



## **CBOE Application Programming Interface**

### **CBOE FIX 4.2 Version 4.2.3 - Release Notes**

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

## ***CBOE PROPRIETARY INFORMATION***

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## **Front Matter**

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

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

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## Overview

The material presented in this document highlight upcoming changes for the new release of the FIX 4.2 API, Version 4.2.3. Documentation changes are detailed in the sections below. Your feedback or questions regarding this document should be sent to [API@cboe.com](mailto:API@cboe.com)

## FIX 4.2 Highlights

### Cross-Product Spread Orders

Pending SEC approval, 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.

### Example

#### 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=200710_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=
```

## CONFIDENTIAL

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\_

## Drop Copies functionality

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 as per CBOE FIX spec. *Logon Message MsgType[35] = A*. An example is shown below.  

```
[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. For complete details of execution reports please refer to Vol 3C Order Routing Document of the CBOE FIX Specification.  

```
[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.

## Document Changes

### FIX-01

- No changes

### FIX-03a

- Added a new section based on this release: “Important Considerations for Cross-Product Strategy Orders”
- Changed the default number of contras in a compressed fill report to 30 instead of 50.

### FIX-03b (Including Tag Dictionary)

- Removed the CBSX reference in the UDF, TradeLiquidityIndicator [Tag 9730] descriptions for Trade Type Billing Indicators
- Updated the description for UDF *MultiLegStockClearingFirm*[9372]

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

- Updated the description for UDF *StockFirmName*[9380]

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.

### FIX-03c

- Added a new section for “Drop Copies” based on this release
- Updated the “Contingency Mapping Table” for Intermarket Sweep Orders (ISO) to only accept “0” or “1” TimeInForce[Tag 59] Values
- Modified TimeInForce[Tag 59] to read the following for Intermarket Sweep Orders (ISO)

Intermarket Sweep Order (ISO): An ISO is essentially treated in an IOC fashion, time in force values '0' or '1' are accepted. Refer to Contingency Mapping Table.

- Updated SecurityExchange[Tag 207] to include the value for Midwest Stock Exchange

W = CBOE  
50 = OneChicago  
MW = Midwest Stock Exchange

- Removed the CBSX reference in the UDF, TradeLiquidityIndicator [Tag 9730] descriptions for trade type billing indicators
- Updated the values for OrdStatus[Tag 39]



**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

**Linkage:**

0 = New  
 1 = Partially filled  
 2 = Filled  
 4 = Canceled  
 8 = Rejected

**FIX-03d**

- Updated the “Market Data Types” table for Book Depth to read: “Snapshot query or subscription (*Hybrid: 1 Snapshot once every 1second & no subscriptions*)” instead of reading “Snapshot query or subscription (*Hybrid: 1 Snapshot once every 10 minutes & no subscriptions*)”
- Added an example for AuctionType[Tag9383], STOCK\_NBBO\_FLASH. See below

STOCK\_NBBO\_FLASH example**Subscribe for NBBO flash**

[8=FIX.4.2^A9=0094^A35=a^A34=17^A49=TEST301^A56=DFIX301^A52=20071005-15:18:47^A55=C^A167=CS^A336=W\_STOCK^A9463=500^A9383=6^A10=210^A]

**Put in a quote**

[8=FIX.4.2^A9=0156^A35=S^A34=18^A49=TEST301^A56=DFIX301^A52=20071005-15:18:57^A117=RBJ0001-20071005^A336=W\_STOCK^A55=C^A167=CS^A132=49.0^A133=50.5^A134=1000^A135=1000^A60=20000302-12:00:00^A10=093^A]

[8=FIX.4.2^A9=0142^A35=S^A34=18^A49=DFIX301^A56=TEST301^A52=20071005-15:18:57^A117=RBJ0001-20071005^A336=W\_STOCK^A55=C^A167=CS^A132=49^A133=50.5^A134=1000^A135=1000^A9312=New^A10=066^A]

**Get RFQ to better the Quote**

[8=FIX.4.2^A9=0194^A35=R^A34=20^A49=DFIX301^A56=TEST301^A52=20071005-  
15:19:39^A131=0:0^A146=1^A55=C^A48=69208659^A22=8^A167=CS^A201=0^A202=0  
^A207=W^A336=W\_STOCK^A54=1^A38=100^A60=00010709-  
16:19:39^A9384=1^A9302=50.2500^A9743=1^A9383=6^A10=008^A]FIX-06

## **FIX-06**

- No changes

## **FIX-07**

- No changes

## **Test Plan Changes**

### **FIX Phase 2 Test Plans**

#### **3a, Security Definition Test Plan**

- No changes

#### **3b, Market Data Test Plan**

- No changes

#### **3c, Quote Test Plan - Hybrid-ONE-CFE (includes 3j, Hybrid Sections and 3L, CFE Supplemental Tests)**

- No changes

#### **3e, W\_MAIN-ONE-CFE Order Test Plan (includes 3k, CFE Supplemental Tests)**

- No changes

#### **3f, Clearing Firm, Duplicate Message Test Plan**

- No changes

#### **3g, Strategy Quote Test Plan - ONE-CFE**

- No changes

#### **3i, W\_MAIN-ONE-CFE Strategy Order Test Plan**

- No changes

**3m, Stock Trading On CBOEdirect (STOC) Order Test Plan**

- No changes

**3n, Stock Trading On CBOEdirect (STOC) Quote Test Plan**

- No changes

**3o, Stock Trading On CBOEdirect (STOC) DPM Administrative Test Plan**

- No changes

**Phase 4 Test Plan**

- No changes