO) and Intermarket Sweep Book (ISB)
25 Nov 2008	5.3	Added a new UDF, BrokerRoutingID[6818] Added a new order contingency type, Intermarket Sweep Book (ISB) to FIX tags, ExecInst[18] and OrdType[40] Add a new Order Processing section to describe the concurrent thread model.
03 Oct 2008	5.2	Updated ExDestination [100] New value for AuctionContingency[9384]
29 Aug 2008	5.1	Updated OrderOrigin [tag 9465] to include changes for CBSX J and K orders.
23 July 2008	5.1	Updated the Execution Report section to include changes for orders that open positions for restricted series
15 May 2008	5.0	Updated the Order Origin codes table for ONE and CFE to include "V"
24 April 2008	5.0	Add a new section for Too Late to Cancel scenarios
07 March 2008	5.0	Added a new section for AIM AON
29 February 2008	5.0	-New functionality for internatlization and automated auctions for strategy orders - New value for AuctionContingency [9384], STOCK_ODD_LOT_NBBO_ONLY=24
18 January 2008	4.2.4	-Updated the details for SAL and HAL -Removed all references to RAES -Added reference to FIX-03b for Business Reject Messages -Added two new TradeLiquidityIndicator [9730] type
20 November 2007	4.2.3	Updated Contingency Mapping table for Reserve order to include "MaxFloor(111) must be specified" in the Other column
02 November 2007	4.2.3	-Removed Stock reference from UDF, TradeLiquidityIndicator [9730] -Updated the values for OrdStatus[39] -Added section: Important considerations for cross-product strategy orders -Added a section for Drop Copies
09 July 2007	4.2.2	Added a table for entering a pair of cross orders
01 June 2007	4.2.2	-Added a new UDF, TradeLiquidityIndicator [9730] -Included AuctionType, STOCK_NBBO_FLASH=6 -Updated ClearingOptionalData [9324] to allow the use of "NLTR"
23 February 2007	4.2.1	Added P and A order examples Included the new CBSX order limit: 100 orders per second Updated ExDestination [tag100] field
27 December 2006	4.2	Updated the section: "Specify the Order Capacity (origin) on an Order" to include CBSX origin codes
15 December 2006	4.2	-Updated the "Considerations for Internalization" section -Changed the heading "Creating and Submitted Stock

Date	Version	Description of Change
		order types ” to read: “CBOE Stock Exchange (CBSX)”
20 September 2006	4.1	Changed the FIX mappings for Stock order contingency types.
08 September 2006	4.1	Updated the OrdType [tag 40] to include Stock order contingency types
25 May 2006	4.0	Added order rate limitations Referenced the acronym AIM Included a new section: Outbound Message Sequences (from CBOE)
06 Jan 2006	3.2b	Added information for COF_MAIN Added details for AuctionType SAL
12 Aug 2005	3.2	-Updated the Clearing section -Added tag 654 [LegRefId] to the Strategy Order Enty Method 2
29 Jul 2005	3.2	-Added additional information for PDPM -Updated “Special Considerations for CFE Orders” section -Added tags 9380 and 9381 to the New Strategy Order—Single Message -Updated Clearing section
08 Apr 2005	3.1a	Document Errata Release
30 Nov 2004	3.1	Document updates for preferred DPM, internalization and automated auction
04 Oct 2004	3.0b	Version Changes
21 Sept 2004	3.0a	Added one-step strategy cancel replace example and info
21 July 2004	3.0a	Documentation Update
18 June 2004	3.0	API Enhancements
28 April 2004	2.52	Version Changes
06 February 2004	2.63	Support added for the CBOE Futures Exchange (CFE) and Stock Trading On CBOEdirect (STOC)
08 July 2003	2.51	Documentation Errata Release
23 Apr 2003	2.5	Hybrid Trading
24 Jan 2003	2.1	Options Linkage added to documents.
07 Oct 2002	2.01a	Errata release for CBOEdirect 2.0 that includes specifications for order routing through the Options Linkage Authority.
22 Apr 2002	2.0	Production Release
22 Feb 2002	2.0b	Moved order routing from volume FIX-03A to this volume. Moved contents on market making from FIX-03C to FIX-03D.
15 Feb 2002	2.0a	Specified changes to customer order type, completed FAQ questions, expanded examples.
01 Feb 2002	2.0	Preliminary documentation for Version 2.0 of FIX 4.2 for CBOEdirect 2.0. Support for order routing to the floor, complex orders, book depth subscription.
15 Nov 2001	1.0b	Errata
27 July 2001	1.0a	Production Version
15 Mar 2001	1.0	Corrected errata
07 Feb 2001	0.5	Correction to specification of the Order Cancel Request message

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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About This Document

Purpose

This document is intended to provide information and guidance on how to route orders to the FIX 4.2 service to access the CBOEdirect System, which includes the ability to route orders to the OneChicago Exchange (ONE) and the CBOE Order Routing System, providing access to existing open outcry markets.

Intended Audience

Management requiring a deeper technical understanding of CBOE's support for FIX 4.2 in making decisions on how best to participate in CBOE markets and developers of applications that will use the FIX 4.2 service to communicate with CBOE markets.

Related Documents

Document Number	Document Description
FIX-RELNOTES	CBOE FIX Release Notes Version 2.0
FIX-ROADMAP	CBOE FIX Document Road Map
FIX-01	CBOE FIX Volume 1: Overview & Concepts
FIX-03A	CBOE FIX Volume 3A: FIX 4.2 Programmer's Guide: FIX Session Layer
FIX-03B	CBOE FIX Volume 3B: FIX 4.2 Programmer's Guide: Application Layer: Fundamentals and Field (Tag) Dictionary
FIX-03C	CBOE FIX Volume 3C: FIX 4.2 Programmer's Guide: Order Routing
FIX-03D	CBOE FIX Volume 3D: FIX 4.2 Programmer's Guide: Market making
FIX-06	CBOE FIX Volume 6: FIX 4.2 Certification Guide
FIX-07	CBOE FIX Volume 7: FIX 4.2 CBOE Market Data FIX Engine (CFIX)
NET-01	CBOE Network Connectivity Guide
	Financial Information Exchange Protocol (FIX) Version 4.2 (http://www.fixprotocol.org)
	Financial Information Exchange Protocol (FIX) Version 4.3 (http://www.fixprotocol.org)

Usage and Conventions

The FIX 4.2 Specification contains definitions for all standard FIX messages and tags. With the exception of the Tag Dictionary, the standard definitions for FIX messages have been omitted from this document. This was done for brevity and to not obscure the text describing CBOE's particular implementation of a message or a tag. In the Tag Dictionary, the standard definition is provided next to CBOE's usage.
Fields that follow the FIX standard and are not subject to any CBOE specific constraints are denoted with the phrase "**Per standard.**"
Fragments of FIX messages are shown in the courier new font. The ^ is used to represent the FIX field separator (ASCII 01).

```
55=IBM^48=1237^167=OPT^200=200010^201=0^202=105.00^207=W^
```

FIX Tags are shown are presented by name in italics followed by the tag number in brackets [].
SecurityType[167]
Symbol[55]

Firms should put the repeating group tags in exactly the same order as they appear in the FIX Specification. This will become a requirement for FIX 4.3.

Order Routing

Once a FIX Session is established, you can begin to send in *FIX New Order – Single* Messages to place orders for products traded on CBOE and OneChicago markets. Once an order has been created using FIX 4.2, *Order Cancel Requests and Order Cancel Replaces* can be submitted. CBOEdirect will respond with *Execution Report messages*, or in the event of an invalid *Order Cancel Request* or *Order Cancel Replace Request*, an *Order Cancel Reject* message will be sent.

Summary of order routing messages used by CBOEdirect

Inbound from the firm:

• New Order—Single (*MsgType[35]* = D)	Submit new single-leg and multi-leg orders
• New Order – List (*MsgType [35]* = E)	Submit paired orders
• Order Cancel Request (*MsgType[35]* = F)	Fully cancel an existing order
• Order Cancel/Replace Request (*MsgType[35]* = G)	Replace order to change quantity, price, order type, non-trading information on order.
• Order Status Request (*MsgType[35]* = H)	Request status on existing orders
• Quote Request (*MsgType[35]* = R) (RFQ)	Request for a two sided quote

Outbound from the market:

• Execution Report (*MsgType[35]* = 8)	Sent to the firm from the market to acknowledge new orders, report partial fills, fills, cancellation, nothing dones
• Order Cancel Reject (*MsgType[35]* = 9)	Used to reject an invalid Order Cancel/Replace Request or Order Cancel Request.

Option and futures strategies that have been defined within the CBOEdirect system using a *Security Definition Request (MsgType[35]=d)* can be traded.
The CBOEdirect system supports only a subset of the possible FIX contingency order types. The **Contingency Mapping Table** provided in this document elaborates this mapping.
CBOE FIX 4.2 Service has added additional enumerations for *OrdRejReason[103]* that eliminates the need to ever send a Reject Message or a Business Reject Message in response to a properly formatted order request message.

Caveat: Any additional, optional FIX fields not specified within this specification that are supplied on any firm request messages will be ignored by the CBOE FIX 4.2 service. These unsupported fields will not be carried through the system. This means that the unsupported fields will not be sent into the market, nor will any unsupported fields be reported back to the firm on Execution Reports.

Unsupported FIX 4.2 Order Handling Semantics

CBOEdirect Order Cancel/Replace Request handling is not fully compliant with the FIX specification. In the event of a cancel replace - the order history from the cancelled part of the order is not carried forward to the new order.
The CBOEdirect FIX 4.2 Service does not support the reopening of a cancelled or filled order using a cancel replace request as permitted in the FIX 4.2 specification.

Order Processing

The FIX order and quote processing mechanism is multi-threaded on a class basis. All orders and quotes entered through FIX belonging to a specific class are queued up one behind the other on the same thread. This architecture is efficient for users who send in orders and quotes on a large number of classes. It is not efficient for a user who is quoting with orders or quotes on a few classes.

CBOE is enhancing its FIX order/quote threading mechanism to allow multiple concurrent quote and order messages up to a configurable limit. FIX users no longer have to choose to use the concurrent thread model through the user defined field,

ConcurrentOrder/QuoteIndicator [9192] in the *Logon Message (MsgType=A)*. The concurrent thread model is now the standard.

Outbound Message Sequences (from CBOE)

The CBOEdirect System that the CBOE FIX 4.2 Service is part of is a highly distributed system, and parts of it are asynchronous. It is important to be aware of the implications of this regarding Order Cancel and Order Cancel Replace processing. Specifically, both of those message flows, produce two Execution Report (MsgType[35]=8) messages per inbound request (to CBOE). One of the outbound messages will be encoded to show a "pending" status (see the Execution Report Tables for specifics), meaning that the CBOEdirect has acknowledged receiving the inbound message and has passed it on to be processed. The other outbound message will be encoded with the results of that processing. The examples in this document always show the messages outbound from CBOE to be in this "logical" order. Due to the distributed nature of the system, this sequence of outbound messages, though usual, cannot be guaranteed. It is possible that the "Result" Execution Report will arrive before the "Pending" Execution Report. This possibility should be taken into consideration when coding to use the CBOE FIX 4.2 Service.

Custom Defined Tags (User or CBOE Defined Fields)

FIX firms should never reject messages sent from the CBOE to the firm. If the firm receives messages from CBOE containing tags that the firm does not recognize (CBOE User Defined Tags or other), the firm should ignore the tag. The firm should not try to validate the unknown tag and reject CBOE's message. CBOE reserves the right to force logout any user that rejects a message sent from the CBOE to the firm.

Repeating Groups

It is important to stress that when repeating groups are involved, the order of the tags is significant. Additionally, only those tags documented as belonging to a repeating group should be used. If these guidelines are not followed, it is likely that the message will not be interpreted as desired; error responses may be misleading, and it is possible that some attribute values will not be processed.

Order Status Messages Upon Logon

A firm can optionally receive order status for all active orders after successful logon by appending ":WITHORDERPUBLISH" to the TargetSubID[57] field.
If the ":WITHORDERPUBLISH" option specified in the TargetSubID[57] field on the logon message, the firm will receive unsolicited Execution Reports with = ***Status*** for all orders currently maintained in the CBOEdirect Order Management System for that user upon successful logon.

WARNING: Be very careful in the usage of the WITHORDERPUBLISH feature, as there will be one Execution Report (MsgType[35]=8) message sent for each existing order (even if the order has been filled or canceled) each time you initiate a new FIX session. This can result in a significant time delay in a recovery (re-logon) situation.

CBOE 2 (C2)

The new CBOE exchange, CBOE 2 (C2) is a fully electronic options exchange supporting a maker-taker pricing model. C2 functionality is similar to the existing CBOE (W_MAIN). C2 has its own trading session, C2_MAIN, on CBOE*direct*. Firms will use the FIX *New Order—Single* message to transmit orders to C2. The following table compares key differences between W_MAIN and C2_MAIN.

Tag	CBOE (W_MAIN)	CBOE 2 (C2_MAIN)	Comments
18 [ExecInst]	Contingencies that are not accepted:	Contingencies that are not accepted:	In C2 'Not Held' orders must be ACCEPTED where

Tag	CBOE (W_MAIN)	CBOE 2 (C2_MAIN)	Comments
	-Not Held (NH)	-Minimum volume (MIN) -Market-if-Touched (MIT) -With Discretion (WD) -Midpoint Cross -Cross -Tied Cross -Autolink Cross -Autolink Cross Match -Cross_Within -Tied_Cross_Within	in the contingency is ignored and the orders are handled like a regular orders without any contingency.
336 [TradingSessionID]	W_MAIN	C2_MAIN	
207 [SecurityExchange]	W	C2OX	
9730 [TradeLiquidityIndicator]	Billing type indicators: Maker=A Taker=R Flash_Response=E Flash=F Cross=C Linked_AWAY=X Linked_AWAY_Response=L Opening=O ODD_LOT_FLASH=N ODD_LOT_RESPONSE=B	Billing type indicators: Maker=A Taker=R Flash_Response=E Flash=F Cross=C Linked_AWAY=X Linked_AWAY_Response=L Opening=O ODD_LOT_FLASH=N ODD_LOT_RESPONSE=B RESTING=Q CROSS_PRICE_IMP=S FLASH_PRICE_IMP=T FLASH_RESPONSE_PRICE_IMP=U MAKER_TURNER=V RESTING_TURNER=W	CBOE will be enhanced to include all the values in CBOE 2.

CBOE Futures Exchange (CFE)

The CBOE Futures Exchange (CFE) has its own trading session, CFE_MAIN, on CBOE*direct* to support the listing of futures. Firms use the FIX *New Order—Single* message to transmit futures orders to CBOE Markets.

CBOE Stock Exchange (CBSX)

The CBOE Stock Exchange (CBSX) has its own trading session, W_STOCK, on CBOE*direct* for equity trading.

Creating and submitting Stock order types

Stock trading on CBOEdirect has introduced new order contingency types, Intermarket Sweep orders (ISO), Reserve orders (also available for options in the W_MAIN session) and Cross orders. Firms can use the *FIX New Order- Single Message (MsgType=D)* to transmit ISO and Reserve orders.

INTERMARKET_SWEEP

Intermarket Sweep Orders are treated as IOC orders but will trade against the book without regard to the NBBO. Trades executed as a result of these orders are exempted from RegNMS trade-through rules. ISO orders may only be sent if the sender has simultaneously sent orders to any other markets with protected quotes priced better than the limit price on the ISO.

RESERVE

A reserve order has two quantities associated with it, order quantity and display quantity. Only the display quantity is visible as CBOE's book. The remaining quantity (order quantity - display quantity) is available to trade but not visible.

Firms can send Cross orders as a pair using the *New Order – List (MsgType=E)* or as two single orders via the *New Order-Single Message (MsgType=D).* When two single orders are used, the second crossing order must be received within a certain time interval of receiving the first crossing order. There can only be one resting Cross order for a particular product. Further, a cross order can only trade with another cross order of the same contingency type (i.e. a 'MIDPOINT_CROSS' will only trade with another 'MIDPOINT_CROSS' that has the same price, but opposite side). In all cases, the matching orders (if not arriving as a pair) have to arrive within a specified time otherwise the original cross order will be cancelled.

- Condition for cross order to trade: Same contingency, productKey & price; opposite side.
- Exception: AUTOLINK_CROSS trades with AUTOLINK_CROSS_MATCH

Below is a brief description of each cross type.

MIDPOINT_CROSS

Mid Point cross: These two orders can arrive as a pair (together) or one after the other. In either case they will need the same contingency. A mid-point-cross trades at the middle of current NBBO and will trade at ½ cent increments. Both orders must be for the same size.

CROSS

These two orders can arrive as a pair (together) or one after the other. In either case they will need the same contingency. If they are for the same price and size they will trade against each other immediately as long as the price is at or within CBOE's quote and the NBBO. If the trade price is equal to the CBOE's best market and the market includes public customer orders, the cross order must be: X shares or more; be for a dollar amount greater than or equal to $Y; and larger than any public customer interest at that price. Both orders must be for the same price and size and neither order will execute unless both orders are received.

TIED_CROSS (Currently unsupported)

Tied Cross: Similar to Cross orders except that they can trade at or better than CBOE's current market and NBBO trade through is allowed.

AUTOLINK_CROSS

Auto Link Cross is an order that will be Autolinked if CBOE is not the NBBO and the order is tradable at other markets. If there is remaining quantity, then this order will trade against an AutoLink_Cross_Match order (see below). Autolink_cross orders and autolink_cross_match orders can route in a single paired message or as two separate orders. Both orders must be for the same price but do not necessarily need to be for the same size. The autolink_cross order will not execute unless an autolink_cross_match order is received.

AUTOLINK_CROSS_MATCH

Users have to submit two orders for AUTOLINK crosses. One is AUTOLINK_CROSS and the second one is AUTOLINK_CROSS_MATCH. If away markets are better, then AUTOLINK_CROSS will first sweep away markets and the CBOE book. If there is still quantity remaining, then it will trade against the AUTOLINK_CROSS_MATCH.

CROSS_WITHIN (Currently unsupported)

The CROSS_WITHIN order shall trade at or better than the NBBO and within CBOE's market.

TIED_CROSS_WITHIN (Currently unsupported)

The TIED_CROSS_WITHIN contingency allows the order to trade through the NBBO and must trade within CBOE's market.

Creating and submitting an order using the *New Order Single Message (MsgType=D)*

Firms use the FIX *New Order—Single* message to transmit new orders to CBOE Markets. The limitations for orders as of 2/23/07 are:

Hybrid (in session W_MAIN)
- 30 orders per one (1) second period

CFE_MAIN (CBOE Futures Exchange) and **ONE_MAIN** (OneChicago)
- 30 orders per one (1) second period

W_STOCK (CBOE Stock Exchange)
- 200 orders per one (1) second period

A particular user session in CBOEdirect may only access one exchange at a time. For example, a single user may not send orders to CBOE options and CFE at the same time. The firm must use two separate user IDs: one will send orders to CBOE and one will send orders to CFE.

For order routing to the CBOE Trading Floor Regular Trading Hours (W_MAIN) session, if the firm wishes to route an order to a specific floor broker terminal in the firm's booth, the firm can specify the TargetLocationID[143] in the ***header*** of the order message as described in document FIX-03a.

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	Unique identifier of the order as assigned by institution. ClOrdID must be unique for each ExecBroker[76] (executing, give up, or clearing firm) + ClientID[109] (if a ClientID[109] is used at all). Branch + Branch Sequence Number + "hyphen" + Order Date ***AAA9999-YYYYMMDD*** *(Don't forget the hyphen)* **Branch** is used by the Originator to identify the Branch. Required for all roles. For W_MAIN orders, this must be a 3-character alpha only field that must be all uppercase. Orders in purely electronic sessions that do not interact with the trading floor may use between 1-3 alpha only, all uppercase characters. If the user sends a non-W_MAIN order with 1 or 2 characters for the Branch field, there must be no spaces between the Branch and the Branch Sequence Number. **Branch Sequence Number** is a 1 to 4 numeric only value with no embedded blanks in the range: *1 – 9999* **Order Date** is separated from the Branch + Branch Sequence Number by a hyphen"-" and must be provided as follows: *YYYYMMDD*
109	ClientID	N	N	**Options and Futures**: Correspondent Firm. This is an optional free-form field. The maximum size is 4 characters and the data type is uppercase alphabetic only.
76	ExecBroker	N	**Y**	**Options and Futures**: Executing Firm: Valid CBOE clearing firm number for representation of this order when traded and submitted to CBOE Trade Match (CTM). This is a required field that must contain the *FirmIdentifier(123)* or *ExchangeIdentifier:FirmIdentifier (CME:123)* if the exchange is not CBOE.

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
1	Account	N	N	**Options and Futures**: Account field is required for market-maker order entry but optional for broker-dealer order entry. Accounts must be approved by the CBOE Membership Department and must be pre-configured by your API testing representative. Exact size is 3 and data type is alpha only. When market-makers enter orders of origin "I", tag 9324 should be used in addition to tag 1 (see 9324 requirements). For entering orders of any origin other than "I", (including "C" = customer), the Account field can contain any value. This field should be left blank for Customer and Firm orders unless the Firm is utilizing Cust/Firm Sub-Accounting at OCC. Clearing account for "M" and "N" orders should always be sent in this field. For orders with a "W" designation, Firms are advised not to send data in the Account [tag 1] field.
21	HandlInst	N	Y	Must be specified per specification.
18	ExecInst	N	N	Refer to Contingency Mapping Table 1 = Not Held G = All or None (AON) f = Intermarket sweep order (ISO) and Intermarket sweep book (ISB) B = (OK to Cross) Midpoint Cross = Market + OK to Cross B = (OK to Cross) Cross=Limit+OK to Cross g=Tied Cross h=AutoLink Cross i=AutoLink Cross Match j=CROSS_WITHIN k=TIED_CROSS_WITHIN l=BID_PEG_CROSS m=OFFER_PEG_CROSS n=Do Not Route p=NEXT_DAY_CROSS q=TWO_DAY_CROSS o (lower-case "Oh")=CASH_CROSS w=Wash Trade Prevention
110	MinQty	N	N	Refer to Contingency Mapping Table. Used to specify a minimum quantity that can be filled on the order.
111	MaxFloor	N	N	Required for entering a Reserve order for Stock and Options. MaxFloor = Maximum Volume to be displayed. If the maximum volume is > 0, it is a Reserve order.
100	ExDestination	N	N	This field specifies the exchange destination for the order. Valid values: PSE - (NYSE Arca) 54 - (BATS) outbound (via REDI) to BATS CBO - (CBOE) CBOE, CBSX and CBOEW – (CBSX) C2OX – (CBOE 2)
55	Symbol	Y	Y	Trading Symbol. Examples: **CBOE Options** underlying security symbol (e.g., IBM, MSFT, QQQQ, SPX, etc.) **OneChicago Stock Futures** MSFT1C,IBM1C, etc.

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
48	SecurityID	N	N	CBOEdirect product key **Note: the CBOEdirect product key is *required* for all strategy (multi-leg) products.**
22	IDSource	N	N	Field will be set to "8" (Exchange Symbol) on messages sent to firms. 8 = Exchange Symbol
167	SecurityType	N	Y	Required 'OPT' for options, CS, FUT, INDX, MLEG, USTB
200	MaturityMonthYear	N	Y	Format: YYYYMM (e.g., `200209`)
205	MaturityDay	N	Y	Specifies the maturity date of the product.
201	PutOrCall	N	Y	Required for Option products. 0 = Put, 1 = Call
202	StrikePrice	N	Y	Required for Option products
54	Side	Y	Y	For Options or Futures orders, CBOE supports the following values: 1 = Buy 2 = Sell For orders of type MLEG (strategies), CBOE supports the following values: 1 = Same ***or*** B = Same 2 = Opposite ***or*** C=Opposite For Stock, CBOE supports the following values: 1 = Buy 2 = Sell 5 = Sell_Short 6 = Sell_Short_Exempt

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
38	OrderQty	N	Y	Quantity specified on the original request message from the firm.
40	OrdType	N	Y	**Options and Futures**: 1 = Market 2 = Limit 3 = Stop 4 = Stop Limit 5 = Market on close 7 = Limit or Better B = Limit on Close J = Market if Touched[1] Intermarket Sweep = 2 (Limit) Intermarket Sweep Book = 2 (Limit) Reserve = "Refer to MaxFloor [tag111]" Refer to Contingency Mapping Table for information on which order types are supported in which CBOE markets. **Stock**: Intermarket Sweep = 2 (Limit) Reserve = "Refer to MaxFloor [tag111]" Midpoint Cross = 1 (Market) Cross = 2 (Limit) Tied Cross = 2 (Limit) Autolink Cross = 2 (Limit) Autolink Cross Match = 2 (Limit) Cross_Within = 2 (Limit) Tied_Cross_Within = 2 (Limit) BID_PEG_CROSS=1 (Market) OFFER_PEG_CROSS=1 (Market) NEXT_DAY_CROSS= 2 (Limit) TWO_DAY_CROSS= 2 (Limit) CASH_CROSS= 2 (Limit)
44	Price	N	N	**All orders**: Price per contract – should be specified for all limit orders; Price should not be specified on market orders. Refer to Contingency Mapping Table. **Stock**: Should be specified for all limit orders. Refer to Contingency Mapping Table. **Cabinet**: Required for entering a Cabinet order. 0.01=Cabinet
99	StopPx	N	N	Refer to Contingency Mapping Table.

[1] OrdType of "J" designating Market if Touched order type is pending approval by the FIX Technical Committee as of this writing.

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
59	TimeInForce	N	N	**Options and Futures**: Specifies how long the order remains in effect. Absence of this tag is interpreted as DAY. Valid values (Refer to Contingency Mapping Table): 0 = Day 1 = GTC 2 = OPG (at the open) 3 = IOC (Immediate or CXL) 4 = FOK (Fill or Kill) 5 = GTX 6 = GTD **Stock and Options**: Intermarket Sweep Order (ISO) = '3' An ISO is essentially treated in an IOC fashion, time in force values '0' or '1' are accepted. Refer to Contingency Mapping Table. Intermarket Sweep Book (ISB) = '0' or '1'
47	Rule80A	N	N	**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."*
60	TransactTime	N	Y	Time order is submitted in UTC time
77	OpenClose	N	N	**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.
203	CoveredOrUncovered	N	N	This tag is optional for all orders. COVERED = 0 UNCOVERED = 1
204	CustomerOrFirm	N	N	Order capacity (origin) (see also Rule80A[47]). See the section entitled *"Specify the order capacity (origin) on an order"*
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**	**Options and Futures**: No more than one TradingSessionID must be specified on each order: CBOE trading floor: 'W_MAIN' CBOE Futures Exchange: 'CFE_MAIN' CFE Options on Futures: 'COF_MAIN' OneChicago: 'ONE_MAIN' Stock Trading On CBOEdirect: 'W_STOCK' CBOE 2: "C2_MAIN"
End Repeating Group				
388	DiscretionInst	N	N	Only value supported is 0. Refer to Contingency Mapping Table.
389	DiscretionOffset	N	N	Values < 1.0 that can be added/subtracted from the limit order price for a with discretion order. Refer to Contingency Mapping Table.

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
439	ClearingFirm	N	N	CMTA - This is an optional field designating a clearing firm that is different from the executing firm, as entered in ExecBroker (76). The value entered in ClearingFirm(439) is the clearing firm number where this trade will clear at the OCC.
440	ClearingAccount	N	N	**Options and Futures**: Required for all futures orders (ONE and CFE). Optional for non-M, non-N, and non-I options orders. Must specify the market-maker account where the trade will clear at the OCC. This field could be the Q-account, sub-account, joint account, or the market-maker acronym of the market-maker. Market-makers entering orders of origin "M" or "N" should include the sub-account in this field. For Customer orders, the OCC customer ID should be entered in this field. Market-makers entering orders of origin "I" should use tag 9324 instead of tag 440 (see 9324 requirements).
CBOE Custom Fields				
5941	DirectedFirm	N	N	This tag is not currently in use. This field is used to send a Directed AIM request to a targeted Firm, DDPM or DPMM
6818	BrokerRoutingID	N	N	Used to specify multiple routing choices for Linkage orders sent through CBOE. Currently used only for CBSX.

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
9324	ClearingOptionalData	N	Y	**For Qualified Contingent Trade:** Enter A:AIQ as the first characters in the Primary Order to direct CBOE to treat the paired orders as QCT at the start of the AIM auction. This will allow hedged order pairs to cross immediately, ahead of any resting customer orders for QCT orders. **For Sweep and AIM:** Enter A:AIS as the first characters in the primary order to instruct CBOE to sweep all better priced protected quotes at away exchanges at the same time as the commencement of the AIM auction. **For AIM Auctions:** Enter A:AIM as the first characters. If a Firm does not wish to cancel the primary order when the auction expires, the Firm must enter A:AIR, instead of A:AIM, in this field. This will designate the primary order to be returned to the system and trade or book as a regular order. **Directed AIM:** CBOE high and low order values prefixed by DAIM for Directed AIM match orders.---Not currently in use. **Stock: "**NLTR" (Names Later) is entered in this field to indicate non real-time clearing orders in the W_STOCK session. If the order gets executed, the trade will not automatically clear. Traders will have to provide the contra-party information at the end of the day before the trade clears. **Options:** For **Customer** orders, the first four characters of this field get reported to the last four characters of the CBOE Trade Match Optional Data field. These four characters get reported to the OCC. Contains data that will be passed on to CBOE trade match (CTM) and will be part of clearing information sent to the OCC. The data is specific to each member firm. **Preferred Market Maker** Firms that wish to give one DPM priority in participating in a trade use this tag. The firm would send "P:firm" and can coexist with other data that may be present in this tag. "firm" is the CBOE firm acronym that will be supplied by CBOE. Please note that the message must include the colon : **Futures**: This field stays with the order for the life of the order. The first 16 bytes go to the OCC.
9369	PriceProtectionScope	N	N	Defines the type of price protection the customer requires on their order Valid values: 0 = None 1 = Local (Exchange, ECN, ATS) 2 = National (Across all national markets) 3 = Global (Across all markets) Used in message types: 8(n), D(n), G(n)

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
9370	MultiLegPositionEffects	N	N	O = Open C = Close This is an array of open / close codes that should only be used for multi-leg (strategy) orders. This tag is optional. The value "N" (neither) is not supported in this tag. The 1st character is always the PositionEffect of the 1st leg, the 2nd character is the PositionEffect of the 2nd leg, etc. If one of the legs is an equity leg (as in buy_writes), then the firm needs to supply an "O" or "C" code as a dummy value. CBOE will not maintain this dummy value with the leg. Possible values for 2-leg strategy products: OO, OC, CO, CC Possible values for 3-leg strategy products: OOO, OOC, OCO, COO, OCC, COC, CCO, CCC Possible values for 4-leg strategy products: OOOO, OOOC, OOCO, COCO, etc.
9371	MultilegCoveredOrUncovered	N	N	0 = Covered 1 = Uncovered This is an array of Covered and Uncovered codes that should only be used for multi-leg (strategy) orders. This tag is optional. The value "N" (neither) is not supported in this tag. The 1st character is always the CoveredOrUncovered of the 1st leg, the 2nd character is the CoveredOrUncovered of the 2nd leg, etc. If one of the legs is an equity leg (as in buy_writes), then the firm needs to supply a "0" or "1" code as a dummy value. CBOE will not maintain this dummy value with the leg. Possible values for 2-leg strategy products: 00, 01, 10, or 11 Possible values for 3-leg strategy products: 000, 001, 010, 100, 011, 101, 110, 111 Possible values for 4-leg strategy products: 0000, 0001, 0010, 1010, etc.
9372	MultilegStockClearingFirm	N	N	The Clearing firm for the stock leg of a multileg option strategy added for complex order support in FIX 4.2. Used to specify the stock clearing firm for the stock leg of a combination stock – derivative strategy, such as a buy-write.
9321	SecondaryClOrdID	N	N	Used when counterparties require a secondary client order id. Will be replaced by FIX 4.3 field of the same name.
9384	AuctionContingency	N	Y	Used by the Firm for automated auction participation. 14=AUCTION_RESPONSE 24=STOCK_ODD_LOT_NBBO_ONLY 25= NBBO_FLASH_THEN_CANCEL 26=DO_NOT_ROUTE 27=NBBO_FLASH_RESPONSE
9385	AuctionID	N	Y	Used by the Firm for automated auction participation. Uses the value from QuoteReqID (131) in the Quote Request message.

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
9465	OrderOrigin	N	N	**Options and Futures**: If a Broker_Dealer enters an order on behalf of a market-maker in the W_MAIN, CFE_MAIN, or ONE_MAIN sessions, the market-maker's acronym must be entered in this tag. The default exchange is CBOE, but an exchange may be specified. This is also called "Originator". CBOE:ABC *-or you may enter-* ABC **CBSX**: J and K orders will not link away. Any remaining balance that should link away will be cancelled. Refer to the CBSX Order Origin codes table for order origin descriptions.
9469	ExtendedPriceType	N	N	**Cabinet**: Required for entering a Cabinet order. 4=Cabinet If this field is excluded, the order will be reported as a penny-priced order
	Standard Trailer	Y	Y	

Examples of CBSX Reserve, Principal (P) and Agent (A) Orders

Example of a Reserve Order

[8=FIX.4.2^A9=0217^A35=D^A52=20100712-13:27:12^A49=ABC^A56=CBOEFIX201^A115=DEF^A109=DEF^A76=CBOEW:123^A11=ABC1234-20100712^A1=DEF^A55=ABCD^A54=1^A38=4000^A167=CS^A60=20100712-13:27:12^A21=1^A**111=1000**^A40=2^A44=0.99^A59=0^A386=1^A336=W_STOCK^A47=A^A10=038^A]

P Order Request

[8=FIX.4.2^ 9=0182^ 35=D^ 34=125^ 49=TEST1501^ 56=DFIX1501^ 52=20070215-20:41:31^ 11=DUA0011-20070215^ 76=549^ 21=1^ 40=2^ 55=IBM^ 167=CS^ 54=2^ 38=100^ 44=2.00^ 47=P^ 100=CBOEW^ 60=20041020-12:00:00^ 386=1^ 336=W_STOCK^ 10=124^]

P Order Response (Order Ack Only)

[8=FIX.4.2^ 9=0331^ 35=8^ 34=162^ 49=DFIX1501^ 56=TEST1501^ 52=20070215-20:41:32^ 6=0^ 11=DUA0011-20070215^ 14=0^ 84=0^ 426=0^ 425=0^ 424=100^ 389=0^ 76=CBOE:549^ 17=57675:200205.0:0.1^ 20=0^ 150=0^ 22=8^ 30=CBOEW^ 31=0^ 32=0^ 151=100^ 37=57675:200205^ 38=100^ 39=0^ 40=2^ 44=2^ 201=0^ 47=P^ 207=W^ 48=69213921^ 167=CS^ 54=2^ 202=0^ 55=IBM^ 59=0^ 336=W_STOCK^ 60=20070215-20:41:32^ 9369=2^ 10=160^]

A Order Request

[8=FIX.4.2^ 9=0182^ 35=D^ 34=129^ 49=TEST1501^ 56=DFIX1501^ 52=20070215-20:41:46^ 11=DUA0015-20070215^ 76=549^ 21=1^ 40=2^ 55=IBM^ 167=CS^ 54=2^ 38=100^ 44=2.00^ 47=A^ 100=CBOEW^ 60=20041020-12:00:00^ 386=1^ 336=W_STOCK^ 10=123^]

A Order Response (Order Ack Only)

[8=FIX.4.2^ 9=0331^ 35=8^ 34=167^ 49=DFIX1501^ 56=TEST1501^ 52=20070215-20:41:47^ 6=0^ 11=DUA0015-20070215^ 14=0^ 84=0^ 426=0^ 425=0^ 424=100^ 389=0^ 76=CBOE:549^ 17=57675:200215.0:0.1^ 20=0^ 150=0^ 22=8^ 30=CBOEW^ 31=0^ 32=0^ 151=100^ 37=57675:200215^ 38=100^ 39=0^ 40=2^ 44=2^ 201=0^ 47=A^ 207=W^ 48=69213921^ 167=CS^ 54=2^ 202=0^ 55=IBM^ 59=0^ 336=W_STOCK^ 60=20070215-20:41:47^ 9369=2^ 10=168^]

Identification of Orders using field *ClOrdID[11]*

CBOEdirect requires that the *ClOrdID[11]* field be populated with a unique value for each New Order – Single, Cancel, Cancel Reject message. Not only must the value be unique it must comply with the CBOE specified format containing a Branch Code, Branch Sequence Number, and the Order Date.
Where:
The *Branch Code* is 1 to 3 alphabetic only characters with no embedded blanks in the range:

```
A – ZZZ
```

The *Branch Sequence Number* is a 1 to 4 numeric only value with no embedded blanks in the range:

```
1 – 9999
```

The *Order Date* must be separated from the Branch + Branch Sequence Number by a hyphen"-".

```
AAA9999-YYYYMMDD
```

The order date must be equal to the day the order is entered and is provided as follows:

```
YYYYMMDD
```

Valid Examples, assuming the trading date is 20010115:

```
AAA0001-20010115
A  0001-20010115
ABC1234-20010115
AB 0123-20010115
```

A common problem is not incrementing the Branch Sequence Number between successive orders. Make sure your application is able to generate a unique ClOrdID[11] for each request (including Order Cancel/Replace Requests) that complies with the CBOE format.
For instance, assume you arbitrarily use "AAA" as the branch code. The following ClOrdID[11] values for each successive order is acceptable:
Order#1 `11=AAA0001-20010115`
Order#2 `11=AAA0002-20010115`
Order#3 `11=AAA0003-20010115`
Order#4 `11=AAA0004-20010115`
In the next example a cancel request is sent to cancel Order#3 – the OrigClOrdID[41] is shown, as well.
Cancel#1 `11=AAA0005-20010115, 41=AAA0003-20010115`

Reusing Sequence Numbers across trading days

Note that sequence numbers can be reset and repeated across dates. Order#1 is submitted on day 1, Order#2 is submitted on the next day.

Order#1 `11=AAA0001-20010115`
Order#2 `11=AAA0001-20010116` (Submitted the next day)

Canceling a previous days order

The *ClOrdID[11]* value for an order is maintained across days for Good til cancel (GTC) orders. To cancel an order submitted on a previous day the *ClOrdID[11]* of the Cancel Request must contain the current trading date and refer to the ClOrdID of the order to be canceled in the *OrigClOrdID[41]* field.

Order#1 submitted on day one: `11=AAA0001-20010115`
A Cancel Request submitted two days later:
Cancel#1 submitted on day three: `11=AAA0123-20010117^41=AAA0001-20010115`

Using the *SecondaryClOrdID[9321]* to specify a firm specific order identifier

CBOE is providing a *SecondaryClOrdID[9321]*[2] field to make it easier for firms that have their own proprietary order identifier on orders destined for CBOE. This *SecondaryClOrdID* will be stored with the order and returned on all subsequent Execution Reports relating to that order.

Firm Identification on Orders in *ExecBroker[76]* and *ClearingFirm[439]*

Firms are identified using a firm number in the *ExecBroker[76]*, *ClearingFirm[439]* fields. For CBOE markets, the firm must be identified using a valid CBOE Member Firm Clearing Number in ExecBroker (76). The order may alternately clear into another firm's account. This may be denoted through the use of ClearingFirm (439), which is a valid OCC clearing number.

CBOEdirect now supports a multiple exchange environment. This capability was added to support the use of CBOEdirect for the OneChicago securities futures market.

For both the ExecBroker[76] and ClearingFirm[439] fields are specified using the following formats:

FirmNumber or *ExchangeIdentifier*:*FirmNumber*

Where:

The *ExchangeIdentifier* is an identifier for an Exchange supported in the trading session where the order is being routed.

The *FirmNumber* is a valid firm number at the exchange identified in the *ExchangeIdentifier* for the trading session where the order is being routed.

NOTE: If the *ExchangeIdentifier* is ommitted – the default Exchange is set to the CBOE.

Table 2 Exchange Identifiers

Identifier	Exchange
CBOE	Chicago Board Options Exchange
CME	Chicago Mercantile Exchange
CFE	CBOE Futures Exchange
CBOEW	CBOE Stock Exchange (CBSX)
C2OX	CBOE 2

[2] *SecondaryClOrdID[9321]* is a custom field supported by CBOE in their FIX 4.2 implementation that corresponds to the FIX 4.3 standard field, *SecondaryClOrdID[526]*, which was added as an optional field on the FIX 4.3 order routing messages.

Specify the order capacity (origin) on an order (Customer, Firm, Broker, etc.)

There are currently two approaches that can be used to specify the capacity of the firm on an order.

1. Using the FIX *CustomerOrFirm[204]* field that includes additional non standard enumerations for CBOE markets.
2. Using the FIX *Rule80A[47]* (aka OrderCapacity) field using CBOE proprietary enumerations

Which approach should you use?

CustomerOrFirm[204] is a deprecated field in FIX, meaning that it will not necessarily available in future versions. CBOE only provides support for a subset of order capacities at this time with no plans to update *CustomerOrFirm[204]* to support new options linkage markets.

If you plan to route orders to OLA Linkage, CBOE Futures, or OneChicago futures markets, then you must use Rule80A[47].

CustomerOrFirm[204] Enumerations
0 = Customer
1 = Firm
2 = Broker Dealer (CBOE only)
3 = Customer Broker Dealer (CBOE only)
4 = Market Maker (CBOE only)

Rule80A[47] Order Origin Codes for CBOE products

Standard CBOE order capacity values for all option markets		
CBOE Proprietary Order Capacity Code (Origin Code)	**Description**	**OCC Clearing Account Type** **C – Customer** **F – Firm** **M – Market Maker**
C	Customer	C
F	Firm	F
M	Market maker	M
I	In-Crowd Market-Maker (Hybrid only)	M
B	Broker Dealer	C
X	*Customer Broker Dealer*	C
N	Non member market maker / Market maker specialist at another options exchange	M
W	Professional Customer	
Y	Stock Specialist registered in the underlying security	
Options Linkage Authority (OLA) order capacities		
P	Used only for CBSX	M
CBOE Stock Exchange (CBSX) order capacities		
A	Agency	
B	Agency single order	
C	Individual investor, single order	
D	Program Order, index arb, for Member firm/org	
E	Principal	
F	Program order, index arb, for other member	
G	Principal	
I	Competing Market Maker, member	
I or M	Registered Equity Market Maker trades	
J	Agency Do-Not-Route (refer to type A)	
K	Principal Do-Not-Route (refer to type P)	

L	Program Order, non-index arb, for Member firm/org	
N	Program Order, non-index arb, for other member	
P	Principal	
R	Competing dealer trades Short exempt transaction for non-member competing market-maker (refer to A and R types)	
T	Competing dealer trades	
U	Program Order, index arb, for other agency	
W	Short exempt transaction (refer to W type) All other orders as agent for other member	
Y	Program Order, non-index arb, for other agency	
CBOE Futures Exchange (CFE) order capacities		
D	Customer segregated account	C
E	House non-segregated account	F
F	House non-segregated account	F
O	House non-segregated account	C
M	Market maker account	M
A	Customer segregated account	C
H	House non-segregated account	F
C	Customer	C

Rule80A[47] Order Origin Codes for OneChicago (ONE) and CBOE Futures (CFE) Exchanges

CBOE Proprietary Order Capacity Code	CTI Code	CFTC Origin	Used on ONE	Used on CFE	Description	OCC Clearing Account Type C – Customer F – Firm M – Market Maker
C	CTI 4	Origin 1	●	●	Customer	C
F	CTI 2	Origin 2	●	●	Firm	F
D ("V" in CMi)*	CTI 1	Origin 1	●	●	Member, Customer Segregated Account	C
E	CTI 1	Origin 2	●	●	Member, House Account	F
Q	CTI 1	Origin 5	●		Member, SIPC Protected Account	C
A ("G" in CMi)*	CTI 3	Origin 1	●	●	User Proxy for trader, Customer Segregated Account	C
H	CTI 3	Origin 2	●	●	User Proxy for trader, House Account	F
R	CTI 3	Origin 5	●		User Proxy for trader, SIPC Protected Account	C
O	CTI 4	Origin 2	●	●	Non Member, House Account	C
T	CTI 4	Origin 5	●		Non Member, SIPC Protected Account	C
M	CTI 1	Origin 6	●	●	Member, Market-Maker Account	M[3]
V ("D" in CMi)*			●	●	Customer, Floor Broker Workstation	C

* Note: Execution reports will carry the CMi value

Preferred Market Maker

Firms that wish to give one DPM priority in participating in a trade use optional data (tag 9324 in the New Order Single message). The firm would send "P:firm;" and can coexist with other data that may be present in this tag. "firm" is the CBOE firm acronym that will be supplied by CBOE. Please note that the message must include the colon : and semi-colon ;

Special Considerations for CFE Orders

- Market-maker users may not clear their trades in the market-maker origin. The firm at which the market-maker trades must notify the OCC whether the market-maker's trades will clear in the market-maker, Firm, or Customer origin at OCC. The CBOEdirect Administrator (CBOE Help Desk) will set up the market-maker's profile to define the default origin of either M (market-maker), V (CFE customer) or E (CFE firm) to be populated for market-maker trades. These users must also identify their bookkeeping account number at their clearing firm, which will be entered into the default ClearingAccount[440] tag on market-maker orders. For users whose default origin is M, the ClearingAccount[440] tag must = the market-maker acronym.
- OCC does not facilitate large trader reporting for customer positions. Market-maker user types who clear in the customer origin will report large trader positions to the exchange and CFTC via SIAC.
- Trades may now be flagged as give up trades at the time of order entry. Users wishing to do this, without specifying the firm that the trade will be given up to, must enter a G in the ClearingFirm[439] tag and CFE in the ClearingFirm[439] tag exchange field. Users who know the give up firm may enter that firm number into the ClearingFirm[439] tag and CFE into the ClearingFirm[439] tag exchange field.
- Post trade processing will be conducted at The Clearing Corporation. These matched trades will be transferred to the OCC at the end of the day. Firms will not be able to use their ITP on line screens to view or edit CFE trades. Firms will

[3] The Clearing Corporation will send the M origin to OCC. However, each firm will instruct OCC whether such trades will ultimately clear in the Customer (C) or Firm (F) account.

be able to use existing connectivity to The Clearing Corporation or The Clearing Corporation's web-based on-line screens to view and edit trades. Each day's Final Trade Register will only come directly from OCC.

- Since The Clearing Corporation does not support an Optional Data field, the ClearingOptionalData[9324] tag will not flow from CBOE to OCC. If users enter ClearingOptionalData[9324] on a CFE order, they will receive that data back in the fill report from CBOEdirect, but they will not see it on any data that they receive from The Clearing Corporation or OCC.

Creating and submitting paired orders using the *New Order - List Message (MsgType=E)*

Firms will use the FIX *New Order – List* message, *MsgType[35]* = E, to submit paired orders.

Creating and submitting paired cross orders

Firms can enter "Cross" orders as a pair using the FIX *New Order – List* message. Cross orders are used in CBOEdirect's Stock session. The message must contain a primary order and a match order. Refer to "Creating and submitted Stock order types" for a description of supported Cross orders.

Table 3 New Order - List Message using the "Disclosed" convention

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
	Standard Header	Y	Y	*MsgType[35]* = E
66	ListID	Y	N	Must be unique, by customer, for the day
394	BidType	Y	Y	2=Disclosed
68	TotNoOrders	Y	Y	Used to support fragmentation. Sum of NoOrders across all messages with the same ListID. Value=2
73	NoOrders	Y	Y	Number of orders in this message Value=2
Begin Repeating Group for NoOrders				
INSERT NEW ORDER SINGLE TAGS HERE. USE SAME TAGS AS YOU WOULD FOR A NORMAL ORDER.				
67	ListSeqNo	Y	Y	Order number within the list.
End Repeating Group for NoOrders				
	Standard Trailer	Y	Y	

Automated Improvement Mechanism

AIM provides an automated method for processing the facilitation and solicitation of orders. In AIM, both the original order and the match (facilitation/solicitation) order are sent simultaneously and exposed to a brief electronic auction to allow for price improvement. The match order must be sent with a quantity equal to the original roder volume and may be sent with either a limit or market price. If market, the sender is indicating the match order will trade at the best price established by other participants.

Creating and submitting paired orders for AIM

Firms will use the FIX *New Order – List* message to submit paired orders for AIM. The message must contain a primary order and a match order. The user submitting the two orders wishes to trade the match order with the primary order.

Table 4 New Order - List Message using the "Disclosed" convention

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
	Standard Header	Y	Y	*MsgType[35]* = E
66	ListID	Y	N	Must be unique, by customer, for the day

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
394	BidType	Y	Y	2=Disclosed
68	TotNoOrders	Y	Y	Used to support fragmentation. Sum of NoOrders across all messages with the same ListID. Value=2
9382	MatchType	N	Y	Internalizing Firm can set the price for its side of the order. 1=guaranteed price (not currently supported), 2=limit price, 3=auto match Values from cmiOrder::MatchType.
73	NoOrders	Y	Y	Number of orders in this message Value=2
Begin Repeating Group for NoOrders				
INSERT NEW ORDER SINGLE TAGS HERE. USE SAME TAGS AS YOU WOULD FOR A NORMAL ORDER.				
67	ListSeqNo	Y	Y	Order number within the list.
End Repeating Group for NoOrders				
	Standard Trailer	Y	Y	

Considerations for AIM

- Once the paired orders are submitted, they cannot be changed or cancelled.
- Internalizing Firms will be guaranteed a percentage of the trade if they are at the final price of the auction. The percentage will be a configurable parameter.
- If both the original and match orders are sent with a customer origin, the orders will trade with each other immediately without being exposed to an auction.
- Both the primary (customer) order and a match (firm) order will be cancelled if, for any reason, the AIM auction cannot be initiated (e.g. fewer than 3 quoters in the series; etc.).
- If the original order is marked with as "AIR" rather than "AIM" the sender is indicating that if the auction cannot occur for any reason, the original order should continue into the marketplace to be traded.

AIM Solicitation Mechanism (AIM AON)

AIM AON allows agents to electronically execute orders they represent against solicited orders.

The mechanics for entering orders into AIM AON is the same as for the existing AIM process with three main differences;

1) Both orders entered must have the contingency AON.
2) The orders must have a contract size of at least 500.
3) The original order and the match order cannot be for the same executing firm [tag76] if the match order is an F origin.

In AIM AON, the agency order will trade with the solicited order at the proposed price unless there are auction responses that improve the price of the auction for the total size of the agency order. This process is available for simple, complex and cross product orders.

AIM ISO

Allows brokers to submit AIM crosses outside the NBBO with the understanding that the broker is sweeping all better priced protected quotes at away exchanges themselves. Upon receipt, CBOE will clear all better internal prices while starting an auction at the crossing price designated on the contra/match order, irrespective of the NBBO.

Sweep-and-AIM

Allows brokers to submit AIM crosses outside the NBBO. Upon receipt, CBOE will sweep all better priced protected quotes at away markets along with better CBOE prices, while simultaneously starting an auction for the remaining volume at the crossing price designated on the match order.

AIM Examples

Firm submits paired orders for AIM

```
8=FIX.4.2|9=0499|35=E|34=128|49=TESTF1|56=PFIX5001|52=20100114-
13:10:56|66=INTERNALISEDTESTF1|394=2|68=2|73=2|11=JIJ2816-
20100114|67=1|109=TOM|76=CBOE:999|1=TESTF1|21=1|386=1|336=W_MAIN|55=ABC|48=699440687|1
67=OPT|54=1|60=20100114-
13:10:56|38=100.0|40=2|59=0|47=C|77=C|440=TESTF1|44=1.15|9465=CBOE:TESTF1|11=JIJ2817-
20100114|67=2|109=TOM|76=CBOE:999|1=TESTF1|21=1|386=1|336=W_MAIN|55=ABC|48=699440687|1
67=OPT|54=2|60=20100114-
13:10:56|38=100.0|40=2|59=0|47=M|77=C|440=TESTF1|44=1.15|9465=CBOE:TESTF1|9382=2|10=20
2|
```

CBOEdirect responds that it has received the paired orders

These messages are the same as responses to two independent New Order Single (*MsgType=D*) messages.

```
8=FIX.4.2^49=HFIX2^56=CUST^35=8^37=2348745:920371^11=AAA2345-20001102^76=690^
20=0^150=0^39=0^55=AOO^167=OPT^200=200107^205=21^201=1^202=50^207=CBOE^54=1^
38=10^40=2^44=.45^77=O^151=10^

8=FIX.4.2^49=HFIX2^56=CUST^35=8^37=2348745:920372^11=AAA2346-20001102^76=690^
20=0^150=0^39=0^55=AOO^167=OPT^200=200107^205=21^201=1^202=50^207=CBOE^54=2^
38=10^40=2^44=.45^77=O^151=10^
```

Creating and submitting an order for auction participation

CBOE will solicit auction participation by sending a Quote Request message to the Firm. Firms must subscribe to receive auction solicitation through the Quote Status Request message. Firms should review document FIX-03d, which describes auction subscription and solicitation.

Firms will use the FIX *New Order—Single* message to submit orders for automated auction participation in CBOE Markets.

FIX Tag Number	Description	Comments or Example
9385	AuctionID	Used for auction participation and uses the value from QuoteReqID (131) in the Quote Request message.
9384	AuctionContingency	Used for auction participation 14=AUCTION_RESPONSE 24=STOCK_ODD_LOT_NBBO_ONLY 25= NBBO_FLASH_THEN_CANCEL 26=DO_NOT_ROUTE 27=NBBO_FLASH_RESPONSE

Directed AIM

This functionality is not currently support.

Directed AIM gives order providers the ability to direct their orders to look for price improvement. The orders can be directed to either:

1. a target Firm (only one per order), or
2. a target DPM of a class, or
3. a target PDPM

The Directed AIM request targeted at a firm will be sent to Market Makers (MM) that are affiliated to the target firm. The Directed AIM request targeted at DPM will be sent to the DPM of the class. The Directed AIM request targeted at PDPM will be sent to the PDPM based on the PDPM assignment made in the Firm/Class routing property. If MM's should choose to price improve, they will send a matching order to start the AIM auction. The MMs also have the ability to allow the Directed AIM request to time out, or to reject the Directed AIM request.

FIX Firms will use the FIX *New Order—Single* message to submit Directed AIM orders for automated auction participation in CBOE Markets.

Examples of Directed AIM auctions

Subscribe to be notified about Directed AIM events

FIX users will register / subscribe to be notified about DAIM events via the Quote Status Request Message

8=FIX.4.2 9=0095 35=a 34=4 49=TEST401 56=DFIX401 52=20090211-15:30:53 55=AAI 167=OPT 336=W_MAIN 9463=500 **9383=8** 10=032]

Directed AIM primary order submission

FIX will specify its target firm/PMM or DPM on the Primary Order by using the UDF
DirectedFirm = 5941

[8=FIX.4.2 9=0204 35=D 34=6 49=TEST401 56=DFIX401 52=20090211-15:31:48 11=FTA0001-20090211 76=551 21=1 40=2 55=AAI 167=OPT 200=200810 201=0 202=10.00 54=1 38=100 44=2.00 47=C 60=20041020-12:00:00 386=1 336=W_MAIN **5941=PAX** 10=012]

Directed AIM solicitation

Those subscribed will be notified about DAIM events via Quote Request Message. The Cboe OrderHi:OrderLo values of the Primary Order will be sent in the QuoteReqID [tag 131] field.

```
[8=FIX.4.2 9=0227 35=R 34=6 49=DFIX401 56=TEST401 52=20090211-
15:31:49 131=78116:1350753281 146=1 55=AAI 48=519757310 22=8 167=OPT 200=200810 205=18 2
01=0 202=10 207=W 336=W_MAIN 54=1 38=100 60=00070901-
15:31:49 9383=8 9384=1 9743=1 9302=2.0000 10=091 ]
```

Directed AIM match order submission

The Match Order will specify the Cboe OrderHi:OrderLo values via the ClearingOptionalData [tag 9324] prefixed by **DAIM:**

```
[8=FIX.4.2 9=0222 35=D 34=3 49=TEST402 56=DFIX401 52=20090211-15:33:05 11=LRC0001-
20090211 76=551 21=1 40=2 55=AAI 167=OPT 200=200810 201=0 202=10.00 54=2 38=100 44=2.00 47=C
60=20041020-12:00:00 386=1 336=W_MAIN 9324=DAIM:78116:1350753281 10=187 ]
```

HAL and SAL Details

The SAL mechanism is an auction that allows for electronic price improvement on eligible simple (non-complex) marketable orders. HAL is a mechanism that allows CBOE market makers to improve the displayed BBO quote prior to an order being linked to an away exchange to obtain the NBBO price.

Considerations for Auctions

- To start the auction, CBOE will disseminate a new Quote Request (request for price – RFP) message (refer to FIX-03d for auction solicitation details) to those quoters that are quoting any series in the underlying stock at the time the Quote Request is sent and the firm initiating the auction, if the order was for internalization.
- The auction will start immediately upon receipt of the order and will be live for a short period of time. The time is configurable.
- Quote locks and quote triggers will end when the auction starts.
- A response to the auction will not replace the user's quote since the responses are one-sided. The responses will be treated like IOC orders and will expire after the auction is over. Users will be able to respond at multiple prices to the auction solicitation.
- Auction responses may be cancelled during the auction period using the Order Cancel Request message (*MsgType[35]* = F)
- Auction responses may be cancel/replaced during the auction period using the Order Cancel/Replace Request message (*MsgType[35]* = G)

Simple Auction Liaison (SAL)

The auction type SAL is a mechanism that provides a price-improvement auction for simple (non-complex) orders. AuctionType[9383] includes the value SAL=5.

SAL Details for Hybrid 3.0 classes

1. Eligible marketable orders will be stopped at the LMM quote and exposed to a brief electronic aution for price improvement. Customer orders of 250 contracts and less will be eligible.
2. The starting price for the auction will be the LMM quote. The auction increment in all three classes will be $.05 below $3.00 and $.10 above $3.00.
3. The auction message will be available to all market makers with appointments in the class and firms that have orders resting at the BBO.
4. At the end of the auction period, the order will be executed at the best price(s), including any customer book orders, auction responses and the LMM auto-quote.
5. The trade will be allocated using pro-rata, with each user's response capped at the size of the incoming order (i.e. "capped" pro-rata).
6. An auction will not begin if a manual quote is present on the BBO on the opposite side of the incoming order.

SAL Details for all Hybrid classes – This functionality is not currently supported

1. When CBOE is at the NBBO, an eligible marketable order will be stopped at the NBBO and exposed to a brief electronic auction for price improvement. The origins, order size and classes eligible for auction will be configurable.
2. Once the auction begins, quoters who were initially on the NBBO and those that subsequently join or improve the market will not be able to fade or reduce size until the process completes (similar to Quote Trigger).
3. The starting price for the auction will be one penny better than the NBBO.
4. The auction message will be available to all market makers quoting the class (and firms that have orders resting at the top of the market).
5. At the end of the auction period, the order will be executed at the best prices. At each execution price, those that were on the NBBO at the start of the auction will have priority, up to their original size, over those who were not at the NBBO. NBBO participants may also join on quantity in excess of their original size along with all other respondents using the CUMA allocation.
6. DPMs, eDPMs and/or Preferred Market Makers will retain a participation right if they were initially on the NBBO and are on the final auction price.
7. An auction will not begin (i.e. the incoming order will simply auto-ex) if the displayed size includes quotes and resting book orders, and if the order size exceeds the quote size.
8. The auction will end early and trade against the existing auction responses and quotes for the following reasons:
    a. An incoming quote locks or crosses the displayed market.
    b. An opposite side order is received that is tradable against the SAL order with a quantity equal to or greater than that of the SAL order. If the new order is smaller than the SAL order, it will trade against the SAL order and the auction will continue for the remainder of the SAL order.

c. A new marketable order is received on the same side as the SAL order. This order will trade against any remaining responses to the original auction (after the original SAL order is filled), and then a new auction will start for the new order, if appropriate.

Hybrid Automated Liaison Auction Type

The Hybrid Automated Liaison (HAL) auction type (AUCTION_HAL) allows users to participate in auctions for orders that are:

NBBO Reject: An incoming order is marketable but CBOE is not at the NBBO.
Tweener Lock: An incoming order that is between the market at CBOE but is marketable against an away market.
Tweener: An incoming order that is between the market at CBOE and does not lock or cross an away market

Special Considerations for the HAL Auction Type

- A Request for Price (RFP) flash will be used to place the order in an auction state. The RFP flash timer is configurable.
- If a decision to flash the order is taken then CBOEdirect will end any quote locks and any current non-flash auctions will be allocated prior to the start of order flashing.
- CBOEdirect will send RFP at the NBBO price (or order price for a Tweener) to all the market makers quoting in this product or class depending upon the settings.
- RFP will be of type HAL and have the NBBO price as the starting price and the size of the order.
- Response to the flash auction cannot be cancelled.
- Response to the flash auction are filled immediately upon receipt.

Auction Examples

Firm participates in auction

The auctioned order is to buy 10 at $0.45. The auction response offers to sell 10 at $0.45.

```
8=FIX.4.2^49=CLNT^56=HFIX2^35=D^11=PQR7654-20001102^76=690^21=1^55=AOO^167=OPT^
200=200107^205=21^201=1^202=50^207=CBOE^54=2^38=10^40=2^44=.45^
60=20001102-15:12:04^77=O^204=0^386=1^336=W_MAIN^9385=384027385:58734932^9384=14^
```

Auction participant changes auction order

The auction order is cancel/replaced using the Order Cancel/Replace Request message (*MsgType[35]* = G) with the addition of AuctionID[9385] and AuctionContingency[9384].

```
8=FIX.4.2^49=HFIX2^56=CLNT^35=G^11=PQR7655-20001102^41=PQR7654-20001102^76=690^
21=1^55=AOO^167=OPT^200=200107^205=21^201=1^207=CBOE^54=2^38=20^40=2^44=.45^77=O^
204=0^60=20001102-15:12:04^386=1^338=W_MAIN^9385=384027385:58734932^9384=14^
```

CBOEdirect reports auction result

CBOEdirect sends Execution Report FIX messages indicating that an order submitted to auction has traded . Execution Report messages relating to an auction have the additional fields AuctionID[9385] and AuctionContingency[9384].

Example: The customer who submitted the paired orders gets a partial-fill message, showing that 5 contracts sold at $0.45.

```
35=8^49=HFIX2^56=CUST^37=2348745:920371^11=AAA2345-20001102^76=690^
17=2348745:920371.7837563:53424.0^20=0^150=1^39=1^55=AOO^48=65842957^22=8^167=OPT^
200=200107^205=21^201=1^202=50^207=W^54=1^38=10^40=2^44=.45^32=5^31=.45^30=CBO^
336=W_MAIN^151=5^14=5^60=20001102-15:12:06^77=O^9385=384027385:58734932^9384=1^
```

Example: The customer who agreed to sell 10 contracts at $0.45 gets a partial-fill message, and a message canceling the rest of that order.

```
35=8^49=HFIX2^56=CLNT^37=2348745:920376^11=PQR7654-20001102^76=690^
17=2348745:920376.7837563:53424.1^20=0^150=1^39=1^55=AOO^48=65842957^22=8^167=OPT^
200=200107^205=21^201=1^202=50^207=W^54=2^38=5^40=2^44=.45^32=5^31=.45^30=CBO^
336=W_MAIN^151=0^14=5^60=20001102-15:12:06^77=O^9385=384027385:58734932^9384=14^

35=8^49=HFIX2^56=CLNT^37=2348745:920376^11=PQR7654-20001102^76=690^
20=0^150=4^39=4^55=AOO^48=65842957^22=8^167=OPT^200=200107^205=21^201=1^202=50^
207=W^54=2^38=5^40=2^44=.45^32=0^31=0.0^30=CBO^336=W_MAIN^151=0^14=5^
60=20001102-15:12:06^77=O^9385=384027385:58734932^9384=14^
```

Example using AuctionContingency[9384], STOCK_ODD_LOT_NBBO_ONLY

New Single Order Request

```
low information 2008/02/01 13:52:52:491: FIXPump: Received data on connection
{TEST302} [8=FIX.4.2^A9=0202^A35=D^A50=SUN:SUN^A57=TEST^A34=2^A49=TEST302^A56=DFI
X301^A52=20080201-19:52:52^A11=TMX0001-
20080201^A76=CBOE:690^A21=1^A55=C^A167=CS^A207=W^A54=1^A60=20080201-
10:01:42^A38=30^A40=2^A44=1.2^A47=C^A386=1^A336=W_ST
OCK^A9384=24^A10=068^A]
```

New Report

```
low information 2008/02/01 13:52:53:223: FIXConnectionData: Sending data on connection
{TEST302} [8=FIX.4.2^A9=0332^A35=8^A57=SUN:SUN^A34=2^A49=DFIX301^A56=TES
T302^A52=20080201-19:52:53^A6=0^A11=TMX0001-
20080201^A14=0^A84=0^A426=0^A425=0^A424=30^A389=0^A76=CBOE:690^A17=65036:603590023.0:0
.1^A20=0^A150=0^A22=8^A31=0^A
32=0^A151=30^A37=65036:603590023^A38=30^A39=0^A40=2^A44=1.2^A201=0^A47=C^A207=W^A48=69
208659^A167=CS^A54=1^A202=0^A55=C^A59=0^A336=W_STOCK^A60=20080201-19:52:5
3^A9369=2^A10=045^A]
```

Cancel Report

```
low information 2008/02/01 13:53:03:274: FIXConnectionData: Sending data on connection
{TEST302} [8=FIX.4.2^A9=0350^A35=8^A57=SUN:SUN^A34=3^A49=DFIX301^A56=TES
T302^A52=20080201-19:53:03^A6=0^A11=TMX0001-
20080201^A14=0^A84=30^A426=0^A425=0^A424=0^A389=0^A76=CBOE:690^A17=65036:603590023.499
59697.3^A20=0^A150=4^A22=8^A3
1=0^A32=0^A151=0^A442=1^A37=65036:603590023^A38=30^A39=4^A40=2^A44=1.2^A201=0^A47=C^A2
07=W^A48=69208659^A167=CS^A54=1^A202=0^A55=C^A58=USER^A59=0^A336=W_STOCK^
A60=20080201-19:53:03^A9369=2^A10=016^A]
```

Fill Report

```
low information 2008/02/01 14:18:04:842: FIXConnectionData: Sending data on connection
{TEST302} [8=FIX.4.2^A9=0432^A35=8^A57=SUN:SUN^A34=57^A49=DFIX301^A56=TE
ST302^A52=20080201-20:18:04^A6=1.2^A11=IFT0001-
20080201^A14=30^A84=0^A426=1.2^A425=30^A424=30^A389=0^A76=CBOE:690^A17=65036:603590030
.65036:409532231.0^A20=0^A
150=2^A22=8^A31=1.2^A32=30^A151=0^A442=1^A382=1^A375=CBOEW:000^A337=XXW^A437=30^A438=2
0080201-20:18:04^A37=65036:603590030^A38=30^A39=2^A40=2^A44=1.2^A201=0^A4
7=C^A207=W^A48=69208659^A167=CS^A54=1^A202=0^A55=C^A59=0^A336=W_STOCK^A60=20080201-
20:18:04^A9369=2^A9433=XXW^A9730=N^A10=053^A]
```

Creating and submitting an In-Crowd Market-Maker (ICM, or I) order

If a market-maker has an appointment to quote an option class and wishes to enter an order in that class, the market maker may enter an ICM order with order origin "I". More detailed business rules pertaining to the ICM orders are contained within the W_MAIN-ONE Order Test Plan which is downloadable at the API web site.

ICM orders can receive Quote Trigger messages from CBOE to describe notifications of pending trades. Please refer to the Hybrid Quote Trigger section below for more information.

ICM Orders entered by the Broker-Dealer role on behalf of In-Crowd Market-Makers

This section applies if one FIX 4.2 session (one SenderCompId, one SenderSubId) enters orders on behalf of multiple In-Crowd market-makers.

When a FIX 4.2 Broker-Dealer user logs on, CBOE will automatically subscribe that user to receive Quote (Locked) messages for ICM orders on a subscription basis. See document FIX-03D for more details on the Quote (Locked) message.

FIX Tag Number	Description	Comments or Example
1	Account	Some market-makers trade in accounts identical to their Acronym. For example: Acronym: DHH Account: DHH Some market-makers trade in a "Q account," 3 characters beginning with a Q. Accounts are created by the Market Maker Clearing firm. Accounts are not made up by the market maker. Market makers may only trade in accounts that are properly setup by their clearing firm.
47	Rule80A	"**I**" for In-Crowd Market-Maker (also called "ICM")
76	ExecBroker	Market-maker's clearing number ("123")
440	ClearingAccount	Maximum of 6 characters. This tag is optional.
9324	Optional Data	See *New Order Single Message for more details on use of tag 9324*
9465	Originator	3 letter alphabetic acronym of market maker who originated the order

ICM Orders entered by In-Crowd Market-Makers

FIX Tag Number	Description	Comments or Example
1	Account	Some Market Makers trade in accounts identical to their Acronym. For example: Acronym: DHH Account DHH Some market makers trade in a "Q account," 3 characters beginning with a Q. Accounts are created by the Market Maker Clearing firm. The market maker does not make up accounts. Market makers may only trade in accounts that are properly setup by their clearing firm.
47	Rule80A	Should be set to "**I**" for In-Crowd Market-Maker ("ICM")
76	ExecBroker	Market-maker's clearing number ("123")
440	ClearingAccount	Maximum of 6 characters. This tag is optional.
9324	Optional Data	See *New Order Single Message for more details on use of tag 9324*

Hybrid Quote Trigger

This functionality is not currently supported.

Hybrid quote trigger takes place when a Hybrid market-maker's ICM ("I") order (or quote) in a Hybrid class is in the process of being traded. This process of "being traded" can be n(1) second or more (check with the CBOE Production Help Desk or Trading Operations department for the current value which can vary by class). While a Hybrid ICM order (or quote) is being traded, CBOE places restrictions on cancellations and modifications to the order (or quote). The following scenarios only apply to options that trade in Hybrid.

Scenario 1:

The user enters an ICM order that is involved in a Quote Trigger. The user sends an order cancel or cancel-replace request.

The user would receive a pending cancel or pending cancel replace and this request would be queued up. After the quote trigger is finished the user would receive a cancel report with the appropriate quantities as usual and the reason (Text field on the execution report) would be USER.

Scenario 2:

The user enters an ICM order. The product state changes to HALT.

The user would receive a cancel report with cancel reason set to SYSTEM or PRODUCT_HALTED as the case may be.

Scenario 3:

The user enters an ICM order. CBOE experiences a backend system failover.

The user would receive a cancel report with cancel reason set to SYSTEM.

Quote Trigger Notifications

CBOE will automatically subscribe the market-maker to Quote Trigger notifications. CBOE will publish Quote Trigger notifications via the Quote Message with tag 9008 having all the information of the Quote Trigger.

Quote Trigger in response to a I-order:

```
8=FIX.4.2^A9=0297^A35=S^A34=77^A49=AFIX201^A56=AAS^A52=20040614-
16:49:01^A117=MSQ^A55=MSQ^A48=99359119^A22=8^A167=OPT^A200=200404^A205=17^A20
1=0^A202=35^A207=W^A9008=Trigger
{Session=W_MAIN,Key=99359119,Qty=200,Price=1.5,Ext=21=2^A60=20040206-
20:44:56,BranchSeqNum=BBM0003-20040614,OrderId=4239:12930}^A9312=Sell Quote
Trigger Order^A10=148^A
```

The other possible value for tag 9312 would be “Buy Quote Trigger Order”.

Specifying Clearing Related Information

FIX Options Order Clearing Information in New Order Message

FIX Tag Name	Tag #	Sample	Description
Account	1	ABC or QAB	For market-makers, this typically would be either the joint account (often called q-account) or the market-maker three-letter badge acronym. Passed through to OCC. Required for Market-Maker and DPM roles in all sessions. For Market-Maker and DPM roles, CBOE validates the value of this field on inbound orders against the CBOE Membership system. For Market-Maker and DPMs, user cannot use more than one account per class. Optional for Broker-Dealer and Firm roles. CBOE performs no validation checks on the value of this field for Broker-Dealer and Firm roles. Exact size is 3 and data type is alpha only.
ClearingFirm	439	CBOE:123 or 123	The CMTA (Clearing Member Trade Agreement) field is used to designate an OCC clearing firm if it is different from the executingOrGiveUpFirm. CBOE performs no validation checks on the CMTA field against the CBOE Membership system. This field is optional for all roles in all sessions. CMTA is comprised of two components: an e*xchange* component, which contains the exchange code and CMTA firm number. The e*xchange* string is the exchange on which your order will trade. The exchange portion of the CMTA field is alpha only. Please note that you must use a colon : between the exchange and the firm number. If you leave exchange blank but include a firm number, then the exchange defaults to CBOE. The *firm number* is the OCC clearing firm where the order will clear. The firm number portion of the CMTA field is numeric only. Even though the maximum size for the firm number component is 5, CBOE will read the first three numbers of this field to use as the OCC clearing firm. In other words, if the desired CMTA firm at the OCC is “123”, do not send “00123”, send “123”.
ClientID	109	ABC or ABCD	This field is commonly referred to as the Correspondent Firm field by CBOE. It is used by the executing give up firm to differentiate the firm or system sending the order. The 1st three characters of this field are mapped to the optional data field on the CBOE Trade Match (CTM) record. This field has no impact on the clearing of the trade. This field is optional. CBOE performs no validation checks on the correspondentFirm field against the CBOE Membership system. Maximum size is 4 characters and data type is uppercase alpha only.

FIX Tag Name	Tag #	Sample	Description
ExecBroker	76	CBOE:123 or 123	This is the CBOE post trade processing firm (which must be a CBOE clearing firm) that is representing the order in live trading. If no CMTA (tag 439) firm is present in the order, then the this field represents the OCC clearing firm where the order will clear. Required for all orders sent to CBOE for all roles in all sessions regardless of whether a CMTA firm is given or not. CBOE performs validation checks of ExecBroker against the CBOE Membership system on options orders routed to the W_MAIN session. Broker-Dealer and Firm roles must choose from a list of pre-approved and pre-configured firms and the Market-Maker and DPM roles must use default ExecBroker only. This field is comprised of two components: e*xchange* which contains the exchange code and *firm number*. The *Exchange string* is the exchange on which your order will trade. The exchange portion is alpha only. Please note that you must use a colon : between the exchange and the firm number. If you leave exchange blank but include a firm number, then the exchange defaults to CBOE. If there is no CMTA given in the order, then the ExecBroker *firm number* will be the OCC clearing firm where the order will clear. If there is a CMTA given in the order, then the firm number is the CBOE clearing firm that is representing the order in live trading (post trade processing firm). The firm number portion of the CMTA field is numeric only. Even though the maximum size for the firm number component is 5, CBOE will only read the first three numbers of this field to use as the ExecBroker. In other words, if the desired firm is "123", do not send "00123", send "123".
ClearingOptionalData	9324	M:ABC ABC123ABC	**Orders of origin Customer ("C"):** The first four characters are reported to the last four characters of CBOE Trade Match Optional Data field. These four characters are reported to OCC. Do not put "C:" in this field. **<u>Preferred Market Maker</u>** Firms that give one DPM priority in participating in a trade use this tag. Firm is specified as **P:*firm*;** and can coexist with other data that may be present in this tag. *"Firm"* is the CBOE firm acronym as listed in the Order Test Plan. Please note that the colon : and semi-colon ; are both mandatory.

FIX Tag Name	Tag #	Sample	Description
OrderOrigin	9465	ABC	CBOE knows this as the “originator” field. This field would only be used for orders of origin “M”, “I”, and “N”. It is the three-letter acronym (“badge”) of the market-maker who originates the order. This field will typically be three characters (occasionally two). Orders of origin “M” Orders of origin “M” entered by a broker-dealer role must supply the three-letter acronym (“badge”) of the market-maker. If a broker-dealer role submits an options order of origin “M” on behalf of a CBOE market-maker, then the three-letter (all alpha, all caps) MM acronym must go this tag. The market-maker role does not have to enter this tag when entering orders of origin "M". However, if a market-maker role wishes to enter this tag when entering orders of origin "M", then it may enter the originator acronym into this tag. Orders of origin “I” Orders of origin “I” entered by a broker-dealer role must supply the three-letter acronym (“badge”) of the market-maker. If a broker-dealer role submits an options order of origin “I” on behalf of a CBOE market-maker, then the three-letter (all alpha, all caps) MM acronym must go into the OrderOrigin field (tag 9465). If a broker-dealer role submits an options order of origin “I” on behalf of a CBOE market-maker, then it may also if it wishes put the originator acronym in the originator portion (positions 13-15) of the ClearingOptionalData field (tag 9324). The market-maker role does not have to enter the this tag when entering orders of origin "I". However, if a market-maker role wishes to enter this tag when entering orders of origin "I", then it may enter the originator acronym into either the this field (tag 9465) or the originator portion (positions 13-15) of the ClearingOptionalData field (tag 9324 in FIX). Orders of origin “N” Orders of origin “N” entered by a broker-dealer role must supply the three-letter acronym (“badge”) of the market-maker. If a broker-dealer role submits an options order of origin “N” on behalf of a non-CBOE market-maker (e.g. a CBOE BD role enters an order on behalf of an AMEX market-maker), then the MM acronym must be entered into this tag.
ClearingAccount	440	AB2, ABC, ABC123, QA12, QAB123	CBOE refers to this as the “subaccount” field. CBOE performs no validation checks on this field against the CBOE Membership system. It is optional for all roles. Maximum size is 6 and data type is alphanumeric. For Broker and Firm roles, if subaccount is used then the account field is not required.

Order Contingency Types

The CBOEdirect system only permits one type of order contingency to be specified on each order.

FIX Order Type OrdType(40)

The order type must be specified.
If OrdType = *Market*[“1”] or *Limit*[“2”], then TimeInForce can be > 1 or ExecInst or DiscretionInst can be specified.
If OrdType is any other value besides *Market*[“1”] or *Limit*[“2”], then TimeInForce must *Day*[“0”] or *Good Til Cancel* [“1”] and ExecInst and DiscretionInst cannot be specified.
If OrdType = *Stop*[“3”], then the StopPx(99) field must be provided.

FIX Time in Force TimeInForce(59)

No matter what ExecInst or OrdType is specified the TimeInForce can always be either *Day*[“0”] or *Good Til Cancel* [“1”].
The TimeInForce field can be specified if OrdType = *Market*[“1”] or *Limit*[“2”].
If the TimeInForce field is used for any value other than *Day*[“0”] or *Good Til Cancel* [“1”], then the ExecInst field and the DiscretionInst field cannot be used.

FIX Execution Instruction ExecInst(18)

The execution instructions supported for CBOE options (W_MAIN session) are:
“1” Not Held
“G” All or None (AON)
“f” Intermarket sweep order (ISO) and Intermarket sweep book (ISB)
“n” Do Not Route (CBOE-only)
A maximum of one ExecInst can be specified.
The ExecInst field can be specified if OrdType = *Market*[“1”] or *Limit*[“2”].
If the ExecInst field is used, then the TimeInForce field can only be set to *Day*[“0”] or *Good Til Cancel* [“1”], and the DiscretionInst field cannot be used.

With Discretion Order (DiscretionInst(388), DiscretionOffset(389))

If the order is to be executed with a discretionary amount, the OrdType must be equal *Limit*[“2”], and the DiscretionInst must be equal 0 and the DiscretionOffset must be set to a value between 0.0 and 1.0.
If the DiscretionInst is specified, then the DiscretionOffset must be specified.
If the DiscretionInst and DiscretionOffset are specified, then the ExecInst fields cannot be specified.

Order with Minimum Quantity (MinQty(110))

If a minimum quantity is specified (MinQty > 0), then the TimeInForce can only be set to *Day*[“0”] or *Good Til Cancel* [“1”], and the ExecInst and DiscretionInst cannot be specified.
A minimum quantity (MinQty > 0) can only be specified for OrdType = “1” – Market or OrdType = “2” Limit.

Table 4 Contingency Mapping Table

Contingency	Acronym	OrdType(40)	TimeInForce(59)	ExecInst(18)	Other
Auction		"1=Market" or "2=Limit"	3 = Immediate or Cancel (IOC)		
Market Order		1 = Market	*"0" or "1"*	*Can be specified.*	Price(44) must not be specified.
Limit Order		2 = Limit	*"0" or "1"*	*Can be specified.*	Price(44) must contain a price
Limit Or Better		7 = Limit Or Better	*"0" or "1"*		Price(44) must contain a price
All or None	AON	*"1" or "2"*	*"0" or "1"*	G = All or none (AON)	
Fill or Kill	FOK	*"1" or "2"*	4 = Fill or Kill (FOK)		
Immediate or Cancel	IOC	*"1" or "2"*	3 = Immediate or Cancel (IOC)		
Minimum Quantity	MIN*	*"1" or "2"*	*"0" or "1"*		MinQty(110) must be specified.
Not held	NH	*"1" or "2"*	*"0" or "1"*	1 = Not held	
With Discretion	W/	*"2"* Limit Order only	*"0" or "1"*		DiscretionInst(388) must be specified and set equal to "0." DiscretionOffset(389) must be specified and must be < 1.0.
Opening	OPG	*"1" or "2"*	2 = At the Opening (OPG)		
Stop (Stop Loss)	STP	3 = Stop	*"0" or "1"*		StopPx(99) must be specified.
Market if Touched	MIT*	J = Market if Touched (MIT)	*"0" or "1"*		
Market on Close	MOC	5 = Market on Close	*"0" or "1"*		Price(44) must not be specified
Limit on Close	CLO*	B – Limit on Close	*"0" or "1"*		Price(44) must contain a price
Stop Limit		4 = Stop Limit	*"0" or "1"*		Price(44) must contain a price StopPx(99) must be specified
Intermarket Sweep	ISO	2 = Limit	*"3"*	f = Intermarket sweep order (ISO)	
Intermarket Sweep Book	ISB	2 = Limit	*"0" or "1"*	f = Intermarket sweep book (ISB)	
Reserve			*"0" or "1"*		MaxFloor(111) must be specified
Midpoint Cross		1 = Market	*"0" or "1"*	B = (OK to Cross) Midpoint Cross = Market + OK to Cross	

Contingency	Acronym	OrdType(40)	TimeInForce(59)	ExecInst(18)	Other
Cross		2 = Limit	*"0" or "1"*	B = (OK to Cross) Cross=Limit+OK to Cross	Price(44) Limit price is required
Tied Cross*		2 = Limit	*"0" or "1"*	g=Tied Cross	Price(44) Limit price is required
Autolink Cross		2 = Limit	*"0" or "1"*	h=AutoLink Cross	Price(44) Limit price is required
Autolink Cross Match		2 = Limit	*"0" or "1"*	i=AutoLink Cross Match	Price(44) Limit price is required
Cross_Within*		2 = Limit	*"0" or "1"*	j=Cross_Within	Price(44) Limit price is required
Tied_Cross_Within*		2 = Limit	*"0" or "1"*	k=Tied_Cross_Within	Price(44) Limit price is required
BID_PEG_CROSS		1 = Market	*"0" or "1"*	l=BID_PEG_CROSS (note that is a lower-case "L")	Price(44) must not be specified Need to specify a DiscretionInst (388) of Market Need to specify a DiscretionOffset(389) of the desired value
OFFER_PEG_CROSS		1 = Market	*"0" or "1"*	m=OFFER_PEG_CROSS	Price(44) must not be specified Need to specify a DiscretionInst (388) of Market Need to specify a DiscretionOffset(389) of the desired value
NEXT_DAY_CROSS		2 = Limit	*"0" or "1"*	p=NEXT_DAY_CROSS	Price(44) must contain a price
TWO_DAY_CROSS		2 = Limit	*"0" or "1"*	q=TWO_DAY_CROSS	Price(44) must contain a price
CASH_CROSS		2 = Limit	*"0" or "1"*	o=CASH_CROSS (note this is a lower-case "Oh")	Price(44) must contain a price
Do Not Route				n=Do Not Route	
Wash Trade Prevention	WTP		*"3"*	w=Wash Trade Prevention	

*Currently not supported.

Order contingency types available in CBOE trading sessions

Not all contingency types are available in each trading session. The following table shows the contingency types by trading session.

Table 5 Order Contingency Types for each Trading Session

Contingency	Acronym	CBOE (W_MAIN)	OneChicago Securities Futures (ONE_MAIN)	CBOE Futures Exchange (CFE_MAIN)	CFE Options on Futures (COF_MAIN)	Stock Trading On CBOEdirect (W_STOCK)	CBOE 2 (C2_MAIN)
Market Order		●	●	●	●	● (available only when product is in Open or Fast state)	●
Limit Order		●	●	●	●	●	●
Limit Or Better		●					●
All or None	AON	●	●	●	●	●	●
Fill or Kill	FOK	●	●	●	●	●	●
Immediate or Cancel	IOC	●	●	●	●	●	●
Good Til Cancel	GTC	●	●	●	●		●
Minimum Quantity	MIN*	●					
Not held	NH	●					
With Discretion	W/ or WD	●					
Opening	OPG	●					
Stop (Stop Loss)	STP	●	●	●	●		
Stop Limit		●	●	●	●		
Market if Touched	MIT*	●					
Market on Close	MOC	●					
Limit on Close	CLO*	●					
Intermarket Sweep	ISO	●				●	●
Intermarket Sweep Book	ISB	●					●

Contingency	Acronym	CBOE (W_MAIN)	OneChicago Securities Futures (ONE_MAIN)	CBOE Futures Exchange (CFE_MAIN)	CFE Options on Futures (COF_MAIN)	Stock Trading On CBOEdirect (W_STOCK)	CBOE 2 (C2_MAIN)
Do Not Route		●					●
Reserve*		●				●	●
Midpoint Cross						●	
Cross						●	
Tied Cross*						●	
Autolink Cross						●	
Autolink Cross Match						●	
Cross_Within						●	
Tied_Cross_Within						●	
BID_PEG_CROSS						●	
OFFER_PEG_CROSS						●	
NEXT_DAY_CROSS						●	
TWO_DAY_CROSS						●	
CASH_CROSS						●	
Wash Trade Prevention	WTP	●	●	●	●	●	●

*Currently not supported.

Submitting Strategy (Multi-leg) Orders

Firms use the FIX *New Order—Single* message to transmit new strategy orders to CBOE Markets. For order routing to the CBOE Trading Floor Regular Trading Hours (W_MAIN) session, if the firm wishes to route an order to a specific OMT terminal in the firm's booth, the firm can specify the TargetLocationID[143] in the ***header*** of the order message as described in document FIX-03a. All firms that plan to enter strategy orders should read the document entitled "Testing Strategies on CBOEdirect" that is available for download on the CBOE web site. The firm should also review document FIX-03b, which describes in detail creating and downloading strategy products.

Important Considerations for Cross-Product Strategy Orders

FIX users will have the ability to submit spread orders between products on different underlying securities and different sessions using the *New Order Single Message [35=D]*. A cross-product spread order is an order to Buy or Sell a stated number of Option contracts, and also Buy or Sell the same underlying Stock or Exchange-Traded Fund (ETF) share (Equity contracts), generally, in an amount that would offset (on a one-for-one basis) the option position.

Creating and submitting a Cross-Product Spread Order

To facilitate the trading of the Stock leg, it is important that the order has the correct clearing firm on the Stock leg. If the clearing firm for the Stock leg is the same as that for the Option leg, then orders may be sent in the current FIX format using the *New Order Single Message [35=D]*, with the executing firm in *ExecBroker[Tag76]*. However, if the Option and Stock clearing firm numbers are different, the incoming order must have the Option clearing number in *ExecBroker[Tag76]* and a valid CBSX clearing firm number entered in two separate fields as described below.

- For FIX users using the one-step strategy order entry method, FIX tags *NestedPartyId[Tag524]* and *StockFirmName[Tag9380]* are required and must include the CBSX clearing firm number.
- For FIX users using the two-step strategy order entry method, FIX tags *MultiLegStockClearingFirm[Tag9372]* and *StockFirmName[Tag9380]* are required and must include the CBSX clearing firm number.

Important Considerations for W_MAIN Strategy Orders

- If a W_MAIN strategy order is partially filled, the firm may outright cancel the remaining quantity (cancel the entire order).
- A firm may increase or decrease the quantity of a W_MAIN strategy order by sending a Cancel Replace. The original order will be completely canceled, and the new order will have the higher or lower quantity.
- For partial strategy order fills in the W_MAIN session, CBOE will now send a partial fill report message for the entire strategy product as a whole in addition to the partial fill report message for all strategy legs. Previously, CBOE would not send a partial fill report message for the strategy product as a whole during partial fill reports.
- If a W_MAIN strategy order is partially filled and then the remaining quantity is canceled, the CBOE will now send out a cancel report for the strategy product as a whole in addition to cancel reports for each leg. Previously, if a W_MAIN strategy order was partially filled and then the remaining quantity was canceled, the CBOE would not send out a fill or cancel report for the strategy product as a whole.
- CBOE does allow partial fills that violate the ratio of the strategy product in W_MAIN. In other words, if a firm enters a 10-contract order in a strategy product that was created with a 1:1 ratio, then firm may receive a partial fill of 3 contracts in leg #1 and 9 contracts in leg #2 in a single fill report event.

Scenarios to test the new changes to the FIX 4.2 and CMi method of reporting fill and cancel messages for W_MAIN strategy orders (examples will be released in a later version of this document)

Test Scenario #1:

1. User enters a 10 contract strategy order with ratio 1:1
2. User receives a complete fill of 10:10 contracts
3. CBOE publishes 3 fill report messages: (this remains unchanged)
    a. Complete fill for container order (10 contracts)
    b. Complete fill for leg #1 (10 contracts)
    c. Complete fill for leg #2 (10 contracts)

Test Scenario #2:

1. User enters a 10 contract strategy order with ratio 1:1

2. User successfully cancels the entire order
3. CBOE publishes 3 cancel confirmation messages: (this remains unchanged)
    a. Cancel confirmation for container order: 10 contracts are canceled
    b. Cancel confirmation for leg #1: 10 contracts are canceled
    c. Cancel confirmation for leg #2: 10 contracts are canceled

Test Scenario #3:

4. User enters a 10 contract strategy order with ratio 1:1
5. User receives a partial fill of 3:3 contracts
6. CBOE publishes 3 fill report messages:
    a. Partial fill for container order for 3 contracts
    b. Partial fill for leg #1 for 3 contracts
    c. Partial fill for leg #2 for 3 contracts
7. User receives a complete fill of 7:7 more contracts for 10:10 total
8. CBOE publishes 3 fill report messages:
    a. Complete fill for container order (7 more contracts, 10 contracts total)
    b. Complete fill for leg #1 (7 more contracts, 10 contracts total)
    c. Complete fill for leg #2 (7 more contracts, 10 contracts total)

Test Scenario #4:

4. User enters a 10 contract strategy order with ratio 1:1
5. User receives a partial fill of 3:3 contracts
6. CBOE publishes 3 fill report messages:
    a. Partial fill for container order for 3 contracts
    b. Partial fill for leg #1 for 3 contracts
    c. Partial fill for leg #2 for 3 contracts
7. User successfully cancels the balance of the order
8. CBOE publishes 3 cancel confirmation messages:
    a. Cancel confirmation for container order: 7 contracts are canceled and 3 contracts are filled
    b. Cancel confirmation for leg #1: 7 contracts are canceled and 3 contracts are filled
    c. Cancel confirmation for leg #2: 7 contracts are canceled and 3 contracts are filled

Test Scenario #5:

1. User enters a 10 contract strategy order with ratio 1:1
2. User receives a partial fill of **3:4** contracts (this is highly unlikely, but possible in the W_MAIN session only)
3. CBOE publishes 3 fill report messages:
    a. Partial fill for container order for **3** contracts
    b. Partial fill for leg #1 for **3** contracts
    c. Partial fill for leg #2 for **4** contracts
4. User receives a complete fill of **7:6** more contracts (10:10 total)
5. CBOE publishes 3 fill report messages:
    a. Complete fill for container order (**7** more contracts, 10 contracts total)
    b. Complete fill for leg #1 (**7** more contracts, 10 contracts total)
    c. Complete fill for leg #2 (**6** more contracts, 10 contracts total)

Test Scenario #6:

1. User enters a 10 contract strategy order with ratio 1:1
2. User receives a partial fill of **3:4** contracts
3. CBOE publishes 3 fill report messages:
    a. Partial fill for container order for **3** contracts
    b. Partial fill for leg #1 for **3** contracts
    c. Partial fill for leg #2 for **4** contracts
4. User successfully cancels the balance of the order
5. CBOE publishes 3 cancel confirmation messages:
    a. Cancel confirmation for container order: **6** contracts are canceled and **3** contracts are filled
    b. Cancel confirmation for leg #1: 7 contracts are canceled and 3 contracts are filled
    c. Cancel confirmation for leg #2: 6 contracts are canceled and 4 contracts are filled

Test Scenario #7:
1. User enters a 10 contract strategy order with ratio 1:2 (10:20 total)
2. User receives a partial fill of **3:7** contracts (3:6 would be a 3 round-lot fill)
3. CBOE publishes **2** fill report messages (CBOE does not publish the container fill because the fill quantity of 7 is not evenly divisible by the ratio quantity of 2)
    a. Partial fill for leg #1 for **3** contracts
    b. Partial fill for leg #2 for **7** contracts
4. User successfully cancels the balance of the order
5. CBOE publishes 3 cancel confirmation messages:
    a. Cancel confirmation for container order: **6** contracts are canceled and **0** contracts are filled
    b. Cancel confirmation for leg #1: 7 contracts are canceled and 3 contracts are filled
    c. Cancel confirmation for leg #2: 13 contracts are canceled and 7 contracts are filled

Test Scenario #8:
1. User enters a 10 contract strategy order with ratio 1:2 (10:20 total)
2. User receives a partial fill of **3:8** contracts (3:6 would be a 3 round-lot fill)
3. CBOE publishes 3 fill report messages: (CBOE does publish the container fill because the fill quantity of 8 is evenly divisible by the ratio quantity of 2)
    a. Partial fill for container order for **3** contracts
    b. Partial fill for leg #1 for **3** contracts
    c. Partial fill for leg #2 for **8** contracts
4. User successfully cancels the balance of the order
5. CBOE publishes 3 cancel confirmation messages:
    a. Cancel confirmation for container order: **6** contracts are canceled and **3** contracts are filled
    b. Cancel confirmation for leg #1: 7 contracts are canceled and 3 contracts are filled
    c. Cancel confirmation for leg #2: 12 contracts are canceled and 8 contracts are filled

Test Scenario #9:
1. User enters a 10 contract strategy order with ratio 1:1 (10:10 total)
2. User receives a partial fill of **3:7** contracts.
3. CBOE publishes 3 fill report messages:
    a. Partial fill for container order for **3** contracts
    b. Partial fill for leg #1 for **3** contracts
    c. Partial fill for leg #2 for **7** contracts
4. User wishes to cancel/replace quantity of order down to 6 contracts of the strategy order.
5. CBOE calculates highest filled leg (7) and cancels remaining (10 –7 = 3) from the original contract for the strategy order. Publishes 3 cancel confirmation messages:
    a. Cancel confirmation for container order: **3** contracts are canceled and **3** contracts are filled.
    b. Cancel confirmation for leg #1: **7** contracts are canceled and **3** contracts are filled
    c. Cancel confirmation for leg #2: **3** contracts are canceled and **7** contracts are filled
6. A new order is issued for 6 contracts, with 3 confirmation messages:
    a. New order of **6** for container order
    b. New order of **6** for leg #1
    c. New order of **6** for leg #2

Important Considerations for ONE_MAIN and CFE_MAIN (electronic session) Strategy (Multi-leg) FIX 4.2 Cancel Replace orders

ONE_MAIN and CFE_MAIN (electronic session) strategy FIX 4.2 Cancel Replace orders function the same way as FIX 4.2 single-leg cancel-replace orders. CBOE takes the OrderQty [tag 38] in the firm's strategy order Cancel Replace Request message and subtracts the total quantity traded (the sum of all partial fill reports) from the original strategy order that is being canceled. CBOE does not subtract the partially traded quantity from all previous orders connected to the original order, only the most recent one that is being canceled as part of the Cancel Replace request. CBOE uses this quantity (new order's CXL/RPL tag 38 minus the old order's total quantity traded) as the quantity of the new order to be booked that is replacing the old order. This logic prevents a FIX 4.2 order

entry user from accidentally overfilling an order if a Cancel Replace Request and a fill report pass in flight. This logic meets FIX 4.2 standard specification.

Important Considerations for Strategy (Multi-leg) FIX 4.2 Cancel Replace orders in all sessions

If a FIX 4.2 strategy order is Cancel Replaced multiple times, CBOE only maintains order history for the current strategy order, and the most recent strategy order canceled. This is the same behavior for single-leg FIX 4.2 orders. So if a FIX 4.2 strategy order were cancel replaced 3 times (a total of 4 orders), CBOE would only maintain the history for orders 3 and 4. Order history for orders 1 and 2 would still be available through a query of Order Status, but they would not be connected with orders 3 and 4 as part of the Cancel Replace sequence. This logic does not meet FIX 4.2 standard specification.

Busts of Strategy Order Fills

CBOE does not support strategy order busts electronically in any session. In W_MAIN, however, CBOE can manually bust a strategy order trade. Therefore, you should allow your traders to manually change their positions on the fly. In purely electronic sessions that do not interact with the trading floor, CBOE does not support strategy order busts in any fashion, manually or electronically.

Strategy Order Contingencies

IOC contingencies are available in CBOEdirect and must be used with M-origin strategy orders attempting to trade with booked strategy orders..

Strategy Order Entry Method 1:

The current method for entering strategy orders involves the user defining (creating) the strategy product (see document FIX-03b). CBOE then returns the SecurityID[48], which the CBOE also calls the product key. The user then enters an order as described below using method 1.

Table 6 New Strategy 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	This is identical to the "New Order Single Message" format for single-leg orders.
109	ClientID	N	N	This is identical to the "New Order Single Message" format for single-leg orders.
76	ExecBroker	N	**Y**	This is identical to the "New Order Single Message" format for single-leg orders.
1	Account	N	N	This is identical to the "New Order Single Message" format for single-leg orders.
21	HandlInst	Y	Y	This is identical to the "New Order Single Message" format for single-leg orders.
18	ExecInst	N	N	CBOE currently does not accept strategy contingency orders.
110	MinQty	N	N	CBOE currently does not accept strategy contingency orders.
100	ExDestination	N	N	This is identical to the "New Order Single Message" format for single-leg orders.
55	Symbol	Y	Y	Even though FIX specification requires tag 55 on strategy orders, CBOEdoes not validate the content of this tag. The firm can use any value. CBOE recommends entering the underlying symbol (IBM, OEX, MSFT) for clarity.

9.0.2

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
48	SecurityID	N	**Y**	**This field, also known as the CBOEdirect product key, is *required* for strategy (multi-leg) products, except for strategies with the "one-step" method.** **This field is required for internalization strategy orders, except for strategies with the "one-step" method.** The user obtains the SecurityID via the Security Definition portion of the FIX-03B document.
22	IDSource	N	N	Field will be set to "8" (Exchange Symbol) on messages sent to firms. 8 = Exchange Symbol
167	SecurityType	N	Y	Required 'OPT' for options, CS, FUT, INDX, MLEG, USTB
200	MaturityMonthYear	N	Y	Format: YYYYMM (e.g., `200209`)
205	MaturityDay	N	Y	Specifies the maturity day of the product.
201	PutOrCall	N	Y	Required for Option products. 0 = Put, 1 = Call
202	StrikePrice	N	Y	Required for Option products
54	Side	Y	Y	For orders of type MLEG (strategies), CBOE supports the following values: 1 = **Same (as defined)** ***or*** B = **Same (as defined)** 2 = **Opposite** ***or*** C=**Opposite** **CBOE does not use "Buy" and "Sell" designations for strategy orders.**
38	OrderQty	N	**Y**	Quantity specified on the original request message from the firm.
40	OrdType	Y	Y	Possible Values: 1 = Market 2 = Limit CBOE currently does not accept strategy contingency orders.
44	Price	N	N	**All orders**: Price per contract – should be specified for all limit orders; Price should not be specified on market orders. **Debit Strategy Orders**: Use a negative price. e.g. (Debit 5.2) = -5.2 **Credit Strategy Orders**: Use a positive price as you would for a single leg order. e.g. (Credit 5.2) = 5.2
99	StopPx	N	N	CBOE currently does not accept strategy contingency orders.
59	TimeInForce	N	N	**Options and Futures**: Specifies how long the order remains in effect. Absence of this tag is interpreted as DAY. Valid values (Refer to Contingency Mapping Table): 0 = Day 1 = GTC 3 = IOC
47	Rule80A	N	N	This is identical to the "New Order Single Message" format for single-leg orders.
60	TransactTime	Y	Y	Time order is submitted in UTC time

9.0.2

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
77	OpenClose	N	N	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 Customer ("C") options orders. Ignored for Firm ("F") orders. Orders of all other origins in W_MAIN may use this tag or leave it out of the order. Orders of all origins in non-W_MAIN sessions may use this tag or leave it out of the order.
203	CoveredOrUncovered	N	N	This is identical to the "New Order Single Message" format for single-leg orders.
204	CustomerOrFirm	N	N	This is identical to the "New Order Single Message" format for single-leg orders.
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**	This is identical to the "New Order Single Message" format for single-leg orders.
End Repeating Group				
388	DiscretionInst	N	N	This is identical to the "New Order Single Message" format for single-leg orders.
389	DiscretionOffset	N	N	This is identical to the "New Order Single Message" format for single-leg orders.
439	ClearingFirm	N	N	This is identical to the "New Order Single Message" format for single-leg orders.
440	ClearingAccount	N	N	This is identical to the "New Order Single Message" format for single-leg orders.
CBOE Custom Fields				
9324	ClearingOptionalData	N	Y	This is identical to the "New Order Single Message" format for single-leg orders. For Delta Neutrals: Instructions to TPF are passed in this tag. Delta Neutral Instructions to TPF are a maximum of 24 characters in length, and are delimited by a leading digraph ("X:"), and terminated by a semi-colon (";").
9369	PriceProtectionScope	N	N	Defines the type of price protection the customer requires on their order Valid values: 0 = None 1 = Local (Exchange, ECN, ATS) 2 = National (Across all national markets) 3 = Global (Across all markets) Used in message types: 8(n), D(n), G(n)

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
9370	MultiLegPositionEffects	N	N	O = Open C = Close This is an array of open / close codes that should only be used for multi-leg (strategy) orders. This tag is optional. The value "N" (neither) is not supported in this tag. The 1st character is always the PositionEffect of the 1st leg, the 2nd character is the PositionEffect of the 2nd leg, etc. If one of the legs is an equity leg (as in buy_writes), then the firm needs to supply an "O" or "C" code as a dummy value. CBOE will not maintain this dummy value with the leg. Possible values for 2-leg strategy products: OO, OC, CO, CC Possible values for 3-leg strategy products: OOO, OOC, OCO, COO, OCC, COC, CCO, CCC Possible values for 4-leg strategy products: OOOO, OOOC, OOCO, COCO, etc.
9371	MultilegCoveredOrUncovered	N	N	0 = Covered 1 = Uncovered This is an array of Covered and Uncovered codes that should only be used for multi-leg (strategy) orders. This tag is optional. The value "N" (neither) is not supported in this tag. The 1st character is always the CoveredOrUncovered of the 1st leg, the 2nd character is the CoveredOrUncovered of the 2nd leg, etc. If one of the legs is an equity leg (as in buy_writes), then the firm needs to supply a "0" or "1" code as a dummy value. CBOE will not maintain this dummy value with the leg. Possible values for 2-leg strategy products: 00, 01, 10, or 11 Possible values for 3-leg strategy products: 000, 001, 010, 100, 011, 101, 110, 111 Possible values for 4-leg strategy products: 0000, 0001, 0010, 1010, etc.
9372	MultilegStockClearingFirm	N	N	The Clearing firm for the stock leg of a multileg option strategy added for complex order support in FIX 4.2. Used to specify the stock clearing firm for the stock leg of a combination stock – derivative strategy, such as a buy-write where the option clearing firm number and stock clearing firm number are different.
9379	MultilegPricePerLeg	N	N	Used for submitting "Delta-Neutral" Orders. This field is used to specify individual leg prices as a comma delimited list of prices. It is important to know whether the strategy was created with the legs "As Defined" or "Opposite." The leg prices will be applied to the systems leg's order descriptions, irrespective of the order in the Security Definition Request. **Note**: If you are using this tag to enter prices for the legs, then you cannot specify a price on the package using the Price [44] field.

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
9380	StockFirmName	N	N	Buy_writes: used to specify where the equity leg of the buy_write strategy is to be executed. This field is recommended for buy_writes, but not required. This tag is usually accompanied with the use of tag 9381, and the combination is often referred to "Meets and Exchange". Values are: CBOE="W"; CINCINNATI = "C"; AMERICAN= "A"; BOSTON="B"; CHICAGO="MW"; NASDAQ="O'; NYSE="N"; PACIFIC="P"; PHILIDELPHIA="PH"; Used to specify the equity clearing firm number for cross-product buy_writes when the stock clearing firm number is different from the option clearing firm number.
9381	StockFirmNameKey	N	N	A text field that is used to specify the contact at the specified Exchange that will facilitate the trading of the equity portion of the buy_write. This tag is usually accompanied with the use of tag 9380, and the combination is often referred to "Meets and Exchange".
9321	SecondaryClOrdID	N	N	Used when counterparties require a secondary client order id. Will be replaced by FIX 4.3 field of the same name.
9465	OrderOrigin	N	N	If a Broker_Dealer enters an order on behalf of a CBOE market-maker on the trading floor, the market-maker's acronym must be entered in this tag. The default exchange is CBOE, but an exchange may be specified. This is also called "Originator". CBOE:ABC *-or you may enter-* ABC
9467	EquitySession	N	N	For Buy_writes. Used to specify which "Session" the Equity Leg of the strategy product can be found. Currently, there is only one supported EquitySession value, which is the default ("Underlying").
20101	ShortSaleIndicator	N	Y	Valid values for short sale positions: 1 = Buy 2 = Sell 5 = Sell_Short 6 = Sell_Short_Exempt
	Standard Trailer	Y	Y	

Automated Improvement Mechanism (AIM) for Strategy Orders

A Firm that wants to trade strategy orders against its own book must first expose the orders to the market. These strategy orders participate in an automated auction referred to as Automated Improvement Mechanism (AIM) to provide some assurance that they are executed at the best price. Firms will use the FIX *New Order – List* message to submit paired strategy orders for internalization. The message must contain a primary order and a match order. The user submitting the two orders wishes to trade the match order with the primary order. Refer to the section on '*Creating and submitting paired orders using the New Order - List Message (MsgType=E)* in this document which describes internalization and auction considerations as well as auction participation.

9.0.2

Paired Strategy Order Entry Method 1:

The current method for entering paired strategy orders involves the user defining (creating) the strategy product (see document FIX-03b). CBOE then returns the SecurityID [48], which the CBOE also calls the product key. The user then enters a paired order using the *New Order - List Message (MsgType=E)* with the SecurityID [48] tag in the *New Strategy Order—Single Message (MsgType=D)* populated for each order on the Order List message.

New Order - List Message using the "Disclosed" convention

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
	Standard Header	Y	Y	*MsgType[35]* = E
66	ListID	Y	N	Must be unique, by customer, for the day
394	BidType	Y	Y	2=Disclosed
68	TotNoOrders	Y	Y	Used to support fragmentation. Sum of NoOrders across all messages with the same ListID. Value=2
9382	MatchType	N	Y	Internalizing Firm can set the price for its side of the order. 1=guaranteed price (not currently supported), 2=limit price, 3=auto match Values from cmiOrder::MatchType.
73	NoOrders	Y	Y	Number of orders in this message Value=2
Begin Repeating Group for NoOrders				
INSERT NEW STRATEGY ORDER SINGLE TAGS HERE. USE SAME TAGS AS YOU WOULD FOR A STRATEGY ORDER.				
67	ListSeqNo	Y	Y	Order number within the list.
End Repeating Group for NoOrders				
	Standard Trailer	Y	Y	

Strategy Order Examples

Scenario1 – Strategy created As Defined

Request

```
[8=FIX.4.2_9=0193_35=c_34=21_49=CBOE2_56=AFIX203_52=20050323-
16:18:28_320=FSO.30_321=1_55=DELL_336=ONE_MAIN_167=MLEG_146=2_311=DELL1C_310=FUT_31
3=200510_54=1_319=1.0_311=DELL1C_310=FUT_313=200512_54=2_319=1.0_10=206_]
```

Response

```
[8=FIX.4.2_9=0304_35=d_34=21_49=AFIX203_56=CBOE2_52=20050323-
16:18:29_320=FSO.30_322=1111594709553_323=1_55=DELL_48=10682405_22=8_167=MLEG_336=O
NE_MAIN_393=1_146=2_311=DELL1C_309=10682388_305=8_310=FUT_313=200510_315=0_316=0_30
8=W_319=1_54=1_311=DELL1C_309=10682390_305=8_310=FUT_313=200512_315=0_316=0_308=W_3
19=1_54=2_10=067_]
```

Scenario2 – Strategy created is Opposite to the Request

Request

```
[8=FIX.4.2_9=0193_35=c_34=24_49=CBOE2_56=AFIX203_52=20050323-
16:19:48_320=FSO.40_321=1_55=DELL_336=ONE_MAIN_167=MLEG_146=2_311=DELL1C_310=FUT_31
3=200510_54=2_319=1.0_311=DELL1C_310=FUT_313=200512_54=1_319=1.0_10=213_]
```

Response

```
[8=FIX.4.2_9=0304_35=d_34=24_49=AFIX203_56=CBOE2_52=20050323-
16:19:48_320=FSO.40_322=1111594788242_323=2_55=DELL_48=10682405_22=8_167=MLEG_336=O
NE_MAIN_393=1_146=2_311=DELL1C_309=10682388_305=8_310=FUT_313=200510_315=0_316=0_30
8=W_319=1_54=1_311=DELL1C_309=10682390_305=8_310=FUT_313=200512_315=0_316=0_308=W_3
19=1_54=2_10=076_]
```

Submit Strategy Order Request

```
8=FIX.4.2^ 9=0199^ 35=D^ 34=4^ 49=ZZCBOE4^ 56=DFIX203^ 52=20020923-15:53:52^
11=SAM0001-20020923^ 76=690^ 21=1^ 55=NDX^ 48=9109511^ 167=MLEG^ 207=CBOE^ 54=C^
38=10^ 40=2^ 44=-2.8^ 59=0^ 77=O^ 204=0^ 60=20000306-12:00:00^ 386=1^ 336=W_MAIN^
10=200^
```

Submit Strategy Order Response

One response for the strategy order, and one response for each of its legs.

```
8=FIX.4.2^ 9=0318^ 35=8^ 34=6^ 49=DFIX203^ 56=ZZCBOE4^ 52=20020923-15:54:06^ 6=0^
11=SAM0001-20020923^ 14=0^ 84=0^ 426=0^ 425=0^ 424=10^ 389=0^ 76=CBOE:690^ 17=1^
20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=10^ 77=O^ 37=493:15636^ 38=10^ 39=0^ 40=2^ 44=-
2.800000001^ 201=0^ 47=C^ 107=2^ 207=W^ 48=9109511^ 167=MLEG^ 54=2^ 202=0^ 55=CSCO^
59=0^ 336=W_MAIN^ 60=20020923-15:54:07^ 9369=1^ 10=219^

8=FIX.4.2^ 9=0344^ 35=8^ 34=7^ 49=DFIX203^ 56=ZZCBOE4^ 52=20020923-15:54:06^ 6=0^
11=SAM0001-20020923^ 14=0^ 84=0^ 426=0^ 425=0^ 424=10^ 389=0^ 76=CBOE:690^
17=200209231054070852:0^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=10^ 205=17^ 200=200401^
442=3^ 77=O^ 37=493:15636^ 38=10^ 39=0^ 40=2^ 44=0^ 201=1^ 47=C^ 207=W^ 48=199339^
167=OPT^ 54=2^ 202=17.5^ 55=LCY^ 59=0^ 336=W_MAIN^ 60=20020923-15:54:07^ 9369=1^
10=201^

8=FIX.4.2^ 9=0344^ 35=8^ 34=8^ 49=DFIX203^ 56=ZZCBOE4^ 52=20020923-15:54:06^ 6=0^
11=SAM0001-20020923^ 14=0^ 84=0^ 426=0^ 425=0^ 424=10^ 389=0^ 76=CBOE:690^
17=200209231054070857:1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=10^ 205=17^ 200=200401^
442=3^ 77=O^ 37=493:15636^ 38=10^ 39=0^ 40=2^ 44=0^ 201=0^ 47=C^ 207=W^ 48=199340^
167=OPT^ 54=2^ 202=17.5^ 55=LCY^ 59=0^ 336=W_MAIN^ 60=20020923-15:54:07^ 9369=1^
10=199^
```

Strategy Order Cancel/Replace Request

```
8=FIX.4.2^ 9=0211^ 35=G^ 34=5^ 49=ZZCBOE4^ 56=DFIX203^ 52=20020923-15:54:10^
11=SAM0002-20020923^ 41=SAM0001-20020923^ 76=690^ 21=1^ 55=NDX^ 48=9109511^
167=MLEG^ 207=CBOE^ 54=C^ 38=20^ 40=1^ 59=1^ 77=O^ 204=0^ 60=20000306-12:00:00^
386=1^ 336=W_MAIN^ 10=083^
```

Strategy Order Cancel/Replace Response

There will be one "pending replace" response for the strategy order being replaced, one "pending new" response for the new strategy order, and one "pending new" response for each of its legs.

```
8=FIX.4.2^ 9=0223^ 35=8^ 34=9^ 49=DFIX203^ 56=ZZCBOE4^ 52=20020923-15:54:11^ 6=0^
11=SAM0002-20020923^ 14=0^ 84=0^ 76=690^ 17=200209231054120166:0^ 20=0^ 150=E^ 31=0^
32=0^ 151=10^ 37=493:15636^ 38=20^ 39=E^ 40=1^ 41=SAM0001-20020923^ 167=MLEG^ 54=C^
55=NDX^ 9369=1^ 10=083^

8=FIX.4.2^ 9=0303^ 35=8^ 34=10^ 49=DFIX203^ 56=ZZCBOE4^ 52=20020923-15:54:11^ 6=0^
11=SAM0002-20020923^ 14=0^ 84=0^ 426=0^ 425=0^ 424=20^ 389=0^ 76=CBOE:690^ 17=1^
20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=20^ 77=O^ 37=493:15642^ 38=20^ 39=0^ 40=1^ 201=0^
47=C^ 107=2^ 207=W^ 48=9109511^ 167=MLEG^ 54=2^ 202=0^ 55=CSCO^ 59=1^ 336=W_MAIN^
60=20020923-15:54:12^ 9369=1^ 10=013^
```

```
8=FIX.4.2^ 9=0345^ 35=8^ 34=11^ 49=DFIX203^ 56=ZZCBOE4^ 52=20020923-15:54:11^ 6=0^
11=SAM0002-20020923^ 14=0^ 84=0^ 426=0^ 425=0^ 424=20^ 389=0^ 76=CBOE:690^
17=200209231054120436:0^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=20^ 205=17^ 200=200401^
442=3^ 77=O^ 37=493:15642^ 38=20^ 39=0^ 40=1^ 44=0^ 201=1^ 47=C^ 207=W^ 48=199339^
167=OPT^ 54=2^ 202=17.5^ 55=LCY^ 59=1^ 336=W_MAIN^ 60=20020923-15:54:12^ 9369=1^
10=232^

8=FIX.4.2^ 9=0345^ 35=8^ 34=12^ 49=DFIX203^ 56=ZZCBOE4^ 52=20020923-15:54:11^ 6=0^
11=SAM0002-20020923^ 14=0^ 84=0^ 426=0^ 425=0^ 424=20^ 389=0^ 76=CBOE:690^
17=200209231054120439:1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=20^ 205=17^ 200=200401^
442=3^ 77=O^ 37=493:15642^ 38=20^ 39=0^ 40=1^ 44=0^ 201=0^ 47=C^ 207=W^ 48=199340^
167=OPT^ 54=2^ 202=17.5^ 55=LCY^ 59=1^ 336=W_MAIN^ 60=20020923-15:54:12^ 9369=1^
10=228^
```

Strategy Order Cancel Request

```
8=FIX.4.2^ 9=0168^ 35=F^ 34=6^ 49=ZZCBOE4^ 56=DFIX203^ 52=20020923-15:54:15^
11=SAM0003-20020923^ 41=SAM0002-20020923^ 76=690^ 55=NDX^ 48=9109511^ 167=MLEG^
207=CBOE^ 54=C^ 38=20^ 60=20000306-12:00:00^ 10=031^
```

Strategy Order Cancel Response

```
8=FIX.4.2^ 9=0219^ 35=8^ 34=13^ 49=DFIX203^ 56=ZZCBOE4^ 52=20020923-15:54:14^ 6=0^
11=SAM0003-20020923^ 14=0^ 84=0^ 76=690^ 17=200209231054150512:0^ 20=0^ 150=6^ 31=0^
32=0^ 151=20^ 37=493:15642^ 38=20^ 39=6^ 41=SAM0002-20020923^ 167=MLEG^ 54=C^
55=NDX^ 9369=1^ 10=147^
```

Buy_Write Strategy Order Request

```
8=FIX.4.2^ 9=0187^ 35=D^ 34=9^ 49=ATG2_1^ 56=HFIX201^ 52=20031125-19:45:03^
11=NOV2502-20031125^ 76=551^ 21=1^ 55=IBM^ 167=MLEG^ 48=124977152^ 40=1^ 54=1^ 38=1^
59=0^ 77=O^ 47=C^ 203=0^ 60=20030612-12:00:00^ 386=1^ 336=W_MAIN^ 10=034^
```

Enter Strategy Order Responses

```
8=FIX.4.2^ 9=0339^ 35=8^ 34=9^ 49=HFIX201^ 56=ATG2_1^ 52=20031125-19:45:05^ 6=0^
11=NOV2502-20031125^ 14=0^ 84=0^ 426=0^ 425=0^ 424=1^ 389=0^ 76=CBOE:551^
17=10326:13022.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=1^ 77=O^ 37=10326:13022^
38=1^ 39=0^ 40=1^ 201=0^ 47=C^ 107=BUY_WRITE^ 207=W^ 48=124977152^ 167=MLEG^ 54=1^
202=0^ 55=IBM^ 59=0^ 336=W_MAIN^ 60=20031125-19:45:06^ 9465=CBOE:SJM^ 9369=2^
10=157^

8=FIX.4.2^ 9=0338^ 35=8^ 34=10^ 49=HFIX201^ 56=ATG2_1^ 52=20031125-19:45:05^ 6=0^
11=NOV2502-20031125^ 14=0^ 84=0^ 426=0^ 425=0^ 424=1^ 389=0^ 76=CBOE:551^
17=10326:13022.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=100^ 442=3^ 77=O^
37=10326:13022^ 38=100^ 39=0^ 40=1^ 44=0^ 201=0^ 47=C^ 207=W^ 48=69213921^ 167=CS^
54=2^ 202=0^ 55=IBM^ 59=0^ 336=W_MAIN^ 60=20031125-19:45:06^ 9465=CBOE:SJM^ 9369=2^
10=242^

8=FIX.4.2^ 9=0356^ 35=8^ 34=11^ 49=HFIX201^ 56=ATG2_1^ 52=20031125-19:45:05^ 6=0^
11=NOV2502-20031125^ 14=0^ 84=0^ 426=0^ 425=0^ 424=1^ 389=0^ 76=CBOE:551^
17=10326:13022.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=1^ 205=22^ 200=200311^
442=3^ 77=O^ 37=10326:13022^ 38=1^ 39=0^ 40=1^ 44=0^ 201=1^ 47=C^ 207=W^
48=118494688^ 167=OPT^ 54=1^ 202=100^ 55=IBM^ 59=0^ 336=W_MAIN^ 60=20031125-
19:45:06^ 9465=CBOE:SJM^ 9369=2^ 10=097^
```

Strategy Order with Optional Open/Close Positions Specified Request

In this Order, the MultiLegPositionEffect **(tag 9370)** is used to request that the 1st leg of the strategy to have a Closed Position, and the 2nd leg's position will be Open. **This order refers to the order of the legs as returned in the Strategy Definition (35=d) message.**

```
8=FIX.4.2^ 9=290^ 35=D^ 49=AATG2^ 56=HFIX303^ 34=68^ 50=MWM1:MWM1^ 57=PROD^
143=BARTID=1^ 52=20040130-14:02:28^ 11=LIQ0006-20040130^ 109=STC^ 76=352^ 21=2^
```

```
55=APC^ 48=135397666^ 167=MLEG^ 54=1^ 38=16^ 40=1^ 59=0^ 47=C^ 60=20040130-14:02:28^
386=1^ 336=W_MAIN^ 9321=REQ_7^ 9324=BEAR^ 9370=CO^ 10=208^
```

Strategy Order with Optional Open/Close Positions Fill Reports

When the Fill Execution Reports for the separate legs are returned, see that the MultiLegPostionEffects specified in (tag 9370) tag are returned as simple PositionEffects (tag 77). Also, see that the Fill Report on the strategy order itself has no PostionEffect specified. Note that for brevity's sake, some messages in this example have been omitted.

```
8=FIX.4.2^ 9=0582^ 35=8^ 34=189^ 49=HFIX303^ 56=AATG2^ 52=20040130-14:33:31^
57=MWM1:MWM1^ 1=MWM1^ 6=0^ 109=STC^ 11=LIQ0006-20040130^ 14=16^ 84=0^ 426=0^ 425=0^
424=0^ 389=0^ 76=CBOE:352^ 17=14230:45331.0:0.2 1075473211144^ 20=0^ 150=2^ 22=8^
31=2.05^ 32=16^ 151=0^ 205=21^ 200=200402^ 442=2^ 382=2^ 375=CBOE:551^ 337=CUT^
437=8^ 438=20040130-14:33:31^ 375=CBOE:325^ 337=JWA^ 437=8^ 438=20040130-14:33:31^
77=C^ 37=14230:45331^ 38=16^ 39=2^ 40=1^ 44=0^ 201=1^ 47=C^ 207=W^ 48=106627800^
167=OPT^ 54=1^ 202=47.5^ 55=APC^ 59=0^ 336=W_MAIN^ 60=20040130-14:33:31^ 9324=BEAR^
9321=REQ_7^ 9433=XXH^ 9465=CBOE:MWM1^ 9369=2^ 10=033^
```

Strategy Order Entry Method 2:

The new method for entering strategy orders is a one-step process. The user will enter an order using the New Order Single Request Message [35=D]. The user will specify in that message what the legs are for the strategy product.

The following tags must be used in addition to the other required tags in the New Order Single Request Message [35=D] to support the Leg details on the FIX one-step strategy new order entry.

Table 7 New Strategy Order—Single Message

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
555	NoLegs	N	Y	Required for options, futures, the common stock leg of buy_writes.
Begin Repeating Group for NoLegs				
609	LegSecurityType	N	Y	This should be the first tag in the repeating group. The other tags below can be in any order. Required for options, futures, the common stock leg of buy_writes.
600	LegSymbol	N	Y	This is the reporting class of the leg (IBM, IBJ, IBW, MSFT1C, etc.) For Buy writes it would be stock symbol. Required for options, futures, the common stock leg of buy_writes.
602	LegSecurityID	N	N	Optional for options, futures, the common stock leg of buy_writes.
610	LegMaturityMonthYear	N	Y	YYYYMM - Required for options, futures, the common stock leg of buy_writes. After Option Symbology is enabled, this tag will no longer be valid. Users must use LegMaturityDate[611].
611	LegMaturityDate	N	Y	YYYYMMDD - Required for options, futures, the common stock leg of buy_writes.
624	LegSide	N	Y	Required for options, futures, the common stock leg of buy_writes. Stock valid values 1 = Buy 2 = Sell 5 = Sell_Short 6 = Sell_Short_Exempt
612	LegStrikePrice	N	Y	Required for options.

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Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
613	LegOptAttribute	N	Y	For LegPutOrCall. Required for options.
623	LegRatioQty	N	Y	Required for options, futures, the common stock leg of buy_writes. See notes below.
654	LegRefId	N	N	Optional for options, futures, the common stock leg of buy_writes.
565	LegCoveredOrUncovered	N	N	Optional for options and futures. N/A for the common stock leg of buy_writes.
564	LegPositonEffect	N	N	Optional for options and futures. N/A for the common stock leg of buy_writes.
566	LegPrice	N	N	Optional for options, futures, the common stock leg of buy_writes.
524	NestedPartyId	N	N	For MultiLegStockClearingFirm. Optional for all product types.
End Repeating Group for NoLegs				

Paired Strategy Order Entry Method 2:

The second method for entering paired strategy orders is a one-step process. The user will enter an order using the *New Order - List Message (MsgType=E).* The user will specify in that message what the legs are for the strategy product. This will be done for each order on that Order List.

New Order - List Message using the "Disclosed" convention

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
	Standard Header	Y	Y	*MsgType[35]* = E
66	ListID	Y	N	Must be unique, by customer, for the day
394	BidType	Y	Y	2=Disclosed
68	TotNoOrders	Y	Y	Used to support fragmentation. Sum of NoOrders across all messages with the same ListID. Value=2
9382	MatchType	N	Y	Internalizing Firm can set the price for its side of the order. 1=guaranteed price (not currently supported), 2=limit price, 3=auto match Values from cmiOrder::MatchType.
73	NoOrders	Y	Y	Number of orders in this message Value=2
Begin Repeating Group for NoOrders				
INSERT NEW STRATEGY ORDER SINGLE TAGS HERE. USE SAME TAGS AS YOU WOULD FOR A STRATEGY ORDER.				
67	ListSeqNo	Y	Y	Order number within the list.
End Repeating Group for NoOrders				
	Standard Trailer	Y	Y	

The following tags must be used in addition to the other required tags on each order of the *New Order - List Message (MsgType=E)* to support the Leg details on the FIX one-step strategy new order entry. The message flow considerations are the same as in the case of the *New Strategy Order—Single Message (MsgType=D).*

Please note that the tags used to define the legs are different than those on the One Step Method for *New Strategy Order—Single Message (MsgType=D).*

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New Strategy Order—Single Message

TAG	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 Usage
6706	NoOfLegsList	N	Y	Required for options, futures, the common stock leg of buy_writes.
Begin Repeating Group for NoOrders				
6711	LegSecurityTypeList	N	Y	Required for options, futures, the common stock leg of buy_writes.
6712	LegSymbolList	N	Y	This is the reporting class of the leg (IBM, IBJ, IBW, MSFT1C, etc.) For Buy writes it would be stock symbol. Required for options, futures, the common stock leg of buy_writes.
6713	LegSecurityIdList	N	Y	Optional for options, futures, the common stock leg of buy_writes.
6714	LegSideList	N	Y	Required for options, futures, the common stock leg of buy_writes. Stock valid values for short sale position are: 1 = Buy 2 = Sell 5 = Sell_Short 6 = Sell_Short_Exempt
6715	LegRatioQtyList	N	Y	Required for options, futures, the common stock leg of buy_writes.
6716	LegPriceList	N	Y	Optional for options, futures, the common stock leg of buy_writes.
6717	LegMaturityMonthYearList	N	Y	YYYYMM - Required for options, futures, the common stock leg of buy_writes. After Option Symbology is enabled, this tag will no longer be valid. Users must use LegMaturityDayList [6708].
6718	LegStrikePriceList	N	Y	Required for options.
6708	LegMaturityDayList	N	Y	YYYYMMDD - Required for options.
6719	LegOptAttributeList	N	Y	For LegPutOrCall. Required for options.
6720	LegCoveredUncoveredList	N	Y	Optional for options and futures. N/A for the common stock leg of buy_writes.
6721	LegPositionEffectList	N	Y	Optional for options and futures. N/A for the common stock leg of buy_writes.
6722	LegRefIdList	N	Y	Optional for options, futures, the common stock leg of buy_writes
6707	NestedPartyIdList	N	Y	For MultiLegStockClearingFirm. Optional for all product types.
End Repeating Group for NoOrders				

The message flow will be as shown below:

	Firm	Direction	CBOE
1	Firm sends in a New Order Single Request message [35=D] with all the leg details	→	Accepts Order for processing. Creates the strategy if it is not already defined and submits the order for processing
2a		←	If the leg details were not specified in the desired format or if the leg products are not found, the order will be rejected via an Execution Report with Rejected Status and the reject reason will be available on the Text [tag 58] field.
2b		←	For a valid Request and valid leg products CBOE sends

	Firm	Direction	CBOE
			an Execution Report for the Strategy order with the Strategy product key in tag Security Id [tag 48] on the Main Strategy Report.
2c		←	If the server rejected the order due to a race condition in our backend server our CBOE's FIX server would retry sending the order again after N seconds where N will be configurable. If the order is rejected again after N seconds an Execution report with order status Rejected will be generated and sent.

Note:

1. If the strategy requested has already been defined in the system in an opposite manner then CBOE will automatically change the Side on the Order Request. The changed side will be available in Side [tag 54] on the Main Report of the New Order Execution report.
2. The support of Leg definition is only applicable on New Order Single Message and not on Cancel Replace message since the strategy must have been already defined at that point. Firms must use the strategy product key returned on New Order Status for the rest of their requests relating to that order.
3. This model only supports strategy definition by legs.
4. The tags must be specified in the correct order as shown in example below. Tag 609 must be the first tag in the repeating group as shown below.
5. If LegSecurityId [tag 602] is specified then rest of the leg information tags need not be specified.
6. The values submitted using [tag 623] are reduced to the lowest common denominator before being used to look up or create a strategy product. Strategy products are only available in a lowest common denominator formulation. This should be taken into account in determining what OrderQty to specify. LegRatioQty values that are not in lowest common denominator form will cause the Strategy order submission to be rejected.

Examples:

Scenario1 – Strategy created As Defined

Request:

New Order Single Request for a MultiLeg Vertical Order (Leg 1 – **Buy** DJV 200405 105 Call; Leg 2 **Sell** DJV 200405 103 Call)

8=FIX.4.2^ 9=306^ 35=D^ 49=AATG1^ 56=AFIX201^ 34=1876^ 50=A11:A11^ 57=PROD^ 143=BARTID=6^ 52=20040403-13:09:00^ 11=AAA0001-20040403^ 109=ABC^ 76=840^ 21=2^ 55=DJX^ 167=MLEG^ **54=1**^ 38=20^ 40=2^ 44=0.50^ 59=0^ 47=C^ 60=20040403-13:09:00^ 386=1^ 336=W_MAIN^ 439=542^ 9321=abc^ 9324=EWD^ **555=2^ 609=OPT^ 600=DJV ^ 624=1^ 623=1^ 610=200405^ 612=105^ 613=1^ 564=C^ 565=0^ 609=OPT^ 600=DJV ^ 624=2^ 623=1^ 610=200405^ 612=103^ 613=1^ 564=C^ 565=0**

Response:
Main Report:
8=FIX.4.2^ 9=0441^ 35=8^ 57=A11:A11^ 34=138^ 49=AFIX201^ 56=AATG1 ^ 52=20040403-13:09:01^ 6=0^ 439=CBOE:542^ 109=ABC^ 11=AAA0001-20040403^ 14=0^ 84=0^ 426=0^ 425=0^ 424=20^ 389=0^ 76=CBOE:840^ 17=18146:92960.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=20^ 37=18146: 92960^ 38=20^ 39=0^ 40=2^ 44=0.5^ 201=0^ 47=C^ 107=VERTICAL^ 207=W^ **48=147194299**^ 167=MLEG^ **54=1**^ 202=0^ 55=DJX^ 59=0^ 336=W_MAIN^ 60=20040503-13:09:01^ 9324=EWD^ 9369=2^ 9321=abc^ 9465=CBOE:A11

Leg Reports:
8=FIX.4.2^ 9=0443^ 35=8^ 57=A11:A11^ 34=139^ 49=AFIX201^ 56=AATG1^ 52=20040403-13:09:01^ 6=0^ 109=ABC^ 11=AAA0001-20040403^ 14=0^ 84=0^ 426=0^ 425=0^ 424=20^ 389=0^ 76=CBOE:840^ 17=18146: 92960.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=20^ 205=22^ 200=200405^ 442=3^ 77=C^ 37=18146: 92960^ 38=20^ 39=0^ 40=2^ 44=0^ 201=1^ 47=C^ 207=W^ 48=137956582^ 167=OPT^ **54=2**^ 202=103^ 55=DJV^ 59=0^ 336=W_MAIN^ 60=20040403-13:09:01^ 9324=EWD^ 9369=2^ 9321=abc^ 9465=CBOE:A11^

9.0.2

8=FIX.4.2^ 9=0443^ 35=8^ 57=A11:A11^ 34=140^ 49=AFIX201^ 56=AATG1^ 52=20040403-13:09:01^ 6=0^ 109=ABC^ 11=AAA0001-20040403^ 14=0^ 84=0^ 426=0^ 425=0^ 424=20^ 389=0^ 76=CBOE:840^ 17=18146: 92960.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=20^ 205=22^ 200=200405^ 442=3^ 77=C^ 37=18146: 92960^ 38=20^ 39=0^ 40=2^ 44=0^ 201=1^ 47=C^ 207=W^ 48=137956586^ 167=OPT^ **54=1**^ 202=105^ 55=DJV^ 59=0^ 336=W_MAIN^ 60=20040403-13:09:01^ 9324=EWD^ 9369=2^ 9321=abc^ 9465=CBOE:A11^

Scenario2 – Strategy created is Opposite to the request

Request:

New Order Single Request for a MultiLeg Vertical Order (Leg 1 – **Sell** DJV 200405 105 Call; Leg 2 **Buy** DJV 200405 103 Call – Opposite of Scenario 1)

8=FIX.4.2^ 9=306^ 35=D^ 49=AATG1^ 56=AFIX201^ 34=1876^ 50=A11:A11^ 57=PROD^ 143=BARTID=6^ 52=20040403-13:09:00^ 11=AAA0001-20040403^ 109=ABC^ 76=840^ 21=2^ 55=DJX^ 167=MLEG^ **54=1**^ 38=20^ 40=2^ 44=0.50^ 59=0^ 47=C^ 60=20040403-13:09:00^ 386=1^ 336=W_MAIN^ 439=542^ 9321=abc^ 9324=EWD^ **555=2^ 609=OPT^ 600=DJV ^ 624=1^ 623=1^ 610=200405^ 612=105^ 613=1^ 564=C^ 565=0^ 609=OPT^ 600=DJV ^ 624=2^ 623=1^ 610=200405^ 612=103^ 613=1^ 564=C^ 565=0**

Response:

Main Report:

8=FIX.4.2^ 9=0441^ 35=8^ 57=A11:A11^ 34=138^ 49=AFIX201^ 56=AATG1 ^ 52=20040403-13:09:01^ 6=0^ 439=CBOE:876^ 109=ABC^ 11=AAA0001-20040403^ 14=0^ 84=0^ 426=0^ 425=0^ 424=20^ 389=0^ 76=CBOE:840^ 17=18146:92960.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=20^ 37=18146: 92960^ 38=20^ 39=0^ 40=2^ 44=0.5^ 201=0^ 47=C^ 107=VERTICAL^ 207=W^ **48=147194299**^ 167=MLEG^ **54=2**^ 202=0^ 55=DJX^ 59=0^ 336=W_MAIN^ 60=20040503-13:09:01^ 9324=EWD^ 9369=2^ 9321=abc^ 9465=CBOE:A11

Leg Reports:

8=FIX.4.2^ 9=0443^ 35=8^ 57=A11:A11^ 34=139^ 49=AFIX201^ 56=AATG1^ 52=20040403-13:09:01^ 6=0^ 109=ABC^ 11=AAA0001-20040403^ 14=0^ 84=0^ 426=0^ 425=0^ 424=20^ 389=0^ 76=CBOE:840^ 17=18146: 92960.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=20^ 205=22^ 200=200405^ 442=3^ 77=C^ 37=18146: 92960^ 38=20^ 39=0^ 40=2^ 44=0^ 201=1^ 47=C^ 207=W^ 48=137956582^ 167=OPT^ **54=2**^ 202=103^ 55=DJV^ 59=0^ 336=W_MAIN^ 60=20040403-13:09:01^ 9324=EWD^ 9369=2^ 9321=abc^ 9465=CBOE:A11^

8=FIX.4.2^ 9=0443^ 35=8^ 57=A11:A11^ 34=140^ 49=AFIX201^ 56=AATG1^ 52=20040403-13:09:01^ 6=0^ 109=ABC^ 11=AAA0001-20040403^ 14=0^ 84=0^ 426=0^ 425=0^ 424=20^ 389=0^ 76=CBOE:840^ 17=18146: 92960.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=20^ 205=22^ 200=200405^ 442=3^ 77=C^ 37=18146: 92960^ 38=20^ 39=0^ 40=2^ 44=0^ 201=1^ 47=C^ 207=W^ 48=137956586^ 167=OPT^ **54=1**^ 202=105^ 55=DJV^ 59=0^ 336=W_MAIN^ 60=20040403-13:09:01^ 9324=EWD^ 9369=2^ 9321=abc^ 9465=CBOE:A11^

Scenario3 – Using tag LegSecurityId for a Buy write Strategy

Request:

8=FIX.4.2^ 9=0335^ 35=D^ 50=876^ 34=505^ 49=ZZCBOE2^ 56=DFIX202^ 52=20040524-22:07:24^ 11= BCR0004-20040524^ 76=CBOE:551^ 9321=876^ 1=SUN^ 440=02248^ 386=1^ 336=W_MAIN^ 40=2^ 44=1.1^ 59=0^ 55=FON^ 167=MLEG^ 200=200405^ 201=0^ 202=17.5^ 207=W^ 54=1^ 38=1000^ 47=C^ 555=2^ **609=OPT^ 602=133698189^ 624=1^ 623=1^ 609=CS^ 602=69224139^ 624=2^ 623=1**^ 10=136^

Response:

Main Report:

8=FIX.4.2^ 9=0415^ 35=8^ 57=876^ 34=590^ 49=DFIX202^ 56=ZZCBOE2^ 52=20040524-22:07:24^ 1=SUN^ 6=0^ 440=02248^ 11=BCR0004-20040524^ 14=0^ 84=0^ 426=0^ 425=0^ 424=1000^ 389=0^ 76=CBOE:551^ 17=12080:58472.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=1000^ 37=12080:58472^ 38=1000^ 39=0^ 40=2^ 44=1.1^ 201=0^ 47=C^ 107=BUY_WRITE^ 207=W^ 48=137691146^ 167=MLEG^ 54=1^ 202=0^ 55=XRX^ 59=0^ 336=W_MAIN^ 60=20040524-22:07:24^ 9369=2^ 9321=876^ 10=153^

9.0.2

8=FIX.4.2^ 9=0402^ 35=8^ 57=876^ 34=591^ 49=DFIX202^ 56=ZZCBOE2^ 52=20040524-22:07:24^ 1=SUN^ 6=0^ 440=02248^ 11=BCR0004-20040524^ 14=0^ 84=0^ 426=0^ 425=0^ 424=1000^ 389=0^ 76=CBOE:551^ 17=12080:58472.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=1000^ 442=3^ 37=12080:58472^ 38=1000^ 39=0^ 40=2^ 44=0^ 201=0^ 47=C^ 207=W^ 48=69224139^ 167=CS^ 54=2^ 202=0^ 55=XRX^ 59=0^ 336=W_MAIN^ 60=20040524-22:07:24^ 9369=2^ 9321=876^ 10=209^

8=FIX.4.2^ 9=0423^ 35=8^ 57=876^ 34=592^ 49=DFIX202^ 56=ZZCBOE2^ 52=20040524-22:07:24^ 1=SUN^ 6=0^ 440=02248^ 11=BCR0004-20040524^ 14=0^ 84=0^ 426=0^ 425=0^ 424=1000^ 389=0^ 76=CBOE:551^ 17=12080:58472.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=1000^ 205=19^ 200=200406^ 442=3^ 37=1080:58472^ 38=1000^ 39=0^ 40=2^ 44=0^ 201=1^ 47=C^ 207=W^ 48=133698189^ 167=OPT^ 54=1^ 202=11^ 55=XRX^ 59=0^ 336=W_MAIN^ 60=20040524-22:07:24^ 9369=2^ 9321=876^ 10=219^

Scenario4 – Using tag 654 LegRefId

Request:

8=FIX.4.2^ 9=0335^ 35=D^ 50=876^ 34=505^ 49=ZZCBOE2^ 56=DFIX202^ 52=20040524-22:07:24^ 11= BCR0004-20040524^ 76=CBOE:551^ 9321=876^ 1=SUN^ 440=02248^ 386=1^ 336=W_MAIN^ 40=2^ 44=1.1^ 59=0^ 55=FON^ 167=MLEG^ 200=200405^ 201=0^ 202=17.5^ 207=W^ 54=1^ 38=1000^ 47=C^ 555=2^ 609=OPT^ 602=133698189^ **654=leg1**^ 624=1^ 623=1^ 609=CS^ 602=69224139^ 654=leg2^ 624=2^ 623=1^ 10=136^

Response:
Main Report:

8=FIX.4.2^ 9=0415^ 35=8^ 57=876^ 34=590^ 49=DFIX202^ 56=ZZCBOE2^ 52=20040524-22:07:24^ 1=SUN^ 6=0^ 440=02248^ 11=BCR0004-20040524^ 14=0^ 84=0^ 426=0^ 425=0^ 424=1000^ 389=0^ 76=CBOE:551^ 17=12080:58472.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=1000^ 37=12080:58472^ 38=1000^ 39=0^ 40=2^ 44=1.1^ 201=0^ 47=C^ 107=BUY_WRITE^ 207=W^ 48=137691146^ 167=MLEG^ 54=1^ 202=0^ 55=XRX^ 59=0^ 336=W_MAIN^ 60=20040524-22:07:24^ 9369=2^ 9321=876^ 10=153^

8=FIX.4.2^ 9=0402^ 35=8^ 57=876^ 34=591^ 49=DFIX202^ 56=ZZCBOE2^ 52=20040524-22:07:24^ 1=SUN^ 6=0^ 440=02248^ 11=BCR0004-20040524^ 14=0^ 84=0^ 426=0^ 425=0^ 424=1000^ 389=0^ 76=CBOE:551^ 17=12080:58472.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=1000^ 442=3^ 37=12080:58472^ 38=1000^ 39=0^ 40=2^ 44=0^ 201=0^ 47=C^ 207=W^ 48=69224139^ 167=CS^ 54=2^ 202=0^ 55=XRX^ 59=0^ 336=W_MAIN^ 60=20040524-22:07:24^ **654=leg2^** 9369=2^ 9321=876^ 10=209^

8=FIX.4.2^ 9=0423^ 35=8^ 57=876^ 34=592^ 49=DFIX202^ 56=ZZCBOE2^ 52=20040524-22:07:24^ 1=SUN^ 6=0^ 440=02248^ 11=BCR0004-20040524^ 14=0^ 84=0^ 426=0^ 425=0^ 424=1000^ 389=0^ 76=CBOE:551^ 17=12080:58472.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=1000^ 205=19^ 200=200406^ 442=3^ 37=1080:58472^ 38=1000^ 39=0^ 40=2^ 44=0^ 201=1^ 47=C^ 207=W^ 48=133698189^ 167=OPT^ 54=1^ 202=11^ 55=XRX^ 59=0^ 336=W_MAIN^ 60=20040524-22:07:24^ **654=leg1^** 9369=2^ 9321=876^ 10=219^

One-Step Cancel Replace

All the tags that are a part of the leg details in the New Order message will also be supported in the Cancel Replace Request message. Tag 48 [SecurityId] need not be specified if the leg details are specified.
As in the case of New Order if strategy requested already existed in our system in an opposite manner then the Side will be automatically flipped.

Cancel Replace request:

8=FIX.4.2^ 9=0339^ 35=G^ 34=17^ 49=ZZCBOE2^ 56=DFIX202^ 52=20040820-15:07:56^ 11=BBN0002-20040820^ 41=BBN0001-20040820^ 76=CBOE:551^ 21=2^ 55=DJX^ 167=MLEG^ 54=2^ 38=30^ 40=2^ 44=-0.4^ 59=0^ 204=0^ 60=20040206-20:44:56^ 440=fh^ 386=1^ 336=W_MAIN^ 555=2^ 609=OPT^ 600=DJV^ 624=1^ 623=1^ 610=200408^ 612=105^ 613=1^ 564=O^ 565=0^ 609=OPT^ 600=DJV^ 624=2^ 623=1^ 610=200408^ 612=103^ 613=1^ 564=C^ 565=0^ 10=167^

Pending Replace:

8=FIX.4.2^ 9=0274^ 35=8^ 34=23^ 49=DFIX202^ 56=ZZCBOE2^ 52=20040820-15:07:56^ 6=0^ 11=BBN0002-20040820^ 14=0^ 84=0^ 76=CBOE:551^ 17=14073:6419.0:0.1093014476912^ 20=0^ 150=E^ 31=0^ 32=0^ 151=100^ 37=14073:6419^ 38=30^ 39=E^ 40=2^ 41=BBN0001-20040820^ 44=-0.4^ 167=MLEG^ 54=2^ 55=DJX^ 10=029^

Main Report:

8=FIX.4.2^ 9=0337^ 35=8^ 34=24^ 49=DFIX202^ 56=ZZCBOE2^ 52=20040820-15:07:57^ 6=0^ 440=fh^ 11=BBN0002-20040820^ 14=0^ 84=0^ 426=0^ 425=0^ 424=30^ 389=0^ 76=CBOE:551^ 17=14073:6425.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=30^ 37=14073:6425^ 38=30^ 39=0^ 40=2^ 44=-0.4^ 201=0^ 47=C^ 107=VERTICAL^ 207=W^ 48=147324941^ 167=MLEG^ 54=2^ 202=0^ 55=DJX^ 59=0^ 336=W_MAIN^ 60=20040820-15:07:57^ 9369=2^ 10=155^

Leg Reports:

8=FIX.4.2^ 9=0351^ 35=8^ 34=25^ 49=DFIX202^ 56=ZZCBOE2^ 52=20040820-15:07:57^ 6=0^ 440=fh^ 11=BBN0002-20040820^ 14=0^ 84=0^ 426=0^ 425=0^ 424=30^ 389=0^ 76=CBOE:551^ 17=14073:6425.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=30^ 205=21^ 200=200408^ 442=3^ 77=O^ 37=14073:6425^ 38=30^ 39=0^ 40=2^ 44=0^ 201=1^ 47=C^ 207=W^ 48=138543844^ 167=OPT^ 54=2^ 202=105^ 55=DJV^ 59=0^ 336=W_MAIN^ 60=20040820-15:07:57^ 9369=2^ 10=077^

8=FIX.4.2^ 9=0351^ 35=8^ 34=26^ 49=DFIX202^ 56=ZZCBOE2^ 52=20040820-15:07:57^ 6=0^ 440=fh^ 11=BBN0002-20040820^ 14=0^ 84=0^ 426=0^ 425=0^ 424=30^ 389=0^ 76=CBOE:551^ 17=14073:6425.0:0.1^ 20=0^ 150=0^ 22=8^ 31=0^ 32=0^ 151=30^ 205=21^ 200=200408^ 442=3^ 77=C^ 37=14073:6425^ 38=30^ 39=0^ 40=2^ 44=0^ 201=1^ 47=C^ 207=W^ 48=138543840^ 167=OPT^ 54=1^ 202=103^ 55=DJV^ 59=0^ 336=W_MAIN^ 60=20040820-15:07:57^ 9369=2^ 10=059^

Order Entry (one step buy-write with separately specified stock clearing firm)

[8=FIX.4.2_9=0270_35=D_34=8_49=AATG1_56=AFIX201_52=20071022-20:49:12_11=ODG0006-20071022_76=325_21=1_40=2_44=1.00_55=IBM_167=MLEG_54=1_38=10_47=C_60=20040903-12:00:00_386=1_336=W_MAIN_555=2_609=CS_600=IBM_624=2_623=100_524=CBOEW:325_609=OPT_600=IBM_610=20071022_624=2_612=60.00_613=1_623=1_10=008_]

Order Acks (package followed by legs)

[8=FIX.4.2_9=0344_35=8_34=19_49=AFIX201_56=AATG1_52=20071022-20:49:12_6=0_11=ODG0006-20071022_14=0_84=0_426=0_425=0_424=10_389=0_76=CBOE:325_17=65010:1366552430.0:0.1_20=0_150=0_22=8_31=0_32=0_151=10_442=3_37=65010:1366552430_38=10_39=0_40=2_44=1_201=0_47=C_107=BUY_WRITE_207=W_48=340671218_167=MLEG_54=1_202=0_55=IBM_59=0_336=W_MAIN_60=20071022-20:49:12_9369=2_10=126_]

[8=FIX.4.2_9=0355_35=8_34=20_49=AFIX201_56=AATG1_52=20071022-20:49:12_6=0_439=CBOEW:325_11=ODG0006-20071022_14=0_84=0_426=0_425=0_424=10_389=0_76=CBOE:325_17=65010:1366552430.56872144.1_20=0_150=0_22=8_31=0_32=0_151=1000_442=2_77=C_37=65010:1366552430_38=1000_39=0_40=2_44=0_201=0_47=C_207=W_48=69213921_167=CS_54=2_202=0_55=IBM_59=0_336=W_MAIN_60=20071022-20:49:12_9369=2_10=229_]

[8=FIX.4.2_9=0357_35=8_34=21_49=AFIX201_56=AATG1_52=20071022-20:49:12_6=0_11=ODG0006-20071022_14=0_84=0_426=0_425=0_424=10_389=0_76=CBOE:325_17=65010:1366552430.56872145.1_20=0_150=0_22=8_31=0_32=0_151=10_205=20_200=200710_442=2_77=C_37=65010:1366552430_38=10_39=0_40=2_44=0_201=1_47=C_207=W_48=85988957_167=OPT_54=2_202=60_55=IBM_59=0_336=W_MAIN_60=20071022-20:49:12_9369=2_10=230_]

Buy-Write Order Entry via One-step (with 9380 specified)

```
8=FIX.4.2_9=0282_35=D_34=147_49=AATG1_56=AFIX201_52=20071031-16:31:00_11=AKQ0005-
20071031_76=325_21=1_40=2_44=1.00_55=TXN_167=MLEG_54=1_38=10_47=C_60=20040903-
12:00:00_386=1_336=W_MAIN_555=2_609=CS_600=TXN_624=2_623=100_524=CBOEW:325_609=OPT_600
=TXN_610=200711_624=2_612=25.00_613=1_623=1_9380=325_10=005_
```

Order Ack (package)

8=FIX.4.2_9=0353_35=8_34=244_49=AFIX201_56=AATG1_52=20071031-16:31:00_6=0_11=AKQ0005-20071031_14=0_84=0_426=0_425=0_424=10_389=0_76=CBOE:325_17=65014:502811223.0:0.1_20=0_150=0_22=8_31=0_32=0_151=10_442=3_37=65014:502811223_38=10_39=0_40=2_44=1_201=0_47=C_107=BUY_WRITE_207=W_48=342783367_167=MLEG_54=1_202=0_55=TXN_59=0_336=W_MAIN_60=20071031-16:31:00_9369=2_9380=325_10=148_

Leg Ack (Equity Leg)

8=FIX.4.2_9=0354_35=8_34=245_49=AFIX201_56=AATG1_52=20071031-16:31:00_6=0_439=CBOEW:325_11=AKQ0005-20071031_14=0_84=0_426=0_425=0_424=10_389=0_76=CBOE:325_17=65014:502811223.41443681.1_20=0_150=0_22=8_31=0_32=0_151=1000_442=2_77=C_37=65014:502811223_38=1000_39=0_40=2_44=0_201=0_47=C_207=W_48=69222534_167=CS_54=2_202=0_55=TXN_59=0_336=W_MAIN_60=20071031-16:31:00_9369=2_10=191_

Leg Ack (Option Leg)

8=FIX.4.2_9=0357_35=8_34=246_49=AFIX201_56=AATG1_52=20071031-16:31:00_6=0_11=AKQ0005-20071031_14=0_84=0_426=0_425=0_424=10_389=0_76=CBOE:325_17=65014:502811223.41443682.1_20=0_150=0_22=8_31=0_32=0_151=10_205=17_200=200711_442=2_77=C_37=65014:502811223_38=10_39=0_40=2_44=0_201=1_47=C_207=W_48=336214687_167=OPT_54=2_202=25_55=TXN_59=0_336=W_MAIN_60=20071031-16:31:00_9369=2_10=230_

One-Step Order with Reducable Ratios - and its Reject

low information 2008/02/05 13:24:07:481: FIXConnectionData: Sending data on connection {TEST101} [8=FIX.4.2^A9=0287^A**35=D**^A34=15^A49=TEST101^A56=DFIX101^A52=20080205-19:24:07^A11=OCB0007-20080205^A76=549^A21=1^A40=2^A44=1.00^A55=AMG^A167=MLEG^A54=1^A38=10^A47=C^A60=20040903-12:00:00^A386=1^A336=W_MAIN^A555=2^A609=OPT^A600=AMG^A610=200803^A624=1^A612=150.00^A613=1^A**623=6**^A609=OPT^A600=AMG^A610=200802^A624=1^A612=125.00^A613=1^A**623=3**^A10=232^A]low information 2008/02/05 13:24:07:629: FIXPump: Received data on connection {TEST101} [8=FIX.4.2^A9=0372^A35=8^A34=111^A49=DFIX101^A56=TEST101^A52=20080205-19:24:07^A6=0^A11=OCB0007-20080205^A14=0^A84=0^A17=0:0.47965722.0^A20=0^A150=8^A31=0^A32=0^A151=0^A37=NONE^A38=10^A103=0^A39=8^A40=2^A44=1^A48=1^A167=MLEG^A54=1^A55=AMG^A58=Strategy Ratios Not Expressed in fully reduced LCD form^A555=2^A609=OPT^A600=AMG^A610=200803^A624=1^A612=150.00^A613=1^A623=6^A609=OPT^A600=AMG^A610=200802^A624=1^A612=125.00^A613=1^A623=3^A10=074^A]

One-Step Cxl/Re with Reducable Ratios - and its Reject

low information 2008/02/05 13:25:36:460: FIXConnectionData: Sending data on connection {TEST101} [8=FIX.4.2^A9=0307^A**35=G**^A34=19^A49=TEST101^A56=DFIX101^A52=20080205-19:25:36^A11=OCB0009-20080205^A41=OCB0008-20080205^A76=549^A21=1^A40=2^A44=1.00^A55=AMG^A167=MLEG^A54=1^A38=25^A47=C^A60=20040903-12:00:00^A386=1^A336=W_MAIN^A555=2^A609=OPT^A600=AMG^A610=200803^A624=1^A612=150.00^A613=1^A**623=6**^A609=OPT^A600=AMG^A610=200802^A624=1^A612=125.00^A613=1^A**623=3**^A10=240^A]
low information 2008/02/05 13:25:36:539: FIXPump: Received data on connection {TEST101} [8=FIX.4.2^A9=0336^A35=9^A34=117^A49=DFIX101^A56=TEST101^A52=20080205-19:25:36^A37=65010:122000090^A11=OCB0009-20080205^A41=OCB0008-20080205^A39=4^A76=549^A60=20080205-19:25:36^A434=2^A102=2^A**58=Strategy Ratios Not Expressed in fully reduced LCD form**^A555=2^A609=OPT^A600=AMG^A610=200803^A624=1^A612=150.00^A613=1^A623=6^A609=OPT^A600=AMG^A610=200802^A624=1^A612=125.00^A613=1^A623=3^A10=073^A]

OneStepStrategy creation with two OptionLegs

Leg1 Buy June 30 CALL
Leg2 Sell July 48 CALL
low information 2011/06/03 13:23:24:931: FIXPump: Received data on connection {FF10}
[8=FIX.4.2^A9=353^A35=D^A49=FF10^A56=DFIX201^A34=1217^A50=X12:X12^A57=TEST^A52=20110603-18:23:24.885^A555=2^A609=OPT^A600=A^A610=201106^A624=1^A612=30^A623=1^A613=1^A611=20110618^A609=OPT^A600=A^A610=201106^A624=2^A612=48^A623=1^A613=1^A611=20110716^A11=LAB0098-20110603^A76=671^A109=DASH^A21=1^A55=A^A386=1^A336=W_MAIN^A167=MLEG^A54=1^A60=20110603-18:23:24.885^A40=2^A44=2.2^A47=C^A77=O^A204=0^A9324=EWD^A38=10^A10=097^A]

Execution Report for Package
low information 2011/06/03 13:23:24:954: FIXConnectionData: Sending data on connection {FF10}
[8=FIX.4.2^A9=0377^A35=8^A57=X12:X12^A34=260^A49=DFIX201^A56=FF10^A52=20110603-18:23:24^A37=71358:1560373410^A11=LAB0098-20110603^A109=DASH^A76=CBOE:671^A17=71358:1560373410.0:0.1^A20=0^A39=0^A55=A^A48=445162999^A22=8^A107=DIAGONAL^A54=1^A38=10^A44=2.2^A59=0^A47=C^A32=0^A31=0^A14=0^A6=0^A60=20110603-18:23:24^A40=2^A207=W^A150=0^A167=MLEG^A201=0^A202=0^A336=W_MAIN^A151=10^A84=0^A389=0^A426=0^A425=0^A424=10^A442=3^A77=O^A9369=2^A9324=EWD^A10=228^A]

Execution Report for Leg1
low information 2011/06/03 13:23:24:959: FIXConnectionData: Sending data on connection {FF10}
[8=FIX.4.2^A9=0386^A35=8^A57=X12:X12^A34=261^A49=DFIX201^A56=FF10^A52=20110603-18:23:24^A37=71358:1560373410^A11=LAB0098-20110603^A109=DASH^A76=CBOE:671^A17=71358:1560373410.67788672.1^A20=0^A39=0^A55=A^A48=1048898201^A22=8^A54=1^A38=10^A44=0^A59=0^A47=C^A32=0^A31=0^A14=0^A6=0^A60=20110603-18:23:24^A40=2^A207=W^A150=0^A167=OPT^A200=201106^A205=18^A201=1^A202=30^A336=W_MAIN^A151=10^A84=0^A389=0^A426=0^A425=0^A424=10^A442=2^A77=C^A9369=2^A9324=EWD^A10=220^A]

Execution Report for Leg2
low information 2011/06/03 13:23:24:960: FIXConnectionData: Sending data on connection {FF10}
[8=FIX.4.2^A9=0386^A35=8^A57=X12:X12^A34=262^A49=DFIX201^A56=FF10^A52=20110603-18:23:24^A37=71358:1560373410^A11=LAB0098-20110603^A109=DASH^A76=CBOE:671^A17=71358:1560373410.67788673.1^A20=0^A39=0^A55=A^A48=1066413324^A22=8^A54=2^A38=10^A44=0^A59=0^A47=C^A32=0^A31=0^A14=0^A6=0^A60=20110603-18:23:24^A40=2^A207=W^A150=0^A167=OPT^A200=201107^A205=16^A201=1^A202=48^A336=W_MAIN^A151=10^A84=0^A389=0^A426=0^A425=0^A424=10^A442=2^A77=C^A9369=2^A9324=EWD^A10=220^A]

Same Products Opposite sides
Leg1 Sell June 30 CALL
Leg2 Buy July 48 CALL
low information 2011/06/03 13:25:58:280: FIXPump: Received data on connection {FF10}
[8=FIX.4.2^A9=353^A35=D^A49=FF10^A56=DFIX201^A34=1223^A50=X12:X12^A57=TEST^A52=20110603-18:25:58.231^A555=2^A609=OPT^A600=A^A610=201106^A
624=2 <- Leg 1 side is sell
^A612=30^A623=1^A613=1^A611=20110618^A609=OPT^A600=A^A610=201106^A
624=1 <- Leg 2 side is Buy
^A612=48^A623=1^A613=1^A611=20110716^A11=LAB0099-20110603^A76=671^A109=DASH^A21=1^A55=A^A386=1^A336=W_MAIN^A167=MLEG^A
54=2 < - Package Side is Sell
^A60=20110603-18:25:58.231^A40=2^A44=2.2^A47=C^A77=O^A204=0^A9324=EWD^A38=10^A10=084^A]

Package Execution Report
low information 2011/06/03 13:25:58:292: FIXConnectionData: Sending data on connection {FF10}
[8=FIX.4.2^A9=0377^A35=8^A57=X12:X12^A34=268^A49=DFIX201^A56=FF10^A52=20110603-

18:25:58^A37=71358:1560373419^A11=LAB0099-
20110603^A109=DASH^A76=CBOE:671^A17=71358:1560373419.0:0.1^A20=0^A39=0^A55=A^A48=445162999^A22=8^A107=DIAGONAL^A
54=1 < - Package flipped to as defined
^A38=10^A44=2.2^A59=0^A47=C^A32=0^A31=0^A14=0^A6=0^A60=20110603-
18:25:58^A40=2^A207=W^A150=0^A167=MLEG^A201=0^A202=0^A336=W_MAIN^A151=10^A84=0^A389=0^A426=0^A425=0^A424=10^A442=3^A77=O^A9369=2^A9324=EWD^A10=017^A]

Leg1 Execution Report
low information 2011/06/03 13:25:58:292: FIXConnectionData: Sending data on connection {FF10}
[8=FIX.4.2^A9=0386^A35=8^A57=X12:X12^A34=269^A49=DFIX201^A56=FF10^A52=20110603-
18:25:58^A37=71358:1560373419^A11=LAB0099-
20110603^A109=DASH^A76=CBOE:671^A17=71358:1560373419.67788674.1^A20=0^A39=0^A55=A^A48=1048898201^A22=8^A
54=1 <- Leg 1 flipped to Buy
^A38=10^A44=0^A59=0^A47=C^A32=0^A31=0^A14=0^A6=0^A60=20110603-
18:25:58^A40=2^A207=W^A150=0^A167=OPT^A200=201106^A205=18^A201=1^A202=30^A336=W_MAIN^A151=10^A84=0^A389=0^A426=0^A425=0^A424=10^A442=2^A77=C^A9369=2^A9324=EWD^A10=011^A]
Leg2 Execution Report
low information 2011/06/03 13:25:58:293: FIXConnectionData: Sending data on connection {FF10}
[8=FIX.4.2^A9=0386^A35=8^A57=X12:X12^A34=270^A49=DFIX201^A56=FF10^A52=20110603-
18:25:58^A37=71358:1560373419^A11=LAB0099-
20110603^A109=DASH^A76=CBOE:671^A17=71358:1560373419.67788675.1^A20=0^A39=0^A55=A^A48=1066413324^A22=8^A
54=2 <- Leg 2 flipped to Sell
^A38=10^A44=0^A59=0^A47=C^A32=0^A31=0^A14=0^A6=0^A60=20110603-
18:25:58^A40=2^A207=W^A150=0^A167=OPT^A200=201107^A205=16^A201=1^A202=48^A336=W_MAIN^A151=10^A84=0^A389=0^A426=0^A425=0^A424=10^A442=2^A77=C^A9369=2^A9324=EWD^A10=002^A]

Buy - Write OneStepStrategy Creation

Leg1 – Buy June 30 Call
Leg2 – Sell Stock
low information 2011/06/03 13:31:42:393: FIXPump: Received data on connection {FF10}
[8=FIX.4.2^A9=328^A35=D^A49=FF10^A56=DFIX201^A34=1235^A50=X12:X12^A57=TEST^A52=20110603-
18:31:42.345^A555=2^A609=OPT^A600=A^A610=201106^A624=1^A612=30^A623=1^A613=1^A611=20110618^A609=CS^A600=A^A624=2^A623=1^A611=20110716^A11=LAB0100-
20110603^A76=671^A109=DASH^A21=1^A55=A^A386=1^A336=W_MAIN^A167=MLEG^A54=1^A60=20110603-
18:31:42.345^A40=2^A44=2.2^A47=C^A77=O^A204=0^A9324=EWD^A38=10^A10=151^A]
low information 2011/06/03 13:31:42:493: FIXConnectionData: Sending data on connection {FF10}
[8=FIX.4.2^A9=0370^A35=8^A57=X12:X12^A34=282^A49=DFIX201^A56=FF10^A52=20110603-
18:31:42^A37=71358:1560373428^A11=LAB0100-
20110603^A109=DASH^A76=CBOE:671^A17=71358:1560373428.0:0.1^A20=0^A39=0^A55=A^A48=445163468^A22=8^A107=1^A54=1^A38=10^A44=2.2^A59=0^A47=C^A32=0^A31=0^A14=0^A6=0^A60=20110603-
18:31:42^A40=2^A207=W^A150=0^A167=MLEG^A201=0^A202=0^A336=W_MAIN^A151=10^A84=0^A389=0^A426=0^A425=0^A424=10^A442=3^A77=O^A9369=2^A9324=EWD^A10=203^A]
low information 2011/06/03 13:31:42:494: FIXConnectionData: Sending data on connection {FF10}
[8=FIX.4.2^A9=0386^A35=8^A57=X12:X12^A34=283^A49=DFIX201^A56=FF10^A52=20110603-
18:31:42^A37=71358:1560373428^A11=LAB0100-
20110603^A109=DASH^A76=CBOE:671^A17=71358:1560373428.67788676.1^A20=0^A39=0^A55=A^A48=1048898201^A22=8^A54=1^A38=10^A44=0^A59=0^A47=C^A32=0^A31=0^A14=0^A6=0^A60=20110603-
18:31:42^A40=2^A207=W^A150=0^A167=OPT^A200=201106^A205=18^A201=1^A202=30^A336=W_MAIN^A151=10^A84=0^A389=0^A426=0^A425=0^A424=10^A442=2^A77=C^A9369=2^A9324=EWD^A10=228^A]
low information 2011/06/03 13:31:42:494: FIXConnectionData: Sending data on connection {FF10}
[8=FIX.4.2^A9=0364^A35=8^A57=X12:X12^A34=284^A49=DFIX201^A56=FF10^A52=20110603-
18:31:42^A37=71358:1560373428^A11=LAB0100-
20110603^A109=DASH^A76=CBOE:671^A17=71358:1560373428.67788677.1^A20=0^A39=0^A55=A^A48=692060

18^A22=8^A54=2^A38=10^A44=0^A59=0^A47=C^A32=0^A31=0^A14=0^A6=0^A60=20110603-18:31:42^A40=2^A207=W^A150=0^A167=CS^A201=0^A202=0^A336=W_MAIN^A151=10^A84=0^A389=0^A426=0^A425=0^A424=10^A442=2^A77=C^A9369=2^A9324=EWD^A10=177^A]

Buy-Write Strategy Order same products Opposite side

Leg1 – Sell June 30 Call
Leg2 – Buy Stock
low information 2011/06/03 13:57:43:640: FIXPump: Received data on connection {FF10}
[8=FIX.4.2^A9=315^A35=D^A49=FF10^A56=DFIX201^A34=1274^A50=X12:X12^A57=TEST^A52=20110603-18:57:43.599^A555=2^A609=OPT^A600=A^A610=201106^A624=2^A612=30^A623=1^A613=1^A611=20110618^A609=CS^A600=A^A624=1^A623=1^A11=LAB0102-20110603^A76=671^A109=DASH^A21=1^A55=A^A386=1^A336=W_MAIN^A167=MLEG^A54=2^A60=20110603-18:57:43.599^A40=2^A44=2.2^A47=C^A77=O^A204=0^A9324=EWD^A38=10^A10=089^A]
Order Rejected
low information 2011/06/03 13:57:43:709: FIXConnectionData: Sending data on connection {FF10}
[8=FIX.4.2^A9=0386^A35=8^A57=X12:X12^A34=326^A49=DFIX201^A56=FF10^A52=20110603-18:57:43^A37=NONE^A11=LAB0102-20110603^A17=0:0.50215065.0^A20=0^A39=8^A103=0^A55=A^A48=1^A54=2^A38=10^A44=2.2^A32=0^A31=0^A14=0^A6=0^A58=**Strategy Defined as Opposite. Ambiguous Side -Sell/Sell Short- for Stock Leg**^A40=2^A150=8^A167=MLEG^A151=0^A84=0^A555=2^A609=OPT^A600=A^A610=201106^A624=2^A612=30^A623=1^A613=1^A611=20110618^A609=CS^A600=A^A624=1^A623=1^A9324=EWD^A10=085^A]

The FIX 4.2 Execution Report—Common Fields

Options and Futures: 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. All activity against an order within CBOEdirect will cause an Execution Report to be sent to the firm. Only the FIX user that sends an order to CBOE can receive a copy of the Order Execution Report. If another user queries order status, or tries to modify, cancel, or cancel replace the order, CBOE will reject that request. Firms can obtain duplicate copies of their execution reports via the RTC interface. RTC documents are available on the CBOE API web site. Activities that result in Execution Reports are being sent trades (fills, partial fills), cancels, partial cancels, nothing dones (done for day), trade busts, and trade busts with quantity reinstated.
Each different usage of the Execution Report results in slightly different message content. The fields that are employed across all messages are listed in this table. Subsequent explanations regarding the usage of the Execution Report will contain only the additions, if any, to the common Execution Report message fields.[4]

Linkage: The Execution Report is used to respond to NBBO trades at the away market (fills, partial fills), cancel reports, reject reports, and new order responses.
Each different usage of the Execution Report results in slightly different message content. The fields that are employed across all messages are listed in this table. Subsequent explanations regarding the usage of the Execution Report will contain only the additions, if any, to the common Execution Report message fields.[5]

If backlogs in receiving Order Status and / or Execution Reports occur, the CBOE will remove the user's subscription to Order Status and notify the user by sending a Business Reject Message with reason text. The user would have to re-register for Order Status. Refer to document FIX-03b-Application Layer: Fundamentals and Field (Tag) Dictionary for details on Business Reject Messages.

Linkage execution reports will include XLK as the Executing Broker and ZLK as the Contra Broker.

Table 8 Tags common to all FIX 4.2 Execution Reports

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.
198	SecondaryOrderID	Will be assigned by CBOE. This is the CBOE's Order Routing System (ORS) order Id (also called ORS ID). Any non-auction Option order will route through TPF and receive an ORS ID.
11	ClOrdID	Format: `AAA9999-YYYYMMDD`.
109	ClientID	Correspondent Firm ID
76	ExecBroker	Executing or Give up firm

[4] The term common Execution Report is not a part of normal FIX parlance. The term is being used here to simplify this documentation.

[5] The term common Execution Report is not a part of normal FIX parlance. The term is being used here to simplify this documentation.

Tag	Field Name	Comments
17	ExecID	Each execution report in Hybrid and OneChicago trades will contain a unique ExecID to identify the message. Orders executed in open-outcry will not have an ExecID: these orders should be referenced by the SecondaryOrderID[198] which is the CBOE's ORS ID. The ExecID will contain the CBOE Order ID (HighId and LowId), CBOE Trade ID (HighId and LowId), and a TransactionSequenceNumber that will only be used for tie breaking for strategy leg reports in W_MAIN in strategy order trades. The TransactionSequenceNumber field will contain the time in milliseconds when used. In the case of Multi-leg (spread) orders, each leg will receive its own unique ExecID. That will be constructed by appending a space and the Trading System Time (expressed in milliseconds) of the construction of that leg's Execution Report Message to the ExecID of the overall order's ExecID. The Trading System Time is held internally as a 64-bit integer. The other individual parts of the ExecID are held internally as 32-bit integers. **ExecID Format:** **OrderIdHigh:OrderIdLow.TradeIdHigh:TradeIdLow.TransactionSequenceNumber** **(Example: 123:12345.987:98765.0)** This Trade ID (High and Low) must be communicated to the CBOEdirect Administrator at the time the user requests a trade bust (currently supported in OneChicago and CFE only).
20	ExecTransType	This value will always = 0 (new).
150	ExecType	Status of the order. **Options and Futures**: 0 = New 1 = Partially filled 2 = Filled 3 = Done for day 4 = Canceled 6 = Pending Cancel/Replace 7 = Stopped 8 = Rejected 9 = Suspended A = Pending New B = Calculated C = Expired D = Restated E = Pending_Replace

Tag	Field Name	Comments
39	OrdStatus	Same values as Tag 150 (ExecType) above. **Options and Futures**: 0 = New 1 = Partially filled 2 = Filled 3 = Done for day 4 = Canceled 6 = Pending Cancel/Replace 7 = Stopped 8 = Rejected 9 = Suspended A = Pending New B = Calculated C = Expired D = Restated E = Pending_Replace
1	Account	Will be the same value as entered in the order
55	Symbol	Will be the same value as entered in the order
48	SecurityID	CBOEdirect product key
22	IDSource	Will be set to “8” (Exchange Symbol)
167	SecurityType	Will be the same value as entered in the order
200	MaturityMonthYear	Expiration year and month
205	MaturityDay	Expiration day of the month
201	PutOrCall	Will be the same value as entered in the order (for options)
202	StrikePrice	Will be the same value as entered in the order (for options)
207	SecurityExchange	This signifies the exchange to which the execution report refers. W = CBOE C2OX = CBOE 2 (C2) 50 = OneChicago MW = Midwest Stock Exchange
107	SecurityDesc	**Strategy Products**: This field will be set to the strategy product names as described in the CBOEdirect W_MAIN / ONE Strategy Order Test Plan. 1 = Unknown 2 = Straddle 3 = Pseudo_Straddle 4 = Vertical 5 = Ratio 6 = Time 7 = Diagonal 8 = Combo 9 = Buy-Write **Option, Future, Index, or Underlying Products**: This field will not be present in Execution Reports.
54	Side	Will be the same value as entered in the order
38	OrderQty	Quantity of the order
40	OrdType	Will be the same value as entered in the order
44	Price	Limit price specified on the original order
99	StopPx	Will be the same value as entered in the order (if used)
388	DiscretionInst	Will be the same value as entered in the order (if used)
389	DiscretionOffset	Will be the same value as entered in the order (if used)

Tag	Field Name	Comments
59	TimeInForce	Will be the same value as entered in the order
18	ExecInst	Will be the same value as entered in the order (if used)
47	Rule80A	Will be the same value as entered in the order
32	LastShares	Last Sale Quantity. Will be set to 0 if Execution Report is not reporting a Fill or Partial Fill.
31	LastPx	Last Sale Price. Will be set to 0.0 if Execution Report is not reporting a Fill or Partial Fill.
30	LastMkt	Exchange identifier where trade took place.
336	TradingSessionID	TradingSessionID where execution occurred. For trades completed on the CBOE trading floor: 'W_MAIN' For trades completed by OneChicago: 'ONE_MAIN' For Linkage trades executed at the away NBBO market: TradingSessionID = 'W_MAIN'.
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.
6	AvgPx	CBOEdirect does not calculate this value. Will always be 0.00.
424	DayOrderQty	For GT (GTC and GTD) orders, the OrderQty less all contracts (adjusted for stock splits) that traded on previous days DayOrderQty = OrderQty – (CumQty - DayCumQty)
425	DayCumQty	The number of shares on a GT (GTC and GTD) order that have traded today.
426	DayAvgPx	
60	TransactTime	UTC time the execution report was created.
21	HandlInst	Will be the same value as entered in the order (if used)
110	MinQty	Will be the same value as entered in the order (if used)
77	OpenClose	Will be the same value as entered in the order (if used)
58	Text	May be used to designate a reason for message rejection.
439	ClearingFirm	Will be the same value as entered in the order (if used)
440	ClearingAccount	Will be the same value as entered in the order (if used)
442	MultilegReportingType	Will be the same value as entered in the order (if used)
	Custom Defined Fields	
6699	ApplicationQueueDepth	A User defined field that provides the number of application level events that are queued for processing behind this current message. For instance, when ApplicationQueueDepth > 0 on a corresponding application response message sent from CBOE to the firm, this indicates that there are still ApplicationQueueDepth # of reports that have yet to be generated and transmitted to the user. This information is provided to help counter parties manage throughput and backlog issues. This tag is available for Order Status, Quote Status, Order Execution Reports, Quote Execution Reports, and all related Market Data messages.
9324	ClearingOptionalData	**Options and Futures**: This will be the same value as entered in the original order.
9369	PriceProtectionScope	Defines the type of price protection the customer requires on their order Valid values: 0 = None 1 = Local (Exchange, ECN, ATS) 2 = National (Across all national markets) 3 = Global (Across all markets)

Tag	Field Name	Comments
9370	MultiLegPositionEffects	Array of open close codes for multileg orders O-Open C-Close Optional open close codes for legs of an option strategy. The open and close codes are concatenated together, one for each leg. Please see the "Creating and submitting an order using the New Order Single Message (MsgType=D)" section for more information.
9371	MultilegCoveredOrUncovered	Field containing the CoveredUncovered constants for the legs of a multileg instrument. Added for FIX 4.2 complex order support. This field is optional. Same values as CoveredOrUncovered (tag 203) 0 – Covered, 1-Uncovered. The values are concatenated together, with one value for each leg of an option strategy. Please see the "Creating and submitting an order using the New Order Single Message (MsgType=D)" section for more information.
9372	MultilegStockClearingFirm	The Clearing firm for the stock leg of a multileg option strategy added for complex order support in FIX 4.2. Used to specify the stock clearing firm for the stock leg of a combination stock – derivative strategy, such as a buy-write.
9465	OrderOrigin	Will be the same value as entered in the order.
	Standard Trailer	

Determining Trade Participants

The trade ID is one way to determine participants in a trade. The trade ID is unique, however, it will be the same for all orders and quotes that participated in the trade. Orders have a unique CBOE identifier (.high+low) but they are not unique versus a quote ID. Currently, a given user can only have one quote per series, therefore, using the user ID is an option. For either an order or trade, you will need the transaction number as there can be multiple fills generated for each.

To search for order fills, you will need the trade ID, OrderID.high, OrderId.low and the TransactionSequenceNumber.
To search for quote fills, you will need the trade ID, userID and TransactionSequenceNumber.

Submitting Floor Trades (otherwise called MMTN) using the Add Floor Trade Message (*MsgType=U01*)

CBOEdirect will encompass Market Maker Hand Held (MMHH) functionality, also known as Market Maker Trade Notification (MMTN). The existing MMHH system gives Firm traders the ability to electronically enter their trades on a firm's handheld device and send them for processing to the MMHH System via the NCC interface. With the enhancement of the FIX Logon Message (35=A) and introduction of two new FIX messages, FIX users will have the ability to perform MMHH functionality using the CBOEdirect platform instead of the NCC interface. FIX users must indicate participation in MMHH functionality through the TargetSubID [57] in the Logon Message (35=A). Refer to FIX document, FIX-03a, for details.

The CBOEdirect FIX engine will support a new "user defined' message type: AddFloorTrade (35=U01), for MMHH floor trade generation. This new message type re-uses FIX 4.2 tags. No new user defined tags are used.

Add Floor Trade Message (Inbound)

Below are the tags used to generate MMHH floor trades.

AddFloorTrade Message (Inbound)

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage

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Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
	Standard Header	Y	Y	*MsgType[35]* = U01
109	ClientID	N	Y	**Options and Futures**: Correspondent Firm. This is an optional free-form field. The maximum size is 4 characters and the data type is uppercase alphabetic only.
76	ExecBroker	N	**Y**	**Options and Futures**: Executing Firm: Valid CBOE clearing firm number for representation of this order when traded and submitted to CBOE Trade Match (CTM). This is a required field that must contain the *FirmIdentifier(123)* or *ExchangeIdentifier:FirmIdentifier (CME:123)* if the exchange is not CBOE.
55	Symbol	Y	Y	Trading Symbol. Examples: **CBOE Options** `MSQ, DLQ, IBM`, etc. this would be the reporting class symbol (e.g. DLQ, DLY, DLJ, DLZ, etc) **OneChicago Stock Futures** `MSFT1C, IBM1C`, etc.
48	SecurityID	N	N	CBOEdirect product key **Note: the CBOEdirect product key is *required* for all strategy (multi-leg) products.**
1	Account	N	N	**Options and Futures**: Account field is required for market-maker order entry but optional for broker-dealer order entry. Accounts must be approved by the CBOE Membership Department and must be pre-configured by your API testing representative. Exact size is 3 and data type is alpha only. When market-makers enter orders of origin "I", tag 9324 should be used in addition to tag 1 (see 9324 requirements). For entering orders of any origin other than "I", (including "C" = customer), the Account field can contain any value. This field should be left blank for Customer and Firm orders unless the Firm is utilizing Cust/Firm Sub-Accounting at OCC. Clearing account for "M" and "N" orders should always be sent in this field. For orders with a "W" designation, Firms are advised not to send data in the Account [tag 1] field.
375	ContraBroker	N	Y	FirmIdentifier of contraparty to trade. Currently not used for all orders.
337	ContraTrader	N	Y	Trader or broker acronym of contraparty to trade. Currently not used for all orders.
167	SecurityType	N	Y	Required 'OPT' for options, CS, FUT, INDX, MLEG, USTB
200	MaturityMonthYear	N	Y	Format: YYYYMM (e.g., `200209`)
205	MaturityDay	N	Y	Specifies the maturity date of the product.
201	PutOrCall	N	Y	Required for Option products. 0 = Put, 1 = Call
202	StrikePrice	N	Y	Required for Option products

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Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
54	Side	Y	Y	For Options or Futures orders, CBOE supports the following values: 1 = Buy 2 = Sell For orders of type MLEG (strategies), CBOE supports the following values: 1 = Same ***or*** B = Same 2 = Opposite ***or*** C=Opposite For Stock, CBOE supports the following values: 1 = Buy 2 = Sell 5 = Sell_Short 6 = Sell_Short_Exempt
38	OrderQty	N	Y	Quantity specified on the original request message from the firm.
44	Price	N	N	**All orders**: Price per contract – should be specified for all limit orders; Price should not be specified on market orders. Refer to Contingency Mapping Table. **Stock**: Should be specified for all limit orders. Refer to Contingency Mapping Table. **Cabinet**: Required for entering a Cabinet order. 0.01=Cabinet
60	TransactTime	N	Y	Time order is submitted in UTC time
77	OpenClose	N	N	**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 Customer ("C") options orders. Ignored for Firm ("F") orders. Orders of all other origins in W_MAIN may use this tag or leave it out of the order. Orders of all origins in non-W_MAIN sessions may use this tag or leave it out of the order.
336	TradingSessionID	N	**Y**	**Options and Futures**: No more than one TradingSessionID must be specified on each order: CBOE trading floor: 'W_MAIN' CBOE Futures Exchange: 'CFE_MAIN' CFE Options on Futures: 'COF_MAIN' OneChicago: 'ONE_MAIN' Stock Trading On CBOEdirect: 'W_STOCK' CBOE 2: "C2_MAIN"
439	ClearingFirm	N	N	CMTA - This is an optional field designating a clearing firm that is different from the executing firm, as entered in ExecBroker (76). The value entered in ClearingFirm(439) is the clearing firm number where this trade will clear at the OCC.
440	ClearingAccount	N	N	**Options and Futures**: Required for all futures orders (ONE and CFE). Optional for non-M, non-N, and non-I options orders. Must specify the market-maker account where the trade will clear at the OCC. This field could be the Q-account, sub-account, joint account, or the market-maker acronym of the market-maker. Market-makers entering orders of origin "M" or "N" should include the sub-account in this field. For Customer orders, the OCC customer ID should be entered in this field. Market-makers entering orders of origin "I" should use tag 9324 instead of tag 440 (see 9324 requirements).
CBOE Custom Fields				

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
9324	ClearingOptionalData	N	Y	**For Qualified Contingent Trade:** Enter A:AIQ as the first characters in the Primary Order to direct CBOE to treat the paired orders as QCT at the start of the AIM auction. This will allow hedged order pairs to cross immediately, ahead of any resting customer orders for QCT orders. **For Sweep and AIM:** Enter A:AIS as the first characters in the primary order to instruct CBOE to sweep all better priced protected quotes at away exchanges at the same time as the commencement of the AIM auction. **For AIM Auctions:** Enter A:AIM as the first characters. If a Firm does not wish to cancel the primary order when the auction expires, the Firm must enter A:AIR, instead of A:AIM, in this field. This will designate the primary order to be returned to the system and trade or book as a regular order. **Directed AIM:** CBOE high and low order values prefixed by DAIM for Directed AIM match orders. **Stock: "**NLTR" (Names Later) is entered in this field to indicate non real-time clearing orders in the W_STOCK session. If the order gets executed, the trade will not automatically clear. Traders will have to provide the contra-party information at the end of the day before the trade clears. **Options:** For **Customer** orders, the first four characters of this field get reported to the last four characters of the CBOE Trade Match Optional Data field. These four characters get reported to the OCC. Contains data that will be passed on to CBOE trade match (CTM) and will be part of clearing information sent to the OCC. The data is specific to each member firm. For market maker orders routed to the CBOE Trading Floor (W_MAIN session), the tag 9324 should contain the Market Maker Account (Q Account, joint account, or market maker acronym). **Preferred Market Maker** Firms that wish to give one DPM priority in participating in a trade use this tag. The firm would send "P:firm;" and can coexist with other data that may be present in this tag. "firm" is the CBOE firm acronym that will be supplied by CBOE. Please note that the message must include the colon : **Futures**: This field stays with the order for the life of the order. The first 16 bytes go to the OCC.
	Standard Trailer	Y	Y	

Example of AddFloorTrade Message (In)

8=FIX.4.2|9=0220|35=U01|34=5|49=TEST701|56=DFIX701|52=20090715-15:49:12|55=AA|167=OPT|200=200910|205=22|201=1|202=7.50|38=5|44=1.50|54=1|375=671|337=AAA|109=AAD|76=551|77=O|1=QSJ|440=MWM|9324=optionaldata|60=20090715-12:00:00|336=W_MAIN|10=096|

Example of Business Reject Message (Out)

If a user attempts to use the AddFloorTrade without indicating MMHH interest at login, a BusinessReject (35=j) message will be generated in response.

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8=FIX.4.2|9=0102|35=j|34=5|49=DFIX701|56=TEST701|52=20090715-15:49:12|45=5|372=U01|380=0|58=Other: Not MMHH Subscribed|10=099|

Add Floor Trade Message (Outbound)

The new messages are sent back to the user with additional tags and values indicating the success or failure of the message processing. The contents of the inbound AddFloorTrade message are sent outbound, possibly with the following additions:

AddFloorTrade Message (Outbound)

Tag	Field Name	FIX 4.2 usage
	Standard Header	*MsgType[35]* = U01
48	SecurityID	CBOEdirect product key **Note: the CBOEdirect product key is *required* for all strategy (multi-leg) products.**
107	SecurityDesc	**Strategy Products**: This field will be set to the strategy product names as described in the CBOEdirect W_MAIN / ONE Strategy Order Test Plan. 1 = Unknown 2 = Straddle 3 = Pseudo_Straddle 4 = Vertical 5 = Ratio 6 = Time 7 = Diagonal 8 = Combo 9 = Buy-Write **Option, Future, Index, or Underlying Products**: This field will not be present in Execution Reports.
39	OrdStatus	"0" (New) – If "New" the AddFloorTrade was successful, and an ExecID will also be sent. "8" (Rejected) – If "Rejected," text will be also be sent indicating what failed in the inbound message.
58	Text	Text indicating what failed with the inbound message.
17	ExecID	This is the TradeID of the successful AddFloorTrade. It may be used inbound to attempt to delete the FloorTrade in a DelFloorTrade message. Values: HiNum: LoNum
200	MaturityMonthYear	Format: YYYYMM (e.g., 200209)
205	MaturityDay	Specifies the maturity date of the product.
201	PutOrCall	Required for Option products. 0 = Put, 1 = Call
202	StrikePrice	Required for Option products

Examples of outbound messages (two failures, one success)

(Syntax Error in)
8=FIX.4.2|9=0227|35=U01|34=3|49=TEST701|56=DFIX701|52=20090714-20:31:26|55=A|167=OPT|200=200908|205=22|201=1|202=30.00|38=5|44=1.50|54=1|375=CBOE:000|337=MWM|109=CBOE:000|76=CBOE:123|77=O|1=X01|440=MWM|439=CBOE:123|9324=optionaldata|336=W_MAIN|10=185|

(Syntax Error out)
8=FIX.4.2|9=0250|35=U01|34=3|49=DFIX701|56=TEST701|52=20090714-20:31:26|38=5|44=1.50|54=1|109=CBOE:000|337=MWM|375=CBOE:000|77=O|1=X01|440=MWM|439=CBOE:123|76=CBOE:123|9324=optionaldata|55=A|167=OPT|200=200908|205=22|201=1|202=30.00|39=8|58=Missing tag:60|336=W_MAIN|10=024|

(Validation Error in)
8=FIX.4.2|9=0248|35=U01|34=7|49=TEST701|56=DFIX701|52=20090714-20:36:32|55=A|167=OPT|200=200908|205=22|201=1|202=30.00|38=5|44=1.50|54=1|375=CBOE:000|337=MWM|109=CBOE:000|76=CBOE:123|77=O|1=X01|440=MWM|439=CBOE:123|9324=optionaldata|60=20090714-20:35:16|336=W_MAIN|10=207|

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(Validation Error out)
8=FIX.4.2|9=0353|35=U01|34=7|49=DFIX701|56=TEST701|52=20090714-20:36:32|38=5|44=1.50|54=1|109=CBOE:000|337=MWM|375=CBOE:000|77=O|1=X01|440=MWM|439=CBOE:123|76=CBOE:123|9324=optionaldata|48=637946427|55=A|167=OPT|200=200908|205=22|201=1|202=30.00|39=8|58=NotAccepted:Invalid firm number: 000. The firm number must be an positive integer. |60=20090714-20:35:16|336=W_MAIN|10=035|

(Success in)
8=FIX.4.2|9=0221|35=U01|34=42|49=TEST701|56=DFIX701|52=20090714-21:23:26|55=AA|167=OPT|200=200910|205=22|201=1|202=7.50|38=5|44=1.50|54=1|375=671|337=AAA|109=AAD|76=551|77=O|1=QSJ|440=MWM|9324=optionaldata|60=20090714-12:00:00|336=W_MAIN|10=138|

(Success out)
8=FIX.4.2|9=0259|35=U01|34=93|49=DFIX701|56=TEST701|52=20090714-21:23:26|38=5|44=1.50|54=1|109=AAD|337=AAA|375=671|77=O|1=QSJ|440=MWM|76=551|9324=optionaldata|48=638342660|55=AA|167=OPT|200=200910|205=22|201=1|202=7.50|17=65428:1617608111|39=0|60=20090714-12:00:00|336=W_MAIN|10=222|

Deleting Floor Trades (otherwise called MMTN) using the Delete Floor Trade Message (*MsgType=U02*)

The CBOEdirect FIX engine will support a new "user defined' message type: DelFloorTrade (35=U02), for MMHH floor trade deletions. This new message type re-uses FIX 4.2 tags. No new User Defined tags are used. The tags chosen for the new message retain their normal meanings (as close as possible).

Delete Floor Trade Message (Inbound)

Below are the tags used to delete a MMHH floor trade.

DelFloorTrade Message (Inbound)

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
	Standard Header	Y	Y	*MsgType[35]* = U02
109	ClientID	N	Y	**Options and Futures**: Correspondent Firm. This is an optional free-form field. The maximum size is 4 characters and the data type is uppercase alphabetic only.
76	ExecBroker	N	Y	**Options and Futures**: Executing Firm: Valid CBOE clearing firm number for representation of this order when traded and submitted to CBOE Trade Match (CTM). This is a required field that must contain the *FirmIdentifier(123)* or *ExchangeIdentifier:FirmIdentifier (CME:123)* if the exchange is not CBOE.
17	ExecID	N	Y	Used inbound to attempt to delete the FloorTrade. Values: HiNum: LoNum
55	Symbol	Y	Y	Trading Symbol. Examples: **CBOE Options** `MSQ, DLQ, IBM`, etc. this would be the reporting class symbol (e.g. DLQ, DLY, DLJ, DLZ, etc) **OneChicago Stock Futures** `MSFT1C, IBM1C`, etc.
48	SecurityID	N	N	CBOEdirect product key **Note: the CBOEdirect product key is *required* for all strategy (multi-leg) products.**
167	SecurityType	N	Y	Required 'OPT' for options, CS, FUT, INDX, MLEG, USTB
200	MaturityMonthYear	N	Y	Format: YYYYMM (e.g., `200209`)
205	MaturityDay	N	Y	Specifies the maturity date of the product.
201	PutOrCall	N	Y	Required for Option products. 0 = Put, 1 = Call
202	StrikePrice	N	Y	Required for Option products

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
336	TradingSessionID	N	**Y**	**Options and Futures**: No more than one TradingSessionID must be specified on each order: CBOE trading floor: 'W_MAIN' CBOE Futures Exchange: 'CFE_MAIN' CFE Options on Futures: 'COF_MAIN' OneChicago: 'ONE_MAIN' Stock Trading On CBOEdirect: 'W_STOCK' CBOE 2: "C2_MAIN"
	Standard Trailer	Y	Y	

Delete Floor Trade Message (Outbound)

The contents of the inbound Delete Floor Trade message are sent outbound, possibly with the following additions:

DelFloorTrade Message (Outbound)

Tag	Field Name	FIX 4.2 usage
	Standard Header	*MsgType[35]* = U02
48	SecurityID	CBOEdirect product key **Note: the CBOEdirect product key is *required* for all strategy (multi-leg) products.**
107	SecurityDesc	**Strategy Products**: This field will be set to the strategy product names as described in the CBOEdirect W_MAIN / ONE Strategy Order Test Plan. 1 = Unknown 2 = Straddle 3 = Pseudo_Straddle 4 = Vertical 5 = Ratio 6 = Time 7 = Diagonal 8 = Combo 9 = Buy-Write **Option, Future, Index, or Underlying Products**: This field will not be present in Execution Reports.
39	OrdStatus	"0" (New) – If "New" the DelFloorTrade was successful. "8" (Rejected) – If "Rejected," text will be also be sent indicating what failed in the inbound message.
58	Text	Text indicating what failed with the inbound message.
200	MaturityMonthYear	Format: YYYYMM (e.g., 200209)
205	MaturityDay	Specifies the maturity date of the product.
201	PutOrCall	Required for Option products. 0 = Put, 1 = Call
202	StrikePrice	Required for Option products

Example of DelFloorTrade Messages (two failures, one success)

(Syntax Error in)
8=FIX.4.2|9=0249|35=U02|34=41|49=TEST701|56=DFIX701|52=20090717-13:07:19|55=A|167=OPT|200=200908|205=22|201=1|202=30.00|38=5|44=1.50|54=1|375=CBOE:001|337=MWM|109=CBOE:001|76=CBOE:123|77=O|1=X01|439=CBOE:123|440=MWM|9324=optionaldata|60=20090717-12:00:00|336=W_MAIN|10=254|

(Syntax Error out)

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8=FIX.4.2|9=0212|35=U02|34=41|49=DFIX701|56=TEST701|52=20090717-13:07:19|109=CBOE:001|76=CBOE:123|55=A|167=OPT|200=200908|205=22|201=1|202=30.00|39=8|58=Invalid tag:38,44,54,375,337,77,1,439,440,9324,60 Missing tag:17|336=W_MAIN|10=165|

(Semantic Error in)
8=FIX.4.2|9=0120|35=U02|34=42|49=TEST701|56=DFIX701|52=20090717-13:07:43|17=123:456|55=AA|167=OPT|48=638342660|76=551|109=AAD|336=W_MAIN|10=233|

(Semantic Error out)
8=FIX.4.2|9=0218|35=U02|34=42|49=DFIX701|56=TEST701|52=20090717-13:07:43|109=AAD|76=551|48=638342660|55=AA|167=OPT|200=200910|205=17|201=1|202=7.5|17=123:456|39=8|58=NotFound:Unable to find trade report for tradeId: 123 456|336=W_MAIN|10=134|

(Success in)
8=FIX.4.2|9=0128|35=U02|34=47|49=TEST701|56=DFIX701|52=20090717-13:09:01|17=65430:888458114|55=AA|167=OPT|48=638342660|76=551|109=AAD|336=W_MAIN|10=158|

(Success out)
8=FIX.4.2|9=0165|35=U02|34=99|49=DFIX701|56=TEST701|52=20090717-13:09:01|109=AAD|76=551|48=638342660|55=AA|167=OPT|200=200910|205=17|201=1|202=7.5|17=65430:888458114|39=0|336=W_MAIN|10=039|

Creating and submitting Light Orders using the *New Order Single Message (MsgType=D)*

A mechanism for entering orders makes order entry light and rapid. Light order entry is accomplished by minimizing the order message size and by lessening the order status reports sent to the FIX user. Customers can use this interface in lieu of quotes to take the added advantages of tiered quoting as well as one sided quoting. FIX users will have to map to a new UDF in the Logon message, *MsgType[35] = A*, to specify whether to enter light orders, regular orders or both. Refer to Fix-03a, Session Layer, for Logon details.

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

Light Order Entry - 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."*

Tag	Field Name	FIX Req'd	CBOE Req'd	FIX 4.2 usage
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'
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	

Example of Light Order Entry

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|

Considerations for Light Orders

- Partial cancels are not supported.
- Origin codes that correspond to quote-like orders (e.g. "I") are not allowed for Light Orders.
- Bust Reinstate of Light Orders is not supported.
- Light Orders are supported for both options as well as stocks.
- Market Orders are not allowed.
- Light Orders are always treated as *DAY* orders.
- The only contingency that is allowed is *IOC*. However, cancel/replace of IOC orders is not supported and will be rejected.
- Light Orders are not allowed on BOB classes.
- Light Orders are not allowed on restricted series.
- All Light Orders for a user will be canceled on logout.
- 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.
- Light Orders are NBBO protected only if the NBBO protected flag is set to true in the incoming order.
- 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.
- 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 Order Single Message (*MsgType=D*) Responses

CBOE will respond with a FIX *Execution Report (MsgType=8)* message with the OrdStatus field set to ***New*** indicating CBOEdirect accepted the order. In addition to the common fields defined for every execution (as described in the next section) the following fields are returned.

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Table 9 Execution Report—New Order

In addition to the ***Common Execution Report fields*** defined above, the following applies for this type of Execution Report		
Tag	**Field Name**	**Comments**
150	ExecType	"0" (New)
39	OrdStatus	"0" (New)
151	LeavesQty	Set equal to OrderQty from New Order message received from firm.
	Standard Trailer	

Light Order Execution Report

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.
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	

Example of Light Order New Execution Report

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|

Order Cancel Request from Firm

Firms use the FIX *Order Cancel Request* message to cancel **all** of the remaining quantity of an order that has been entered using FIX 4.2.

A firm must be able to submit the Order Cancel Request message to become a certified CBOEdirect user.

You must use the Order Cancel Replace Request to perform a partial cancel.

Order Cancel Requests and Order Cancel/Replace Requests transmitted to the trading floor may require a response from floor personnel under certain conditions. This means that the receipt of an Execution Report may not be immediate.

Table 10 Order Cancel Request Message

Tag	Field Name	FIX Req'd	CBOE Req'd	Comments
	Standard Header	Y	Y	MsgType = F
11	ClOrdID	Y	Y	Unique ID of cancel request (not the original order) as assigned by the institution. Format: AAA9999-YYYYMMDD.
41	OrigClOrdID	Y	Y	ClOrdID of the order that the firm wishes to cancel
109	ClientID	N	Y	Must be the same as specified on the original order request
76	ExecBroker	N	**Y**	Must be the same as specified on the original order request
55	Symbol	Y	Y	Must be the same as specified on the original order request
48	SecurityID	N	N	If used, must be the same as specified on the original order request
22	IDSource	N	N	Must be the same as specified on the original order request
167	SecurityType	N	**Y**	OPT, CS, FUT, INDX, MLEG, USTB
200	MaturityMonthYear	N	**Y**	Must be the same as specified on the original order request
201	PutOrCall	N	**Y**	Must be the same as specified on the original order request.
202	StrikePrice	N	**Y**	Must be the same as specified on the original order request.
54	Side	Y	Y	Must be the same as specified on the original order request.
38	OrderQty	N	N	This value is ignored by CBOEdirect FIX 4.2 Service
60	TransactTime	Y	Y	Time that the cancel request is submitted in UTC time
	Standard Trailer	Y	Y	

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	

Example of Light Order Cancel Request Message

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|

Normal CBOE Response

CBOE will respond with a FIX *Execution Report* message. The OrdStatus field set to ***Pending Cancel/Replace*** indicating the cancel request was accepted by CBOEdirect. In addition to the common fields defined for every execution the following fields are returned.

Table 11 Execution Report—Pending Order Cancel/Replace

In addition to the ***Common Execution Report fields*** defined above, the following applies for this type of Execution Report		
Tag	**Field Name**	**Comments**
150	ExecType	"6" (Pending Cancel/Replace)
39	OrdStatus	"6" (Pending Cancel/Replace)
151	OrderQty	Original Quantity
	Standard Trailer	

Note: Execution Reports with a "Pending" status may actually arrive after an Execution Report with the "Result" Status. Both messages are sent, and the "Pending" message usually arrives first.

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.

Important Considerations for concurrent thread model users

Firms that use the concurrent thread model feature for order processing, there is a possibility of the user's cancel request getting rejected when an order is in flight. The Firm should make changes to their software so that they resubmit the cancel request if they think they still have an open order in the market which is not completely filled or cancelled. Refer to the Order Processing section in this document for details.

Additional Behavior in Too Late to Cancel Scenarios

With the late April 2008 release, there is additional behavior to consider in response to requests to cancel an order which has been completely filled or cancelled (an attempt to cancel a non-working order). Specifically, with this release, most order query activities have moved from the back end processes to be the FIX layer itself in the interest of improved performance. Order Cancel Requests and Order Cancel Replace Requests now query a local maintained repository of working orders. This local repository keeps track of quantities filled or cancelled for the orders. When no working volume for an order remains, it remains in the local repository for a short period of time, and then it is removed. During the period of time that the non-working order is in the local repository, the CBOE FIX will respond to a cancel request, with a Cancel Reject Message with the details of the order. After the order has been removed from the local repository, a Cancel Reject Message, CxlRejReason [tag102], will be produced indicating that the requested order is not found.

The cancel execution reports for non-working orders are no longer GMD. If a user logs out before receiving one or more cancel execution reports, they will not be re-published as poss-resend when the user logs in again.

There is an important consequence to be noted with regard to order entry. If the original order has not been accepted by the system, the cancel request for that order will be rejected with CxlRejReason [tag102]. So, it is important to wait for the order ACK before issuing a cancel request. Since a non-working order will be cancelled or filled, they do not warrant any cancel requests. Any cancel replace request on non-working orders will be rejected.

Cancel Reject for a Non-Working Order (from Order Cancel Request)

8=FIX.4.2^A9=0158^A35=9^A34=81^A49=DFIX201^A56=TEST101^A52=20080421-18:50:20^A37=65028:196700043^A11=KVY0002-20080421^A41=KVY0001-20080421^A39=2^A76=549^A60=20080421-18:50:20^A434=1^A102=0^A10=097^A

This behavior is consistent with the prior “Too Late to Cancel” behavior.

Cancel Reject for a Not Found Order (from Order Cancel Request)

8=FIX.4.2^A9=0147^A35=9^A34=98^A49=DFIX201^A56=TEST101^A52=20080421-18:57:14^A37=NONE^A11=JZN0002-20080421^A41=JZN0001-20080421^A39=8^A76=549^A60=20080421-18:57:13^A434=1^A102=1^A10=148^A

The primary differences are the values found in tags 37 (OrderID), 39 (OrderStatus), and 102 (CxlRejReason).

The time during which a non-working order may remain in the local repository is configurable. The current value is between 30-60 seconds.

Order Cancel Replace Request from Firm

Firms use the FIX *Order Cancel Replace Request* message to cancel all or part of an existing order that has been entered using FIX 4.2.

A firm must be able to submit the Order Cancel Replace Request message to become a certified CBOEdirect user.

If a firm sends a Cancel Replace Request for an existing order, CBOE will cancel all remaining volume for the original order, issue the new replace order, and issue a new order ID (ClOrdID[11], OrderID[37], and / or SecondaryOrderID[198]) for the new order. This complies with FIX 4.2 Specification.
THIS MAY CAUSE THE REPLACE ORDER TO LOSE PRICE/TIME PRIORITY AS COMPARED TO ITS ORIGINAL ORDER.

The Order Cancel Replace Request can only be used to modify the original order – you are not able to change the security information. A Cancel Request followed by a New Order – Single message must be used to change the product or broker information.

Cancel and cancel replace requests transmitted to the trading floor may require a response from floor personnel under certain conditions. This means that the receipt of an Execution Report may not be immediate.

Cancel Replace Behavior

The Cancel Replace Request in CBOE FIX 4.2 Service is intended to be a maintenance function only. The CBOE FIX 4.2 Service supports a subset of FIX order handling semantics. Only a limited number of order attributes can be changed using the Cancel Replace message. To change the security (such as option series or futures product) on an order, a cancel request followed by a New order – single is required. The following information on an order can be modified using a Cancel Replace Request:

- Price
- Quantity (increase or decrease)
- Accounting information (Account, ClearingAccount ClearingFirm)
- If full cancel replace behavior is required, you must perform a Cancel Request, followed by a New Order Request.

Important Considerations for FIX 4.2 Cancel Replace Single-Leg Orders

- CBOE takes the OrderQty [tag 38] in the firm's Cancel Replace Request message and subtracts the total quantity traded (the sum of all partial fill reports) from the original order that is being canceled. CBOE does not subtract the partially traded quantity from all previous orders connected to the original order, only the most recent one that is being canceled as part of the Cancel Replace request. CBOE uses this quantity (new order's CXL/RPL tag 38 minus the old order's total quantity traded) as the quantity of the new order to be booked that is replacing the old order. This logic prevents a FIX 4.2 order entry user from accidentally overfilling an order if a Cancel Replace Request and a fill report pass in flight. This logic meets FIX 4.2 standard specification.
- If an order is Cancel Replaced multiple times, CBOE only maintains order history for the current order, and the most recent order canceled. So if an order were cancel replaced 3 times (a total of 4 orders), CBOE would only maintain the history for orders 3 and 4. Order history for orders 1 and 2 would still be available through a query of Order Status, but they would not be connected with orders 3 and 4 as part of the Cancel Replace sequence. <u>This logic does not meet FIX 4.2 standard specification</u>.

Important Considerations for W_MAIN Strategy (Multi-leg) FIX 4.2 Cancel Replace Orders

- CBOE takes the OrderQty [tag 38] in the firm's FIX 4.2 W_MAIN strategy order Cancel Replace Request message and uses that quantity for the new quantity (multiplier) of the new W_MAIN strategy order. CBOE ***<u>does not</u>*** subtract the total quantity traded from the original FIX 4.2 W_MAIN strategy order that is being canceled as it does for single-leg cancel-replace orders and strategy cancel-replace orders in ONE_MAIN and CFE_MAIN (electronic sessions). As expected, when partial fill reports take

place, CBOE will send the fill report messages to the firm. However, CBOE is currently unable to update the partially filled quantity on the W_MAIN strategy order when the firm queries order status. This logic does not meet FIX 4.2 standard specification.

Important Considerations for ONE_MAIN and CFE_MAIN (electronic session) Strategy (Multi-leg) FIX 4.2 Cancel Replace Orders

- ONE_MAIN and CFE_MAIN (electronic session) strategy FIX 4.2 Cancel Replace orders function the same way as FIX 4.2 single-leg cancel-replace orders. CBOE takes the OrderQty [tag 38] in the firm's strategy order Cancel Replace Request message and subtracts the total quantity traded (the sum of all partial fill reports) from the original strategy order that is being canceled. CBOE does not subtract the partially traded quantity from all previous orders connected to the original order, only the most recent one that is being canceled as part of the Cancel Replace request. CBOE uses this quantity (new order's CXL/RPL tag 38 minus the old order's total quantity traded) as the quantity of the new order to be booked that is replacing the old order. This logic prevents a FIX 4.2 order entry user from accidentally overfilling an order if a Cancel Replace Request and a fill report pass in flight. This logic meets FIX 4.2 standard specification.

Important Considerations for Strategy (Multi-leg) FIX 4.2 Cancel Replace Orders In All Sessions

- If a FIX 4.2 strategy order is Cancel Replaced multiple times, CBOE only maintains order history for the current strategy order, and the most recent strategy order canceled. This is the same behavior for single-leg FIX 4.2 orders. So if a FIX 4.2 strategy order were cancel replaced 3 times (a total of 4 orders), CBOE would only maintain the history for orders 3 and 4. Order history for orders 1 and 2 would still be available through a query of Order Status, but they would not be connected with orders 3 and 4 as part of the Cancel Replace sequence. This logic does not meet FIX 4.2 standard specification.

The COMPASS (CMS) ability to change (or correct) option series is not supported as part of the Cancel Replace FIX message standard. You must send a Cancel Request followed by a new order.

Important Considerations for Light Order Cancel Replace

- The cancel/replace for Light orders has been implemented such that it is processed in the trade engine as a single transaction and is specifically designed to prevent overfills. For this purpose, the FIX user is required to specify the cancel quantity of the previous order – the specified cancel quantity must match the remaining order quantity on the previous order. The user should be aware of the following scenarios:
    - If a user tries to cancel a quantity that is greater than the remaining quantity (suggesting an in-flight fill), CBOEdirect will cancel the remaining quantity and cancel the replace order.
    - If a user tries to cancel a quantity that is less than the remaining on the order and replace it, the cancel request quantity will be canceled and the replace order will also be canceled.

Table 12 Order Cancel Replace Request Message

Tag	Field Name	FIX Req'd	CBOE Req'd	Comments
	Standard Header	Y	Y	MsgType = G
11	ClOrdID	Y	Y	Unique identifier of this cancel replace request (new order, not the original order). Will be used as the ClOrdId of the replacement order. This order ID should be different than the OrigClOrdID[41] Format: AAA9999-YYYYMMDD.
41	OrigClOrdID	Y	Y	ClOrdID of the original order that is being canceled
109	ClientID	N	Y	Must match original order. Will be the ClientID of the replacement order.
76	ExecBroker	N	Y	Must match original order. Will be the ExecBroker of the replacement order.
21	HandlInst	Y	Y	Must be specified per FIX 4.2 specification. Ignored by CBOEdirect. Any value is accepted.
100	ExDestination	N	N	"W", ignored by CBOEdirect FIX 4.2 Service
55	Symbol	Y	Y	Must match original order
48	SecurityID	N	N	If used, must match original order
22	IDSource	N	N	If used, must match original order

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Tag	Field Name	FIX Req'd	CBOE Req'd	Comments
167	SecurityType	N	Y	Must match original order
200	MaturityMonthYear	N	Y	Must match original order
201	PutOrCall	N	Y	Must match original order
202	StrikePrice	N	Y	Must match original order
54	Side	Y	Y	Must match original order
38	OrderQty	N	Y	Replacement order volume (the volume of the new order)
18	ExecInst	N	N	For replacement order
110	MinQty	N	N	For replacement order
1	Account	N	N	For replacement order
40	OrdType	Y	Y	For replacement order
44	Price	N	N	For replacement order
99	StopPx	N	N	For replacement order
59	TimeInForce	N	N	For replacement order
60	TransactTime	N	Y	Time cancel/replace is submitted in UTC time
47	Rule80A	N	N	Specifies order capacity (origin) on replacement order
77	OpenClose	N	Y	For replacement order (see requirements for "New Order")
203	CoveredOrUncovered	N	N	For replacement order
204	CustomerOrFirm	N	Y	For replacement order – used as an alternative to Rule80A[47]
386	NoTradingSessions	N	**Y**	Used to specify trading session other than the primary trading session for a product for the replacement order.
Being Repeating Group for NoTradingSessions				
336	→TradingSessionID	N	Y	Required if NoTradingSessions > 0 TradingSessionID of the replacement order.
End Repeating Group				
388	DiscretionInst	N	N	For replacement order
389	DiscretionOffset	N	N	For replacement order
439	ClearingFirm	N	N	CMTA For replacement order
440	ClearingAccount	N	N	**Options and Futures**: Required for all Futures orders and required for Market-Maker Options orders. The ClearingAccount field must specify the Market Maker Account where the trade will clear at the OCC. This field could be the Q account, sub-account, joint account, or the market-maker acronym of the market maker.
CBOE Custom Fields				
9324	ClearingOptionalData	N	N	See *New Order Single Message* specs above for important clearing information related to this tag.
9369	PriceProtectionScope	N	N	Defines the type of price protection the customer requires on their order Valid values: 0 = None 1 = Local (Exchange, ECN, ATS) 2 = National (Across all national markets) 3 = Global (Across all markets) Used in message types: 8(n), D(n), G(n)
9370	MultiLegPositionEffects	N	N	Array of open close codes for multileg orders O-Open C-Close This tag is optional. Open close codes for legs of an option strategy. The open and close codes are concatenated together, one for each leg. Please see the "Creating and submitting an order using the New Order Single Message (MsgType=D)" section for more information.

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Tag	Field Name	FIX Req'd	CBOE Req'd	Comments
9371	MultilegCoveredOrUncovered	N	N	This tag is optional. Field containing the CoveredUncovered constants for the legs of a multileg instrument. Added for FIX 4.2 complex order support. Same values as CoveredOrUncovered (tag 203) 0 – Covered, 1-Uncovered. The values are concatenated together, with one value for each leg of an option strategy. Please see the "Creating and submitting an order using the New Order Single Message (MsgType=D)" section for more information.
9372	MultilegStockClearingFirm	N	N	The Clearing firm for the stock leg of a multileg option strategy added for complex order support in FIX 4.2. Used to specify the stock clearing firm for the stock leg of a combination stock – derivative strategy, such as a buy-write.
9465	OrderOrigin	N	N	If a Broker_Dealer enters an order on behalf of a CBOE market-maker on the trading floor, the market-maker's acronym must be entered in this tag. The default exchange is CBOE, but an exchange may be specified. This is also called "Originator". CBOE:ABC *-or you may enter-* ABC
20101	ShortSaleIndicator	Y	Y	Used to indicate short sale position for strategy orders created using the two-step method. Valid values: 1 = Buy 2 = Sell 5 = Sell_Short 6 = Sell_Short_Exempt
	Standard Trailer	Y	Y	

Light Order Cancel Replace Request Message

Tag	Field Name	FIX Red'd	CBOE Req'd	Comments
	Standard Header	Y	Y	MsgType[35] = G
11	ClOrdId	Y	Y	Unique identifier of this cancel replace request (new order, not the original order). Will be used as the ClOrdId of the replacement order. This order ID should be different than the OrigClOrdID[41] Format: AAA9999-YYYYMMDD.
41	OrigClOrdId	Y	Y	ClOrdId of the original order that is being cancelled.
37	OrderId	N	N	Can be specified to find cancel original order. If specified, it must match the CBOE OrderId from the execution report, which is of the form highCBOEId:lowCBOEId
48	SecurityId	N	Y	SecurityId (ProductKey) must be specified. Must match ProductKey of the original order.
54	Side	Y	Y	Must match original order
38	OrderQty	N	Y	Replacement order volume (the volume of the new order)
40	OrdType	N	Y	For replacement order
44	Price	N	Y	For replacement order
47	Rule80A	N	Y	Specifies order capacity (origin) on replacement order
77	OpenClose	N	Y	For replacement order (see requirements for "New Order")
386	NoTradingSession	N	Y	Used to specify trading session other than the primary trading session for a product for the replacement order.
Begin Repeating Group for NoTradingSession				
336	→ TradingSessionID	N	Y	Required if NoTradingSessions > 0 TradingSessionID of the replacement order.
End Repeating Group for NoTradingSession				

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Tag	Field Name	FIX Red'd	CBOE Req'd	Comments
CBOE Custom Fields				
9317	LightOrderIndicator	N	Y	Must be 1
9310	CancelOpenQty	N	Y	Specify the desired cancel quantity of the original order. Must match the remaining quantity on the original order.
9321	SecondaryClOrdId	N	N	8 character user generated Id

Normal CBOE Response

CBOE will respond with a FIX *Execution Report* message. The OrdStatus field set to ***Pending Cancel/Replace*** indicating the cancel request was accepted by CBOEdirect. Even though the request has been accepted, the cancel replace may not have been performed at this time. Subsequent Execution Reports will indicate the disposition of the request. Refer to the order state matrices at the end of the document for examples on CBOEdirect FIX 4.2 order handling.

Table 13 Execution Report—Pending Order Cancel/Replace

In addition to the ***Common Execution Report fields*** defined above, the following applies for this type of Execution Report			
Tag	**Field Name**	**FIX Req'd**	**Comments**
	Common Execution Report Fields	Y	MsgType = 8
38	OrderQty	Y	Replacement Quantity
39	OrdStatus	Y	"6" (Pending Cancel/Replace)
150	ExecType	Y	"6" (Pending Cancel/Replace)
	Standard Trailer	Y	

Note: Execution Reports with a "Pending" status may actually arrive after an Execution Report with the "Result" Status. Both messages are sent, and the "Pending" Message usually arrives first.

Light Order Cancel/Replace Response

For Light Order Cancel Replace, CBOE will no longer send Execution Reports with OrderStatus of Pending Cancel/Replace [Tag 39 = 6]. Instead, users will receive only an Execution Report for the cancel of the original order. See the "Execution Report – Cancel" section below.

In case the Light Order Cancel Replace is rejected because of a mismatch between the remaining quantity on the original order, and the cancel quantity specified by the user on the cancel replace, the CBOE will reject the Light Order Cancel Replace message with the reason specified on the Text [Tag 58] field as "Quantity Mismatch". In such a case, the remaining quantity on the Original Order will also be cancelled, and a separate cancel execution report sent out.

Users can receive two types of Rejects on the Cancel Replace message:

1. The complete message is rejected – i.e. both the cancel and replace parts of the message are rejected due to exceptions in the data contained in the message, or the format of the message etc. In such a case, both OrdStatus [Tag 39] and ExecType [Tag 150] fields on the execution report are set to "REJECTED".
2. Only the Replace part of the message is rejected, whereas the original order that this order intended to replace is cancelled. In such a case, the OrderId [Tag 37] and OrdStatus [Tag 39] will both refer to the original order, and the OrdStatus is set to "CANCELLED". The ExeType [Tag 150] refers to this Execution Report and is set to "REJECTED".

Order Status Request from Firm

The firm can specify an order status request from CBOE. An Execution Report will be sent in response to this message.
For all CBOE and ONE markets – you will obtain the current order status – including quantity values that comply with the FIX 4.2 specification. For CBOE open outcry markets – the order status will not contain additional information, such as location of the order on the trading floor. If backlogs in receiving Order Status and / or Execution Reports occur, the CBOE will remove the user's subscription to Order Status and notify the user by sending a Business Reject Message with reason text. The user would have to re-register for Order Status. Refer to document FIX-03b-Application Layer: Fundamentals and Field (Tag) Dictionary for details on Business Reject Messages.

Table 14 Order Status Request from Firm

Tag	Field Name	FIX Req'd	CBOE Req'd	Comments
	Standard Header	Y	Y	MsgType = H
37	OrderID	N	N	Optional - Order ID assigned by CBOE
11	ClOrdID	Y	Y	Branch code, Branch Sequence Number and Order Date. Format: AAA9999-YYYYMMDD.
109	ClientID	N	N	(Correspondent Firm)
1	Account	N	N	If specified, must match the value of the order whose status is being requested.
76	ExecBroker	N	N	Firm Acronym under which the order will be executed. This is currently hardwired to the FIX connection.
55	Symbol	Y	Y	Must match the value of the order whose status is being requested.
48	SecurityID	N	N	If specified, must match the value of the order whose status is being requested.
22	IDSource	N	N	If specified, must match the value of the order whose status is being requested.
167	SecurityType	N	N	If specified, must match the value of the order whose status is being requested.
200	MaturityMonthYear	N	N	If specified, must match the value of the order whose status is being requested.
205	MaturityDay	N	N	If specified, must match the value of the order whose status is being requested.
201	PutOrCall	N	N	If specified, must match the value of the order whose status is being requested.
202	StrikePrice	N	N	If specified, must match the value of the order whose status is being requested.
207	SecurityExchange	N	N	If specified, must match the value of the order whose status is being requested.
54	Side	Y	Y	Must match the value of the order whose status is being requested.
	Standard Trailer	Y	Y	

Execution Reports

If the firm does not have a connection when the execution report is generated, it will be queued until a firm connection is established and it is successfully sent to the firm or until it is cleared from the output queue in the FIX engine by CBOE personnel. The output queue will only be cleared after notification to the firm. This will most likely only occur after end of day.

The following types of Execution Reports are generated from CBOE.

Execution Report—Fill Report

The FIX 4.2 Service will create Execution Reports for each CBOEdirect Fill Report that is received. If specified at logon, fill reports can be received in compressed format. The firm can specify the ":COMPFILLRPT" to TargetSubID (tag 57) in the Logon Message (*Msg Type=A*) as described in document FIX-03a.

A firm must be able to handle Fill Report messages to become a certified CBOEdirect user.

Table 15 Execution Report—Fill Report CBOEdirect

In addition to the ***Common Execution Report fields*** defined above, the following applies for this type of Execution Report		
Tag	**Field Name**	**Comments**
30	LastMkt	Market of execution for last fill.
38	OrderQty	Original order quantity.
39	OrdStatus	"1" (Partial Fill) or "2" (Filled)
150	ExecType	"1" (Partial Fill) or "2" (Filled)
151	LeavesQty	Amount of contracts open for further execution
382	NoContraBrokers	Number of different brokers on the other side of this fill report
Begin Repeating Group for NoContraBrokers		
375	→ContraBroker	FirmIdentifier of contraparty to trade. Currently not used for all orders.
337	→ContraTrader	Trader or broker acronym of contraparty to trade. Currently not used for all orders.
437	→ContraTradeQty	Quantity traded with this contraparty
438	→ContraTradeTime	UTC Time of trade
Begin Repeating Group for NoContraBrokers		
Custom Defined Fields		
9433	*ExecutionInformation*	The acronym of the broker on the floor that executed the trade or the acronym of the system where the order executed. Currently not used for Linkage orders.

9730	*TradeLiquidityIndicator*	Billing type indicators Maker=A Taker=R Flash_Response=E Flash=F Cross=C Linked_AWAY=X Linked_AWAY_Response=L Opening=O ODD_LOT_FLASH=N ODD_LOT_RESPONSE=B RESTING=Q CROSS_PRICE_IMP=S FLASH_PRICE_IMP=T FLASH_RESPONSE_PRICE_IMP=U MAKER_TURNER=V RESTING_TURNER=W
	Standard Trailer	

Below are descriptions of the billing indicators.

- **Maker = 'A'**: refers to the person adding liquidity to the market, by basically having an order or quote resting in the book to be traded against. (i.e. they are establishing the price)
- **Taker = 'R'**: refers to the person taking liquidity from the market, by basically sending an order to trade against the book. (i.e. they are coming in and taking out the best price)
- **Flash= 'F'**: refers to an order that is being presented to the dealers for a short-term auction for step-up, before the order is routed to an away exchange for a fill.
- **Flash Response= 'E'**: refers to the dealer responding to a flash and effectively stepping up to improve the CBSX market to the prevailing price and fulfilling the customer here.
- **Linked Away= 'X'**: refers to an order that was sent to another market for execution.
- **Linked Away Response= 'L'**: refers to the response from the other exchange filling the CBSX order sent to them.
- **Opening = 'O'**: refers to all executions that take place as part of the opening rotation process itself.
- **Cross= 'C'**: refers to a trade whereby both buyer and seller are represented on a single transaction. Thus, neither is really a maker or taker per se, but rather virtually meet one another.
- **ODD_LOT_FLASH='N'**: used for CBSX odd lot orders or the odd lot portion of a mixed lot order that is being flashed.
- **ODD_LOT_RESPONSE='B'**: used for all responses to odd lot orders that are being flashed.

Example of New Order Report using TradeLiquidityIndicator [tag9730]

Order

[8=FIX.4.2^A9=0315^A35=8^A34=135^A49=DFIX301^A56=TEST301^A52=20070419-16:26:54^A6=0^A11=DRL0002-20070419^A14=0^A84=0^A426=0^A425=0^A424=100^A389=0^A76=CBOE:690^A17=57863:186.0:0.1^A20=0^A150=0^A22=8^A31=0^A32=0^A151=100^A37=57863:186^A38=100^A39=0^A40=2^A44=3^A201=0^A47=C^A207=W^A48=69210569^A167=CS^A54=2^A202=0^A55=DELL^A59=0^A336=W_STOCK^A60=20070419-16:26:54^A9369=2^A10=134^A]

Fill

[8=FIX.4.2^A9=0422^A35=8^A34=142^A49=DFIX301^A56=TEST301^A52=20070419-16:30:05^A6=0^A11=DRL0002-20070419^A14=100^A84=0^A426=0^A425=100^A424=100^A389=0^A76=CBOE:690^A17=57863:186.57877:500044.0^A20=0^A150=2^A22=8^A31=3^A32=100^A151=0^A442=1^A382=1^A375=CBOEW:000^A337=XXW^A437=100^A438=20070419-

```
16:30:05^A37=57863:186^A38=100^A39=2^A40=2^A44=3^A201=0^A47=C^A207=W^A48=69210569^A
167=CS^A54=2^A202=0^A55=DELL^A59=0^A336=W_STOCK^A60=20070419-
16:30:05^A9369=2^A9465=CBOE:BUF^A9433=XXW^A9730=A^A10=135^A]
```

Example of Fill Report using TradeLiquidityIndicator [tag9730] for ODD_LOT_FLASH=N

```
RESPONSE:8=FIX.4.2^9=0433^35=8^57=SUN:SUN^34=288^49=DFIX301^56=TEST302^52=20080131-
19:20:50^6=1.2^11=PGP0001-
20080131^14=30^84=0^426=1.2^425=30^424=30^389=0^76=CBOE:690^17=65036:247660053.6503
6:257710068.0^20=0^150=2^22=8^31=1.2^32=30^151=0^442=1^382=1^375=CBOEW:000^337=XXW^
437=30^438=20080131-
19:20:49^37=65036:247660053^38=30^39=2^40=2^44=1.2^201=0^47=C^207=W^48=69208659^167
=CS^54=1^202=0^55=C^59=0^336=W_STOCK^60=20080131-
19:20:50^9369=2^9433=XXW^9730=N^10=155^
```

Execution Report—Cancel

The Execution Report generated by FIX 4.2 will contain a user defined field that indicates the quantity canceled (CxlQty[84]). This differs from FIX order handling semantics.

When a series becomes restricted, any resting orders that would open a position will be canceled by the system. Any resting orders that are cancelled when a series becomes restricted will be sent via execution report (ExecType = 8) and will have a new text on the cancel report with the string "CANCEL_ON_RSS".

A firm must be able to handle Cancel messages to become a certified CBOEdirect user.

Table 16 Execution Report—Cancel Report from CBOEdirect

In addition to the ***Common Execution Report fields*** defined above, the following applies for this type of Execution Report		
Tag	**Field Name**	**Comments**
38	OrderQty	Original Volume
39	OrdStatus	"4" (Canceled)
84	CxlQty	Quantity Canceled on the order.
150	ExecType	"4" (Canceled)
151	LeavesQty	Leaves Quantity
58	Text	**Linkage**: May be used to designate a reason for cancellation.
	Standard Trailer	

Light Order Cancel Report from CBOEdirect

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

Example of Light Order Cancel Request Message

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|

Execution Report—Reject

The FIX 4.2 Service will create Execution Reports of Reject for orders.

Orders that open positions for restricted series (RSS) will no longer be accepted and routed to a booth for handling. They will be rejected immediately. Any simple or complex order on a restricted series product will be rejected with execution report (ExecType = 8) with OrdRejReason [tag 103] set to 0 [Broker Option] and the text [tag 58] will have the exception message reason text.

Table 17 Execution Report—Reject Report from CBOEdirect

In addition to the ***Common Execution Report fields*** defined above, the following applies for this type of Execution Report		
Tag	**Field Name**	**Comments**
38	OrderQty	Original Volume
39	OrdStatus	'8' (Rejected)
150	ExecType	'8' (Rejected)
151	LeavesQty	Leaves Quantity
103	OrdRejReason	BROKER_OR_EXCHANGE_OPTION = 0 UNKNOWN_SYMBOL = 1 EXCHANGE_OR_TRADING_SESSION_CLOSED = 2 ORDER_EXCEEDS_LIMIT = 3 TOO_LATE_TO_ENTER = 4 UNKNOWN_ORDER = 5 DUPLICATE_ORDER = 6 DUPLICATE_VERBAL_ORDER = 7 STALE_ORDER = 8 UNSUPPORTED_ORDER_CHARACTERISTIC = 9 **Linkage**: see tag 5209 for specific linkage reject codes.
58	Text	May be used to designate a reason for message rejection.

(continued on following page)

OLA Linkage Custom Fields		
Tag	**Field Name**	**Comments**
	Standard Trailer	

Order Cancel Reject Message Used to reject a Cancel Request

If the Cancel Request contains a *CancelRequestQty* that is too late to cancel—the Cancel Report from ORS reports the too late to cancel quantity. A cancel reject is issued with the *CxlRejReason* of "0" (Too Late to Cancel).

A firm must be able to handle Order Cancel Reject messages to become a certified CBOEdirect user.

Table 18 Cancel Reject Message—Reject of an Order Cancel Request by CBOEdirect

Tag	Field Name	Comments
	Standard Header	*MsgType[35]* = 9
11	ClOrdID	Unique order id assigned by institution to the cancel request or to the replacement order
41	OrigClOrdID	ClOrdID which could not be canceled/replaced. ClOrdID of the previous order (NOT the initial order of the day) when canceling or replacing an order.
39	OrdStatus	OrdStatus value after this cancel reject is applied
109	ClientID	Correspondent Firm (if used)
76	ExecBroker	Will be the same value on the order that the firm is trying to cancel.
102	CxlRejReason	0 = Too Late to Cancel 1 = Unknown order 2 = Broker option 5 = Cancel requests are currently not being accepted. Please retry or contact CBOE Helpdesk
Custom Defined Fields		
9311	*TLCQty*	Too late to cancel quantity.
	Standard Trailer	

Execution Report—Nothing Done Report

An Execution Report will be sent with the OrdStatus and ExecType set to Done For Day to indicate that the order has been canceled with nothing done for any remaining open quantity on the order.
The CxlQty(84) is set to any remaining open quantity on the order when it was canceled at the end of the trading session.

A firm must be able to handle Nothing Done Report messages to become a certified CBOEdirect user.

Table 19 Execution Report—Nothing Done Report from CBOEdirect

In addition to the ***Common Execution Report fields*** defined above, the following applies for this type of Execution Report		
Tag	**Field Name**	**Comments**
38	OrderQty	Original Volume
39	OrdStatus	"3" (Done for Day)
84	CxlQty	Quantity canceled due to done for day.
150	ExecType	"3" (Done for Day)
151	LeavesQty	0
	Standard Trailer	

Drop Copies

FIX Firms that login as a Firm Display user will receive drop copies (order/quote fills, busted order/quote fills) for its clearing firm and exchange. This functionality is available on exchange basis. For example, clearing firms that login for CBSX drop copies will not get drop copies from other exchanges. Below is the setup for FIX Firm Display users.

1. The Clearing Firm needs to request for a CBOE SBT user id and a FIX engine setup.
2. CBOE will setup the user with Firm Display role and will allocate them on a specific FIX engine.
3. The Clearing Firm will logon using the FIX logon message *Logon Message MsgType[35] = A.* An example is shown below. Refer to FIX Vol 3A: FIX4.2 Session Layer for login details.

   [8=FIX.4.2^A9=0086^A35=A^A50=X601:X601^A57=PROD^A34=1^A49=TEST101^A56=PFIX301^A52=20071015-15:49:03^A98=0^A108=90^A10=215^A]

4. Immediately after logon the CBOE FIX Adapter will automatically subscribe the user for order and quote statuses.
5. The Firm Display user will start getting the fills/bust and bust re-instate execution reports. An example of a fill report is shown below.

   [8=FIX.4.2^A9=0309^A35=8^**A50=X626^A97=Y**^A34=2^A49=PFIX301^A56=TEST101^A52=20071015-15:49:19^A1=X626^A6=5^A14=200^A17=1187684:0.65016:1201694621.0^A20=0^A150=1^A22=8^A31=5^A32=200^A151=200^A442=1^A382=1^A375=CBOEW:000^A337=XXW^A437=200^A438=20071015-10:34:24^A37=1187684^A38=400^A39=1^A44=5^A201=0^A207=W^A48=331941671^A167=CS^A54=2^A202=0^A55=ACIW^A6699=1^A9730=A^A10=149^A]

6. The User id of the user who traded is filled on tag *SenderSubID [tag50]* on the execution report. From the above example the Firm Display user id is X601 and the regular user id is X626 that is given on *SenderSubID [tag50]*.
7. If the Firm Display is not logged in during an occurrence of fill/bust or bust re-instate event, the missing events will be delivered after the next login of the firm user. Those reports will be delivered as Poss Resends with *PossResend [tag97]* set to Y as shown in the above example. Missed events up to one day old will be delivered to the user.

Execution Report – Trade Busts

CBOEdirect supports the ability for the CBOE help desk to bust a trade under certain circumstances. The initiation of a trade bust is made via contact to the CBOE help desk over telephone or email / text messaging. The ability to request the bust of a trade is not supported by CBOE application programming interfaces (CMi or FIX 4.2).

Because trade busts are initiated out of band, trade bust reports are sent to the counterparties without notice through the API. Within FIX, trade busts are reported using an unsolicited Execution Report. An Execution Report indicating an occurrence of trade bust is identified by the field: ExecTransType[20]=1 (Cancel). Only trade busts are reported using the ExecTransType=CANCEL.

Each Execution Report that reports a fill (or partial fill) is uniquely identified using an Execution ID in the ExecID[17] field. In the Execution Report of a trade bust, FIX provides a field, ExecRefID[19], which is used to refer to the Execution ID of the previous fill Execution Report that is being busted (canceled / deleted). This provides you with a programmatic or manual way to identify the fill report that was busted.

Other relevant fields on a Trade Bust Execution Report

ExecType[150] = CANCEL because a trade bust not only reduces the CumQty (total filled quantity), it cancels part of the original order quantity (because the cancelled fill quantity is not added back to the leaves quantity).

OrdStatus[39] is set to the state of the order after the trade bust has been applied using the following logic:

```
if(CumQty == 0) {
      if(lvsQty > 0) {
            OrdStatus = New
      {
      else {
            OrdStatus = Cancelled
      }
```

```
}
if(CumQty > 0) {
      if(lvsQty == 0) {
            OrdStatus = Cancelled
      }
      else {
            OrdStatus = PartiallyFilled
      }
}
```

CBOE has added an additional custom field to help make the action of the trade bust more explicit. The **LastBustShares[9368]** custom field is used to report the fill quantity to be busted.

The **Text[58]** field is also set to the string "Trade Bust Report" as a visual reference. Note: The human readable explanation is being provided to help identify the trade report. The Text[58] field should not be accessed or tested programmatically. CBOE does not consider these text descriptions of errors as part of the API. These text values are subject to change without notice.

Developers are recommended to use the ExecTransType[20]=1 (Cancel) to identify the occurrence of a trade bust.

A firm must be able to handle Trade Bust messages to become a certified CBOEdirect user.

Trade bust requests for trading floor trades must be transmitted to booth floor managers, and these requests will be conducted in the trading pit. There may or may not be an electronic response to the trade bust request. Please contact your floor manager for more details.

Table 20 Execution Report—Bust Report from CBOEdirect

In addition to the ***Common Execution Report fields*** defined above, the following applies for this type of Execution Report		
Tag	**Field Name**	**Comments**
19	ExecRefID	Used to refer to the Execution ID of the previous fill Execution Report that is being busted (canceled / deleted)
20	ExecTransType	1 (Cancel) to identify the occurrence of a trade bust
38	OrderQty	Original Volume
39	OrdStatus	Set to the state of the order after the trade bust has been applied
58	Text	"Trade Bust Report"
84	CxlQty	Quantity Canceled on the order.
150	ExecType	CANCEL
151	LeavesQty	Leaves Quantity
9368	LastBustShares	CBOE custom field that is used to report the fill quantity to be busted.
	Standard Trailer	

Execution Report – Trade Bust with a reinstated Quantity

Under certain circumstances, the quantity of the fill that was busted will be reinstated to the working order. The reinstatement of the busted trade quantity is always a separate and subsequent transaction to the actual trade bust itself. However, a user will never receive an order reinstatement without a corresponding trade bust. This means that there will be two unsolicited Execution Reports that will occur in the event of a trade bust that results in a quantity reinstatement. The first message is the original Execution Report for the trade bust, followed by a new and separate Execution Report that reports the reinstatement of a busted quantity to a working order.

A reinstatement Execution Report is identified with the ExecTransType[20] = 0 (New) and **ExecType(150)= D (Restated)**. The Execution Reporting the reinstatement will not reference the original Execution Report that reported the trade nor will it reference the Execution Report that report the trade bust. FIX considers this a new and separate transaction against the order.

Other relevent fields on an Execution Report reporting a Reinstatement of a trade bust quantity

ExecRestatementReason[378] = 4 (Broker Option) which indicates that it was the broker/markets option to reinstate the busted trade quantity to the order.

OrderStatus[39] is set to the state of the order after the reinstatement has been applied to the order using the following logic:

```
If(CumQty == 0) {
            // LvsQty will never be zero on a reinstate message so OrdStatus has to be
NEW for zero CumQty.
            OrdStatus = New
      }
      if(CumQty > 0) {
            // LvsQty will never be zero on a reinstate message so OrdStat has to be
PtFill for any CumQty.
            OrdStatus = PartiallyFilled
      }
```

LastBustShares[9368] is set to the quantity that will be reinstated to the order.

The **Text[58]** field is set to the string "Reinstatement of Busted Trade Quantity". As with any Execution Report the text field is being provided as a human readable value to assist personnel in resolving issues. CBOE strongly discourages programmatic access to this field.

A firm must be able to handle Trade Bust Reinstate messages to become a certified CBOEdirect user.

Trade bust requests for trading floor trades must be transmitted to booth floor managers, and these requests will be conducted in the trading pit. There may or may not be an electronic response to the trade bust request. Please contact your floor manager for more details.

Table 21 Execution Report—Cancel Report for a Trade Bust Reinstate from CBOEdirect

In addition to the ***Common Execution Report fields*** defined above, the following applies for this type of Execution Report		
Tag	**Field Name**	**Comments**
20	ExecTransType	0 (New)
38	OrderQty	Original Volume
39	OrdStatus	Set to the state of the order after the reinstatement has been applied to the order.
58	Text	"Reinstatement of Busted Trade Quantity"
150	ExecType	D (Restated).
151	LeavesQty	Leaves Quantity
378	ExecRestatementReason	4 (Broker Option)
9368	LastBustShares	CBOE custom field that is set to the quantity that will be reinstated to the order.
	Standard Trailer	

Quote Request (RFQ)

CBOE permits market participants to submit quote requests or requests for quotes (RFQ’s) for any products in the ONE_MAIN and CFE_MAIN session. RFQs are not supported in W_MAIN, or W_STOCK at this time. Only users responsible for making markets (market makers, LMMs, DPMs) are allowed to receive and respond to these RFQs. Request for Quotes (RFQ's) will not be available via the CBOE FIX 4.2 market data server. RFQ's will only be available via connections used for quoting or order flow. Applications that wish to submit Quote Requests to CBOE should review the Quote Request section in the FIX-03D document.

Questions Regarding Order Routing

Can orders be submitted to open outcry markets, if so how?

Orders are submitted to the open outcry market by specifying "W_MAIN" in the *TradingSessionID[336]* field on a New Order – Single (MsgType=D) message. Note: Be sure to provide the *NoTradingSessions[386]* field and have it set to 1.

```
386=1^336=W_MAIN
```

How is a market order submitted to the floor?

Set the OrderType[40] to 0 (Market) and set the *TradingSessionID[336]*=W_MAIN.

```
40=0^386=1^336=W_MAIN
```

Can market orders be submitted to OneChicago futures trading session (ONE_MAIN)?

Yes, market orders are supported for security futures traded using the CBOEdirect trading system.

How is a Principal (P) Linkage order submitted?

Eligible CBOE market makers may enter Principal (P) orders for their own account through the FIX 4.2 (or CMi) interface to trade at an away NBBO exchange as specified in the Linkage Plan. These orders are routed to CBOE and its FIX or CMi interface in order to reach the Option Linkage Authority (OLA) hub and the NBBO market away.

Special linkage designations include:

- Market Maker Account is entered in Account (1)
- Market Maker acronym is entered in OrderOrigin (9465)
- Destination (NBBO) exchange is entered in ExDestination(100)
- Origin Code designation for Principal order is entered in Rule80A (47) = P
- Principal Order specifics: OrdType(40) = 2; and Price(44) = NBBO price at the away exchange; TimeInForce(59) = 3
- Special OLA custom fields may be returned on the linkage fill or cancel report, including reason codes for a reject or cancel in OLAOrdRejReason (5209), and AutoexSize (5201).
- The exchange identifier for the execution report (where the trade occurred) is designated by LastMkt (30).

How is the current order routing to away markets affected?

- Direct access to each exchange is still available via current order routing front-end systems. These current access paths remain unchanged, however, these links will not be granted order routing capabilities according to the Linkage Plan.
- **Principal (P) Linkage order routing is available to CBOE market makers via their firm's connections to CBOE. CBOE firms can only access the OLA hub through their interface with CBOE. Firms do not have direct access to the OLA hub. A market maker must access linkage through his "home" exchange.**
- The CBOE interface will process the P linkage order through the OLA hub and on to the NBBO market. Fill reports or rejected messages will be returned via the same path of OLA to CBOE to market maker firm to market maker terminal.
- The accepted market maker interfaces to CBOE for full linkage are FIX 4.2 and the CBOE Market Interface (CMi).
- Linkage PA order handling and order routing under the Linkage Plan is only supported through the exchanges (and exchange systems) and the exchange links to the central Option Linkage Authority (OLA) hub.
- The old Interim Linkage Pilot expired at the end of January 2003. These links are no longer active.

How is a limit order submitted?

You must specify an *OrderType[40]*=1(Limit) and specify a limit price in the *Price[44]* field.
The following is a portion of a limit order destined for the floor

```
40=1^44=5.00^386=1^336=W_MAIN
```

The following is a portion of a limit order destined to the OneChicago futures market

```
40=1^44=5.00^386=1^336=ONE_MAIN
```

How is an Immediate or Cancel (IOC) order submitted?

By setting the *TimeInForce[59]*=3 (Immediate or cancel). All CBOEdirect accessible markets support IOC orders.

```
8=FIX.4.2^49={SENDER_COMP_ID}^56={TARGET_COMP_ID}^35=D^11=AAA0001-
20020214^76=0001^21=3^55=IBM^167=OPT^200=200210^205=21^201=1^202=100^
207=w^54=B^38=25^40=2^44=1.20^59=3^60=20020227-12:00:00^
77=C^47=C^386=1^336=W_MAIN^
```

How is a Fill or Kill (FOK) order submitted?

By setting the *TimeInForce[59]*=4 (Fill or Kill). All CBOEdirect accessible markets support FOK orders.

```
8=FIX.4.2^49={SENDER_COMP_ID}^56={TARGET_COMP_ID}^35=D^11=AAA0001-
20020214^76=0001^21=3^55=IBM^167=OPT^200=200210^205=21^201=1^202=100^
207=w^54=B^38=25^40=2^44=1.20^59=4^60=20020227-12:00:00^
77=C^47=C^386=1^336=W_MAIN^
```

How is a With Discretion order submitted?

A with discretion order is only valid for open outcry markets. The use of the DiscretionInst[388] field and the DiscretionOffset[389] field is required. The DiscretionInst[388]=0 and the DiscretionOffset[389] < 1.00.

```
8=FIX.4.2^49={SENDER_COMP_ID}^56={TARGET_COMP_ID}^35=D^11=AAA0001-
20020214^76=0001^18=G^21=3^55=IBM^167=OPT^200=200210^205=21^201=1^202=100^
207=w^54=B^38=25^40=2^44=1.20^60=20020227-12:00:00^
77=C^47=C^386=1^336=W_MAIN^388=0^389=1.0
```

What markets support stop orders and how are stop orders submitted?

The OneChicago and open outcry markets (ONE_MAIN, W_MAIN) support stop orders. The *OrderType[40]*=3 (Stop), the StopPx[99] must be specified. The Price[44] field should not be specified.

```
8=FIX.4.2^49={SENDER_COMP_ID}^56={TARGET_COMP_ID}^35=D^11=AAA0001-
20020214^76=0001^18=G^21=3^55=IBM^167=OPT^200=200210^205=21^201=1^202=100^
207=w^54=B^38=25^40=3^99=1.20^60=20020227-12:00:00^
77=C^47=C^386=1^336=W_MAIN^
```

What markets support stop limit orders and how are stop limit orders submitted?

At this time only the OneChicago futures market supports stop limit orders. The OrderType[40]=4 (Stop Limit), a Price[44] must be specified and the StopPx[99] must be specified.

```
8=FIX.4.2^49={SENDER_COMP_ID}^56={TARGET_COMP_ID}^35=D^11=AAA0001-
20020214^76=0001^18=G^21=3^55=IBM^167=OPT^200=200210^205=21^201=1^202=100^
207=w^54=B^38=25^40=4^44=1.20^99=1.05^60=20020227-12:00:00^
77=C^47=C^386=1^336=ONE_MAIN^
```

How are Good Til Cancel (GTC) orders submitted and what markets are supported?

GTC orders may be submitted to the CBOE trading floor and OneChicago.

```
8=FIX.4.2^49={SENDER_COMP_ID}^56={TARGET_COMP_ID}^35=D^11=AAA0001-
20020214^76=0001^18=G^21=3^55=IBM^167=OPT^200=200210^205=21^201=1^202=100^
207=w^54=B^38=25^40=2^44=1.20^60=20020227-12:00:00^
77=C^47=C^386=1^336=W_MAIN^
```

What markets support All or None (AON) orders and how are they submitted?

All or none orders are supported by all CBOE and OneChicago markets. The All or None order is submitted by setting the *ExecInst[18]*=G (AON)

```
8=FIX.4.2^49={SENDER_COMP_ID}^56={TARGET_COMP_ID}^35=D^11=AAA0001-
20020214^76=0001^18=G^21=3^55=IBM^167=OPT^200=200210^205=21^201=1^202=100^
207=w^54=B^38=25^40=2^44=1.20^60=20020227-12:00:00^
77=C^47=C^386=1^336=W_MAIN^
```

Do I have to use the CBOEdirect Product Key to identify a product or can standard option identification be used instead?

For options and futures products you have the choice of using either the standard symbols, such as IBM, MSFT, T for options or IBM1C, MSFT2C for futures. You also have the choice of using the CBOEdirect ProductKey in the FIX SecurityID[48] field.. The CBOEdirect ProductKey (FIX SecurityID[48]) is obtained using the the Security Definition Request message [as described in **Volume 3B: Application Layer: Fundamentals and Field (Tag) Dictionary (FIC-03B)**].
For strategy products, you must used the CBOEdirect Productkey in the SecurityID[48] field.

How are nothing dones reported for day orders that did not get filled during a trading session?

CBOEdirect sends Execution Report Message (MsgType=8) with an *OrdStatus[39]* and *ExecType[150*] set to 3 (Done for Day) at the close of the session.

How are firms identified on orders?

By specifying the CBOE Firm number in the ExecBroker[76] field. If the order will clear at the OCC with a different firm number using a CMTA firm, the CMTA clearing firm number is specified in the ClearingFirm[439] field.

What if a firm has their own proprietary order id that they want to use instead of CBOE's order ID conventions specified for ClOrdID[11]?

Firms can use the CBOE supplied custom field *SecondaryClOrdID[9321]* for their own proprietary order identifier. The ClOrdID[11] must follow CBOE's formatting and content rules without exception.

FIX 4.2 Order State Matrix Compatibility

The CBOE FIX 4.2 Service supports only a subset of the order state matrices defined in Appendix D.

Table 22 Support for FIX 4.2 Order State Change Matrices

Ref	Group	Description	CBOE Support
D1	Vanilla	Filled order	Compliant
D2	Vanilla	Part-filled day order, done for day	Compliant
D3	Cancel	Cancel request issued for a zero-filled order	Compliant
D4	Cancel	Cancel request issued for a part-filled order – executions occur whilst cancel request is active	Compliant
D5	Cancel	Cancel request issued for an order that becomes filled before cancel request can be accepted	Compliant
D6	Replace to increase qty	Zero-filled order, cancel/replace request issued to increase order qty	Not Supported
D7	Replace to increase qty	Part-filled order, followed by cancel/replace request to increase order qty, execution occurs whilst order is pending replace	Not Supported
D8	Replace to increase qty	Filled-order followed by cancel/replace request to increase order quantity	Not Supported
D9	Replace not for qty change	Cancel/replace request (not for quantity change) is rejected as a fill has occurred	Compliant
D10	Replace to decrease qty	Cancel/replace request sent whilst execution is being reported – the requested order qty exceeds the cum qty . Order is replaced then filled	Compliant
D11	Replace to decrease qty	Cancel/replace request sent whilst execution is being reported – the requested order qty equals the cum qty – order qty is amended to cum qty	Compliant
D12	Replace to decrease qty	Cancel/replace request sent whilst execution is being reported – the requested order qty is below cum qty – order qty is amended to cum qty	Compliant
D13	Replace – sequence	One cancel/replace request is issued which is accepted – another one is issued which is also accepted	Compliant
D14	Replace – sequence	One cancel/replace request is issued which is rejected before order becomes pending replace – then another one is issued which is accepted	Compliant
D15	Replace - sequence	One cancel/replace request is issued which is rejected after it is in pending replace – then another one is issued which is accepted	Not Supported
D16	Replace - chaining	One cancel/replace request is issued followed immediately by another – broker processes sequentially	Custom Inbound Compliant Outbound
D17	Replace - chaining	One cancel/replace request is issued followed immediately by another – broker rejects the second as order is pending replace	Not Supported
D18	Unsolicited reports	Telephoned order	Not Supported
D19	Unsolicited reports	Unsolicited cancellation of a part-filled order	Not Supported
D20	Unsolicited reports	Unsolicited replacement of a part-filled order	Not Supported
D21	Unsolicited reports	Unsolicited reduction of order quantity by sell side	Not Supported

Ref	Group	Description	CBOE Support
D22	Order reject	Order rejected due to duplicate ClOrdID	Compliant
D23	Order reject	Order rejected because the order has already been verbally submitted	Not Supported
D24	Status	Order status request rejected for unknown order	Compliant
D25	Status	Status request followed by "Nothing done".	Compliant
D26	Status	Order sent, immediately followed by a status request. Subsequent status requests sent	Compliant
D27	GT	GTC order partially filled, restated (renewed) and partially filled the following day	Not Supported
D28	GT	GTC order with partial fill, a 2:1 stock split then a partial fill and fill the following day	Not Supported
D29	GT	GTC order partially filled, restated(renewed) and canceled the following day	Not Supported
D30	GT	GTC order partially filled, restated(renewed) followed by replace request to increase quantity	Not Supported
D31	Resend	Poss resend	•
D32	TIF	Fill or kill order that cannot be filled	Compliant
D33	TIF	Immediate or Cancel order that cannot be immediately hit	Compliant
D34	Execution correct/cancel	Filled order, followed by correction and cancellation of executions	PARTIALLY SUPPORTED
D35	Execution correct/cancel	A cancel of a partially filled order followed by an execution cancel(bust) and new execution.	•
D36	Execution correct/cancel	GTC order partially filled, restated (renewed) and partially filled the following day, with corrections of quantity on both executions.	PARTIALLY SUPPORTED
D37	Stopped/Guarantee	A stopped (execution price guarantee) report followed by execution.	•

CBOE FIX 4.2 Cancel/Replace State Matrices that differ from the FIX 4.2 Standard

The following state transition matrices DO NOT comply with the order state transitions represented in Appendix D of the FIX.4.2 specification. In all other cases, CBOE either complies with the order state transition in Appendix D or does not support the specified functionality.

In the matrices below:

- Items in ~~strikethrough text~~ are states or values specified in Appendix D of the FIX 4.2 specification that do not occur in CBOE FIX 4.2.
- Items in **bold text** differ in the CBOE FIX.4.2 implementation from those represented in Appendix D.

D10 – Cancel/Replace Request sent whilst execution is being reported – the requested order qty exceeds the cum qty. Order is replaced then filled.

Time	Message Received	Message Sent	Exec Type [150]	Ord Status [39]	Exec Trans Type [20]	Order Qty [38]	Cum Qty [14]	Leaves Qty [151]	Last Shares [32]	Cxl Qty [84]	Comment
1	New Order (X)					10000					
2		*Execution (X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*		*If order is rejected*
2		Execution (X)	New	New	New	10000	0	10000	0		
3		Execution (X)	Partial Fill	Partially Filled	New	10000	1000	9000	1000		Execution for 1000
4	Replace Request (Y, X)					8000					Request a decrease in order quantity to 8000 (leaving 7000 open)
4		Execution (X)	Partial Fill	Partially Filled	New	10000	1500	8500	500		Execution for 500 sent. Replace request and this execution report pass each other on the connection.
~~*5*~~		~~*Cancel Reject (Y, X)*~~		~~*Partially Filled*~~		~~*10000*~~					~~*If request is rejected by salesperson*~~
5		Execution (Y, X)	**Pending Cancel**	**Pending Cancel**	New	10000	1500	8500	0		**'Pending Cancel' order status takes precedence over 'Partially Filled' order status. When a Replace request is submitted for a non-price modification, CBOE cancels the original order rather than modifying it. THIS MAY CAUSE THE REPLACE ORDER TO LOSE PRICE/TIME PRIORITY.**
~~6~~		~~Execution (X)~~	~~Partial Fill~~	~~Pending Replace~~	~~New~~	~~10000~~	~~1600~~	~~8400~~	~~100~~		~~Execution for 100 occurs before cancel/replace request is accepted.~~
7		Cancel Reject (Y, X)		Partially Filled		10000					If request is rejected by exchange.
7		**Execution (X)**	**Cancel**	Partially Filled	New	**10000**	**1500**	**6500**	0	**2000**	**Execution of a valid Replace request is instantaneous. 'Partially Filled' order status takes precedence over 'Canceled' order status. Replace is accepted as requested LeavesQty exceeds CumQty. Original order quantity does not change and CxlQty reports the quantity canceled.**

8		**Execution (X)**	**Partial Fill**	**Partially Filled**	**New**	**10000**	**1600**	**6400**	**100**	**2000**	**Execution for 100 occurs after Replace Request is accepted.**
9		**Execution (X)**	**Fill**	Filled	New	**10000**	8000	0	**6400**	**2000**	**Execution for 6400.**

D11 – Cancel/Replace Request sent whilst execution is being reported – the requested order qty equals the cum qty – order qty is amended to cum qty.

Time	Message Received	Message Sent	Exec Type [150]	Ord Status [39]	Exec Trans Type [20]	Order Qty [38]	Cum Qty [14]	Leaves Qty [151]	Last Shares [32]	Cxl Qty [84]	Comment
1	New Order (X)					10000					
2		*Execution (X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*		*If order is rejected*
2		Execution (X)	New	New	New	10000	0	10000	0		
3	Replace Request (Y, X)					7000					Client wishes to amend order qty to 7000 shares.
3		Execution (X)	Partial Fill	Partially Filled	New	10000	7000	3000	7000		Execution for 7000 – Replace request and this execution report pass each other on the connection.
4		Execution (Y, X)	**Pending Cancel**	**Pending Cancel**	New	10000	7000	3000	0		**'Pending Cancel' order status takes precedence over 'Partially Filled' order status. When a Replace request is submitted for a non-price modification, CBOE cancels the original order rather than modifying it. THIS MAY CAUSE THE REPLACE ORDER TO LOSE PRICE/TIME PRIORITY.**
5		**Execution (X)**	**Cancel**	**Canceled**	New	**10000**	7000	0	0	**3000**	**The replace request is interpereted as requiring the balance of the order to be canceled. 'Canceled' order status takes precedence over 'Partially Filled' order status.**

D12 – Cancel/Replace Request sent whilst execution is being reported – the requested order qty is below cum qty – order qty is amended to cum qty.

Time	Message Received	Message Sent	Exec Type [150]	Ord Status [39]	Exec Trans Type [20]	Order Qty [38]	Cum Qty [14]	Leaves Qty [151]	Last Shares [32]	Cxl Qty [84]	Comment
1	New Order (X)					10000					
2		*Execution (X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*		*If order is rejected*
2		Execution (X)	New	New	New	10000	0	10000	0		
3	Replace Request (Y, X)					7000					Client wishes to amend order qty to 7000 shares.
3		Execution (X)	Partial Fill	Partially Filled	New	10000	8000	2000	8000		Execution for 8000 – Replace request and this execution report pass each other on the connection.
4		**Execution (Y, X)**	**Pending Cancel**	**Pending Cancel**	**New**	**10000**	**8000**	**2000**	**0**		**'Pending Cancel' order status takes precedence over 'Partially Filled' order status. When a Replace request is submitted for a non-price modification, CBOE cancels the original order rather than modifying it. THIS MAY CAUSE THE REPLACE ORDER TO LOSE PRICE/TIME PRIORITY.**
5		**Execution (X)**	**Cancel**	**Canceled**	New	**10000**	8000	0	0	**2000**	**The replace request is interpereted as requiring the balance of the order to be canceled. 'Canceled' order status takes precedence over 'Partially Filled' order status.**

D13 – One Cancel/Replace Request is issued which is accepted – another one is issued which is also accepted

Time	Message Received	Message Sent	Exec Type [150]	Ord Status [39]	Exec Trans Type [20]	Order Qty [38]	Cum Qty [14]	Leaves Qty [151]	Last Shares [32]	Cxl Qty [84]	Comment
1	New Order (X)					10000					
2		*Execution (X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*		*If order is rejected*
2		Execution (X)	New	New	New	10000	0	10000	0		
3		Execution (X)	Partial Fill	Partially Filled	New	10000	1000	9000	1000		Execution for 1000
4	Replace Request (Y, X)					8000					Request a decrease in order quantity to 8000, leaving 7000 open.
5		Execution (Y, X)	**Pending Cancel**	**Pending Cancel**	New	10000	1000	9000	0		**'Pending Cancel' order status takes precedence over 'Partially Filled' order status. When a Replace request is submitted for a non-price modification, CBOE cancels the original order rather than modifying it. THIS MAY CAUSE THE REPLACE ORDER TO LOSE PRICE/TIME PRIORITY.**
6		**Execution (X)**	**Cancel**	Partially Filled	New	**10000**	1000	7000	0	**2000**	**Execution of a valid Replace request is instantaneous. 'Partially Filled' order status takes precedence over 'Canceled' order status. Replace is accepted as requested LeavesQty exceeds CumQty. Original order quantity does not change and CxlQty reports the quantity canceled.**
7		**Execution (X)**	Partial Fill	Partially Filled	New	10000	1500	6500	500	**2000**	Execution for 500.
8		**Execution (X)**	Partial Fill	Partially Filled	New	10000	3500	4500	2000	**2000**	Execution for 2000.
9	**Replace Request (Z, X)**					6000					Request a decrease in order quantity to 6000, leaving 2500 open.
10		**Execution (Z, X)**	**Pending Cancel**	**Pending Cancel**	New	**10000**	3500	4500	0	**2000**	
11		**Execution (X)**	**Cancel**	Partially Filled	New	**10000**	3500	2500	0	**4000**	
12		**Execution (X)**	Fill	Filled	New	**10000**	6000	0	2500	**4000**	Execution for 2500.

D14 – One Cancel/Replace Request is issued which is rejected before order becomes pending replace – then another one is issued which is accepted

Time	Message Received	Message Sent	Exec Type [150]	Ord Status [39]	Exec Trans Type [20]	Order Qty [38]	Cum Qty [14]	Leaves Qty [151]	Last Shares [32]	Cxl Qty [84]	Comment
1	New Order (X)					10000					
2		*Execution (X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*		*If order is rejected*
2		Execution (X)	New	New	New	10000	0	10000	0		
3		Execution (X)	Partial Fill	Partially Filled	New	10000	1000	9000	1000		Execution for 1000
4	Replace Request (Y, X)					8000					Request a decrease in order quantity to 8000, leaving 7000 open.
5		Cancel Reject (Y, X)		Partially Filled		10000					Request is rejected
6		Execution (X)	Partial Fill	Partially Filled	New	10000	1500	8500	500		Execution for 500.
7		Execution (X)	Partial Fill	Partially Filled	New	10000	3500	6500	2000		Execution for 2000.
8	Replace Request (Z, X)					6000					Request a decrease in order quantity to 6000, leaving 2500 open. Note that OrigClOrdID = X
9		Execution (Z, X)	**Pending Cancel**	**Pending Cancel**	New	10000	3500	6500	0		Note that OrigClOrdID = X
10		**Execution (X)**	**Cancel**	Partially Filled	New	**10000**	3500	2500	0	**4000**	
12		**Execution (X)**	Partial Fill	Partially Filled	New	**10000**	5000	1000	1500	**4000**	Execution for 1500

D16 – One Cancel/Replace Request is issued followed immediately by another – broker processes sequentially

Time	Message Received	Message Sent	Exec Type [150]	Ord Status [39]	Exec Trans Type [20]	Order Qty [38]	Cum Qty [14]	Leaves Qty [151]	Last Shares [32]	Cxl Qty [84]	Comment
1	New Order (X)					10000					
2		Execution (X)	New	New	New	10000	0	10000	0		
3		Execution (X)	Partial Fill	Partially Filled	New	10000	1000	9000	1000		Execution for 1000
4	Replace Request (Y, X)					8000					Request a decrease in order quantity to 8000, leaving 7000 open.
5	Replace Request (Z, X)					7000					Request a decrease in order quantity to 7000, leaving 6000 open.
6		Execution (Y, X)	**Pending Cancel**	**Pending Cancel**	New	10000	1000	9000	0		Broker processes Replace (Y, X) first
7		**Execution (X)**	**Cancel**	Partially Filled	New	**10000**	1000	7000	0	**2000**	Broker processes Replace (Y, X) first
8		Execution (Z, X)	**Pending Cancel**	**Pending Cancel**	New	**10000**	1000	7000	0	**2000**	Broker the processes Replace (Z, X)
9		**Execution (X)**	**Cancel**	Partially Filled	New	**10000**	1000	6000	0	**3000**	Broker the processes Replace (Z, X)
10		**Execution (X)**	Fill	Filled	New	**10000**	7000	0	6000	**3000**	Execution for 6000