



CBOE FIX CMTA Support

Version 1.0.5

Volume 9: CMTA FIX Application Layer: Fundamentals and Field (Tag) Dictionary

Programmer's guide to the CBOE CMTA FIX 4.4 Service Application Layer, including
Trade Capture Report Request, Allocation Instruction and Field (Tag) Dictionary

| |
|--|
| <p><i>CONFIDENTIAL</i> <i>CBOE Proprietary Information</i></p> |
|--|

10 March 2010

Front Matter

Disclaimer

Copyright © 1999-2010 by the Chicago Board Options Exchange (CBOE), as an unpublished work. The information contained in this document constitutes confidential and/or trade secret information belonging to CBOE. This document is made available to CBOE members and member firms to enable them to develop software applications using the CBOE FIX Protocol Support and its use is subject to the terms and conditions of a Software License Agreement that governs its use. This document is provided “AS IS” with all faults and without warranty of any kind, either express or implied.

Portions of this document have been taken from the Fix 4.4 Specification which is property of FIX Protocol Ltd. (<http://www.fixprotocol.org>). The FIX 4.4 Specification is property of FIX Protocol Ltd.

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 |
|---------------|---------|---|
| 10 March 2010 | 1.0.5 | Ability to allocation a base trade to another valid executing firm(s) is added to this release. User defined tag of 9999 is used for this feature. |
| 05 May 2009 | 1.0.4 | Added OCC mapping description for tag 9771 & 7084 |
| 20 Apr 2009 | 1.0.3 | Changes made in compliance with OSI format to: <ul style="list-style-type: none"> Tags being manipulated for pre-OSI format are now formatted per OSI requirement. These tags are 202, 55 and 200. Tag 200 will now have the day populated in it value. |
| 17 Nov 2008 | 1.0.2 | Changes made to: <ul style="list-style-type: none"> add new Security features information. AllocPostionEffect for TCRR and Allocation Instruction Add MMAccount and Customer ID fields to TCRR and Allocation Instruction messages. – NOTE: These fields will be available in December 2008 and are backward compatible to all previous versions. |
| 17 Apr 2008 | 1.0.1 | Changes made to Allocation Instruction Message section for Position Effect Field. |
| 07 Mar 2008 | 1.0 | New document |

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>.

Table of Contents

| | |
|--|------------|
| Front Matter | ii |
| Disclaimer | ii |
| Change Notices | ii |
| Support and Questions Regarding This Document..... | ii |
| Table of Contents..... | iii |
| Tables & Figures..... | iii |
| <i>List of Tables.....</i> | <i>iii</i> |
| About This Document | iv |
| Purpose | iv |
| Intended Audience | iv |
| Related Documents | iv |
| Usage and Conventions | v |
| FIX Application Layer | 1 |
| Overview..... | 1 |
| FIX Messages Processing Flow | 1 |
| FIX Business Flow Diagram:..... | 2 |
| Types of FIX Messages | 3 |
| <i>Trade Capture Report Request:</i> | <i>3</i> |
| <i>Trade Capture Report</i> | <i>7</i> |
| <i>Trade Capture Report Request Ack.....</i> | <i>15</i> |
| <i>Allocation Instruction.....</i> | <i>18</i> |
| <i>Allocation Instruction ACK.....</i> | <i>27</i> |
| Application Level Error Handling | 30 |
| Business Message Reject | 30 |
| Messages which can be referenced via the Business Message Reject message are: | 30 |
| Scenarios for Business Message Reject: | 31 |
| <i>Business Reject Messages Requiring Special Attention</i> | <i>31</i> |
| Transaction Level Security Overview: | 31 |
| FIX Field (Tag) Dictionary | 33 |
| Custom Defined Fields | 58 |

Tables & Figures

List of Tables

| | |
|--|----|
| Table 5 Business Message Reject..... | 30 |
| Table 29 Standard FIX Tag Dictionary | 33 |
| Table 30 Custom Defined Tags used in the CBOE FIX 4.4 Service..... | 58 |

About This Document

Purpose

This document is intended to provide information and guidance on how to connect to the CBOE FIX 4.4 service to access CBOE orders.

Intended Audience

Management requiring a deeper technical understanding of CBOE's support for FIX 4.4 in making decisions on how best to participate in CBOE markets and developers of applications that will use the FIX 4.4 service to communicate with CBOE markets.

Related Documents

| Document Number | Document Description |
|-----------------|--|
| FIX-ROADMAP | CBOE FIX Document Road Map |
| FIX-01 | CBOE FIX Volume 1: CMTA FIX Session Layer: Fundamentals and Field (Tag) Dictionary |
| FIX-02 | CBOE FIX Volume 2: CMTA FIX Application Layer: Fundamentals and Field (Tag) Dictionary |
| NET-01 | CBOE Network Connectivity Guide |
| | Financial Information Exchange Protocol (FIX) Version 4.4 (http://www.fixprotocol.org) |

Usage and Conventions

The FIX 4.4 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 4.4.

FIX Application Layer

Overview

The goal of the CMTA Allocations by the Trading Desks project is to improve efficiency for post-trade processing. The objective of this project is to provide the ability for trading desks in remote locations and member firm booths to add or amend CMTA Allocations post trade on orders previously submitted to trade match (CTMr) using FIX protocol.

- ✓ Member firms will query CMTR to amend CMTA Allocations on orders previously submitted using the following criteria.
 - executing firm
 - correspondent ID
 - branch
 - sequence number
 - orsid
 - order entry date
- ✓ When CTMA FIX Receiver receives the request it will return to the user all trades associated with the order ID, grouped by trade price and CMTA firm via FIX.
- ✓ When CTMA FIX Receiver receives the allocation information back through the FIX API, it will re-allocate the trade(s) in CTMr. If for any reason the trade(s) cannot be re-allocated according to the received instructions, CTMA FIX will reject the entire request with an Allocation Instruction Ack accompanied with a reject reason.

An addition feature was made available with release of version 1.0.5. The Order Allocation process is modified to allow brokers to optionally change the give-up/executing firm through the FIX API and give-up the order to one or multiple firms.

FIX Messages Processing Flow

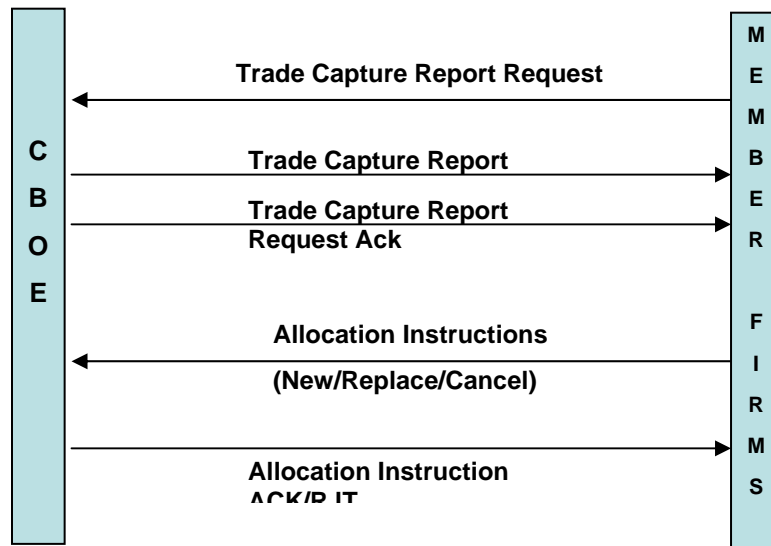
Member firms will query CBOE for CMTA Allocations (Orders) via FIX using Trade Capture Report Request message type. CBOE in turn responds back to member firms via FIX Trade Capture Reports which will constitute all the Orders grouped by price. (*Note: CBOE will generate Trade Capture Reports depending on the number of groups.*) In the case of no orders being found for the specified criteria, CBOE will send a Trade Capture Report Request ACK.

Once the member firms receive the Trade Capture Reports via FIX, They can reallocate the trade(s) and send them back to CBOE via FIX using Allocation Instruction message. (*Note: CBOE expects a separate Allocation Instructions message for each the Trade Capture Reports sent across to member firms.*)

Once CBOE receives the Allocation Instructions from member firms then the member firms will receive an Acknowledgement from CBOE via FIX Allocation Instruction ACK message with different 'Allocstatus'. Various AllocStatus which firms can expect are as follows:

Valid values:

- 0 = accepted (successfully processed)
- 1 = block level reject
- 2 = account level reject
- 3 = received (received, not yet processed)
- 4 = incomplete
- 5 = rejected by intermediary

FIX Business Flow Diagram:

Types of FIX Messages

Various FIX Inbound and Outbound Messages are explained below

Trade Capture Report Request:

This message is used by member firms to query CBOE for the CMTA Allocations. This message consists of three parts like every other standard FIX messages (Header, Body & Trailer).

Header Fields and Description:

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|-----|------------------|---------|--|----------------|------------------|
| 35 | MsgType | R | AD = Trade Capture Report Request | String | |
| 49 | SenderCompID | R | Assigned value used to identify firm sending message. Usually Firm Id | String | Sign on Firm Id |
| 56 | TargetCompID | R | Assigned value used to identify receiving firm. | String | CBOE Firm Id |
| 115 | OnBehalfOfCompID | O | Assigned value used to identify firm originating message if the message was delivered by a third party i.e. the third party firm identifier would be delivered in the SenderCompID field and the firm originating the message in this field. Note: This field is required if Transaction Level security is set to on. Please see Transaction Level Security Overview section to learn more about this feature and how CBOE's Transaction Level Security works. | String | Correspondent Id |
| 34 | MsgSeqID | O | Integer message sequence number. | Integer | |
| 50 | SenderSubID | O | Assigned value used to identify specific message originator (desk, trader, etc.) | String | Branch |
| 52 | SendingTime | R | Time of message transmission (always expressed in UTC (Universal Time Coordinated, also known as "GMT")) | UTC Time stamp | |

Trade Capture Report Request Body Fields and Description:

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|---------------------------|-------------------|----------------|--|-----------------|--|
| 568 | TradeRequestID | R | Trade Capture Report Request ID will be assigned by sender. | String | Provided by counterparty |
| 569 | TradeRequest Type | R | Type of Trade Capture Report. Valid values: 0 = All trades | Integer | Provided by counterparty, default should be 0 |
| 37 | OrderID | R | Unique identifier for Order as assigned by sell-side (broker, exchange, ECN). Uniqueness must be guaranteed within a single trading day. Firms which accept multi-day orders should consider embedding a date within the OrderID field to assure uniqueness across days. | String | OrsId + OrderEntry date(YYYYMMDD) <i>At least the order entry date should always be populated</i> |
| 11 | ClOrdID | O | Unique identifier for Order as assigned by the buy-side (institution, broker, intermediary etc.) identified by SenderCompID (49) or OnBehalfOfCompID (115) as appropriate. Uniqueness must be guaranteed within a single trading day. Firms, particularly those which electronically submit multi-day orders, trade globally or throughout market close periods, should ensure uniqueness across days, for example by embedding a date within the ClOrdID field. | String | SequenceNo # or Blank |
| component block <Parties> | NoPartyIDs | 0 | | Numeric | Value = 1 |
| | NoPartySubIDs | 0 | | Numeric | Value = 1 |
| | PartyID | 0 | | String | Executing Firm Id |
| | PartyIDSource | 0 | Identifies class or source of the PartyID (448) value. Required if PartyID is specified. Note: applicable values depend upon PartyRole (452) specified. See "Appendix 6-G - Use of [Parties] Component Block" Valid values: Applicable to all PartyRoles unless otherwise specified: B = BIC (Bank Identification Code-Swift managed) code (ISO 9362 - See "Appendix 6-B") C = Generally accepted market participant identifier (e.g. NASD mnemonic) | Char | C = Generally accepted market participant identifier |

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|-----|---------------------------|---------|---|----------|----------------|
| | PartyRole | 0 | Identifies the type or role of the PartyID (448) specified. See "Appendix 6-G - Use of [Parties] Component Block" Valid values: 1 = Executing Firm (formerly FIX 4.2 ExecBroker) 2 = Broker of Credit (formerly FIX 4.2 BrokerOfCredit) 3 = Client ID (formerly FIX 4.2 ClientID) 4 = Clearing Firm (formerly FIX 4.2 | Integer | Value = 1 |
| | PartySubID | 0 | | String | Value = Branch |
| | PartySubIDType | 0 | Example values: 1 = Firm 2 = Person 3 = System 4 = Application 24 = Department 25 = Location / Desk | Integer | Value = 1 |
| 54 | Side | R | Side of order Valid values: 1 = Buy 2 = Sell | char | Value = 1 or 2 |
| 725 | Response TransportType | R | Identifies how the response to the request should be transmitted. Valid values: 0 = Inband: transport the request was sent over (Default) 1 = Out-of-Band: pre-arranged out of band delivery mechanism (i.e. FTP, HTTP, NDM, etc) between counterparties. Details specified via ResponseDestination (726). | Integer | Value = 0 |
| 58 | Text | O | Free format text string (Note: this field does not have a specified maximum length) | String | |

Trailer Fields and Description:

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|------------|------------------|----------------|---|-----------------|-------------------|
| 93 | SignatureLength | N | Number of bytes in signature field. Required when trailer contains signature. Note: Not to be included within SecureData field | | |
| 89 | Signature | N | Note: Not to be included within SecureData field | | |
| 10 | Checksum | R | Three byte, simple checksum ALWAYS LAST FIELD IN MESSAGE; i.e. serves, with the trailing SOH, as the end-of-message delimiter. Always defined as three characters. (Always unencrypted) | | |

Trade Capture Report

This message is used by CBOE to send CMTA Allocations to Member firms. CBOE will send as many Trade Capture Reports in response to Trade Capture Report Request sent by Member Firm. This message consists of three parts like every other standard FIX messages (Header, Body & Trailer).

Header Fields and Description:

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|-----|--------------|---------|---|------------------|-------------|
| 8 | Begin String | R | Identifies beginning of new message and protocol version. ALWAYS FIRST FIELD IN MESSAGE. (Always unencrypted) Valid values: FIX.4.4 | String | |
| 9 | Body Length | R | Message length, in bytes, forward to the CheckSum field. ALWAYS SECOND FIELD IN MESSAGE. (Always unencrypted) | Length | |
| 35 | MsgType | R | AE = Trade Capture Report | String | |
| 49 | SenderCompID | R | Assigned value used to identify firm sending message. Usually Firm Id | String | CBOE FirmId |
| 56 | TargerCompID | R | Assigned value used to identify receiving firm. | String | Firm Id |
| 34 | MsgSeqID | R | Integer message sequence number. | Integer | |
| 52 | SendingTime | R | Time of message transmission (always expressed in UTC (Universal Time Coordinated, also known as "GMT") | UTCTim estamp | |

Trade Capture Request Body Fields and Description:

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|------------|----------------------|----------------|---|-----------------|---|
| 571 | TradeReportID | Y | Unique Report ID needs to be generated for each report | String | Unique identifier of trade capture report |
| 487 | TradeReportTransType | N | | Integer | Identifies Trade Report message transaction type Valid values: 0 = New 1 = Cancel 2 = Replace 3 = Release 4 = Reverse (Prior to FIX 4.4 this field was of type char) |
| 568 | TradeRequestID | Y | Needs to be filled with ReqID for which Report is being sent. | String | Request ID if the Trade Capture Report is in response to a Trade Capture Report Request |
| 748 | TotNumTradeReports | N | | Integer | Number of trade reports returned - if this report is part of a response to a Trade Capture Report Request |
| 820 | TradeLinkID | N | Needs to be filled in with Orsid | String | Used to associate a group of trades together. Useful for average price calculations. |
| 570 | PreviouslyReported | Y | Needs to be filled with N | Boolean | Indicates if the trade capture report was previously reported to the counterparty Valid values: Y = previously reported to counterparty N = not reported to counterparty |

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|---------------------------------|-----------|---------|---|----------|---|
| 423 | PriceType | N | | Integer | Code to represent the price type. Valid values: 1 = Percentage (e.g. percent of par) (often called "dollar price" for fixed income) 2 = Per unit (i.e. per share or contract) 3 = Fixed Amount (absolute value) 4 = Discount - percentage points below par 5 = Premium - percentage points over par 6 = Spread 7 = TED price 8 = TED yield 9 = Yield 10 = Fixed cabinet trade price (primarily for listed futures and options) 11 = Variable cabinet trade price (primarily for listed futures and options) (For Financing transactions PriceType implies the "repo type" - Fixed or Floating - 9 (Yield) or 6 (Spread) respectively - and Price (44) gives the corresponding "repo rate". |
| component block <Instrument> | | Y | Always include this block filled in with Optional values if needs to be filled if not empty block | Block | CFI Code - Market Indicator (col 4) used to indicate Market of Assignment |
| 854 | QtyType | N | Indicates the Qty Type can be 0 or 1 | Integer | Type of quantity specified in a quantity field: Valid values: 0 = Units (shares, par, currency) 1 = Contracts (if used - should specify ContractMultiplier (tag 231)) |
| 32 | LastQty | Y | Fill with Qty bought / sold | Qty | (formerly named: LastShares prior to FIX 4.3) Quantity (e.g. shares) bought/sold on this (last) fill. (Prior to FIX 4.2 this field was of type int) |
| 31 | LastPx | Y | Fill with Price | Price | Price of this (last) fill. |

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|------------------------------------|-----------------------|---------|------------------------------------|--|--|
| 75 | TradeDate | Y | Trade Date needs to be in YYYYMMDD | LocalMkt Date | Indicates date of trade referenced in this message in YYYYMMDD format. Absence of this field indicates current day (expressed in local time at place of trade). |
| 6 | AvgPx | N | Optional as per the description | Price | Average Price - if present then the LastPx will contain the original price on the execution-- Calculated average price of all fills on this order. |
| 442 | MultiLegReportingType | N | | Char | Type of report if multileg instrument. Provided to support a scenario for trades of multileg instruments between two parties. |
| 824 | TradeLegRefID | N | | Reference to the leg of a multileg instrument to which this trade refers | Reference to the leg of a multileg instrument to which this trade refers Used when MultiLegReportingType = 2 (Single Leg of a Multileg security) |
| 555 | NoLegs | N | | NumInGroup | Number of legs |
| component block <InstrumentLeg> | | N | | Block | Identifies a Multi-leg Execution if present and non-zero. Must be provided if Number of legs > 0 |
| | <687> LegQty | N | | Qty | See Quantity (53) for description and valid values |
| | <690> LegSwapType | N | | Integer | For Fixed Income, used instead of LegQty (687) or LegQty (685) to requests the respondent to calculate the quantity based on the quantity on the opposite side of the swap. Valid values: 1 = Par For Par 2 = Modified Duration 4 = Risk 5 = Proceeds |
| 60 | TransactTime | Y | Time of execution/order creation | UTC Time stamp | Time the transaction represented by this Trade Capture Report occurred. Time of execution/order creation (expressed in UTC (Universal Time Coordinated, also known as |

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|-----------------------------------|---------------|---------|---|----------------|--|
| | | | | | "GMT") |
| 552 | NoSides | Y | Value can be 1 or 2 | Num InGroup | Number of Side repeating group instances. Valid values: 1 = one side 2 = both sides |
| Side Group Fields Follows: | | | | | |
| 54 | Side | Y | Value can be 1 or 2 | char | Side of order Valid values: 1 = Buy 2 = Sell |
| 37 | OrderID | Y | Filled with OrderId assigned after rolling up the trades. | String | Unique identifier for Order as assigned by sell-side (broker, exchange, ECN). Uniqueness must be guaranteed within a single trading day. Firms which accept multi-day orders should consider embedding a date within the OrderID field to assure uniqueness across days. |
| 1 | Account | N | Specify the Account of Counter party | String | Account mnemonic as agreed between buy and sell sides, e.g. broker and institution or investor/intermediary and fund manager. |
| 118 | NetMoney | N | | Amt | Total amount due as the result of the transaction (e.g. for Buy order - principal + commission + fees) reported in currency of execution. |
| 119 | SettlCurrAmt | N | | Amt | Total amount due expressed in settlement currency (includes the effect of the forex transaction) |
| 120 | SettlCurrency | N | | Currency | Currency code of settlement denomination. |

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|---|------------------------------------|---------|----------------|----------|---|
| 77 | PositionEffect | N | | char | (formerly named: OpenClose prior to FIX 4.3) Indicates whether the resulting position after a trade should be an opening position or closing position. Used for omnibus accounting - where accounts are held on a gross basis instead of being netted together. Valid Values: O = Open C = Close This will be filled by value from first trade in the group. |
| 58 | Text | N | | String | Free format text string with 16 characters length will be populated from the first trade in the group. |
| Alloc Group Fields Follows inside Sides group: | | | | | |
| 79 | Alloc Account | Y | | String | Filled with CMTA's of each of the detail trades in the group |
| 661 | AllocAcctIDSource | Y | | Integer | Filled with source of the account from the detailed trades in the group. 1 –Market Maker 2 –Customer 3 –Firm 4 –Broker Dealer 5 –Non CBOE Market Maker |
| 736 | AllocSettlCurrency | y | | String | Always filled with “USD” |
| 80 | AllocQty | Y | Allocation Qty | Qty | (formerly named: AllocShares prior to FIX 4.3) Quantity to be allocated to specific sub-account for each detailed trade (Prior to FIX 4.2 this field was of type int) |
| 7047 | AllocPositionEffect (User Defined) | Y | | Char | Indicates whether the resulting position after a trade should be an opening position or closing position. Valid Values: O = Open C = Close This will be filled by value from |

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|--|---|---------|---|----------|---|
| | | | | | first trade in the group. |
| 9924 | TransactID (User Defined) | Y | | String | Unique Trade Identification number allotted to a trade |
| 9324 | AllocOptionalDataText (User Defined) | O | | String | Free format text string with 16 characters length will be populated from the first trade in the group. |
| 9771 | MMAccount Or Subaccount (User Defined) | O | This contains an alphanumeric with length of 3 characters allowed to represent the Market Maker Account. NOTE: This field will be available in December 2008 and is backward compatible to all previous versions. | String | Market Maker Account Note: Maps to the OCC customer account field for customer orders and the OCC market maker account for market maker order. |
| 7048 | CustomerId (User Defined) | O | This field contains alphanumeric 10 characters in length data to represent customer identification number. NOTE: This field will be available in December 2008 and is backward compatible to all previous versions. | String | Customer Identification field Note: Maps to OCC customer ID field for customer orders and market maker subaccount for market maker orders. |
| Nested Parties2 Details follows in Alloc group: | | | | | |
| 757 | Nested2PartyId | y | | String | This will identify the Market Maker account for the detailed trade in the group. |
| 758 | Nested2PartyId Source | y | | Char | This will identify the source of Market Maker Account. |
| 759 | Nested2partyId Role | y | | Integer | This will identify the party role |

Trailer Fields and Description:

| TAG | FieldName | Req/Op t | Description | DataTyp e | CBOE Field |
|------------|------------------|---------------------|--|----------------------|-------------------|
| 93 | SignatureLength | N | Number of bytes in signature field. Required when trailer contains signature. Note: Not to be included within SecureData field | | |
| 89 | Signature | N | Note: Not to be included within SecureData field | | |
| 10 | Checksum | R | Three byte, simple checksum is the ALWAYS LAST FIELD IN MESSAGE; i.e. serves, with the trailing SOH, as the end-of-message delimiter. Always defined as three characters. (Always unencrypted) | | |

Trade Capture Report Request Ack

This message is used by CBOE to acknowledge Member firms. CBOE will send this message in response to Trade Capture Report Request in case there are no Orders matching the criteria specified in the Trade Capture Report Request. This message consists of three parts like every other standard FIX messages (Header, Body & Trailer).

Header Fields and Description:

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|-----|--------------|---------|--|---------------|-------------|
| 8 | Begin String | R | Identifies beginning of new message and protocol version. ALWAYS FIRST FIELD IN MESSAGE. (Always unencrypted) Valid values: FIX.4.4 | String | |
| 9 | Body Length | R | Message length, in bytes, forward to the CheckSum field. ALWAYS SECOND FIELD IN MESSAGE. (Always unencrypted) | Length | |
| 35 | MsgType | R | AQ = Trade Capture Report Request ACK | String | |
| 49 | SenderCompID | R | Assigned value used to identify firm sending message. Usually Firm Id | String | CBOE FirmId |
| 56 | TargerCompID | R | Assigned value used to identify receiving firm. | String | Firm Id |
| 34 | MsgSeqID | R | Integer message sequence number. | Integer | |
| 52 | SendingTime | R | Time of message transmission (always expressed in UTC (Universal Time Coordinated, also known as "GMT")) | UTCTime stamp | |

Trade Capture Report Request Ack Body Fields and Description:

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|------------|---------------------|----------------|--|-----------------|---|
| 568 | TradeRequest ID | R | Trade Capture Report Request ID for which ACK is sent | String | |
| 749 | TradeRequest Result | R | Result of Trade Request 0 = Successful (Default) 1 = Invalid or unknown instrument 2 = Invalid type of trade requested 3 = Invalid parties 4 = Invalid Transport Type requested 5 = Invalid Destination requested 8 = TradeRequestType not supported 9 = Unauthorized for Trade Capture Report Request 99 = Other | String | |
| 750 | TradeRequest Status | R | Status of Trade Request Valid values 0 = Accepted 1 = Completed 2 = Rejected | String | |
| 569 | TradeRequest Type | R | Type of Trade Capture Report. Valid values: 0 = All trades 1 = Matched trades matching Criteria provided on request (parties, exec id, trade id, order id, instrument, input source, etc.) 2 = Unmatched trades that match criteria 3 = Unreported trades that match criteria 4 = Advisories that match criteria | String | |
| 748 | TotNumTrade Reports | 0 | Total number of trade reports returned. | String | |
| 58 | Text | 0 | Free format text string. | String | Value: Successfully Received TCR Request no trades found |

Trailer Fields and Description:

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|------------|------------------|----------------|---|-----------------|-------------------|
| 93 | SignatureLength | N | Number of bytes in signature field. Required when trailer contains signature. Note: Not to be included within SecureData field | | |
| 89 | Signature | N | Note: Not to be included within SecureData field | | |
| 10 | Checksum | R | Three byte, simple checksum ALWAYS LAST FIELD IN MESSAGE; i.e. serves, with the trailing SOH, as the end-of-message delimiter. Always defined as three characters. (Always unencrypted) | | |

Allocation Instruction

This message is used by Member firms to send updated Allocations to CBOE and must match the number of Trade Capture Reports received by the Member Firm. Therefore, the number of Allocation Instructions should match the number of Trade Capture Reports received. This message, like all FIX message, will consists of three parts, namely Header, Body & Trailer.

Header Fields and Description:

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|-----|----------------------|---------|---|----------------------|-----------------|
| 35 | MsgType | R | J = Allocation Instruction | String | |
| 49 | SenderCompID | R | Assigned value used to identify firm sending message. Usually Firm Id | String | Sign on FirmId |
| 56 | TargetCompID | R | Assigned value used to identify receiving firm. | String | CBOE Firm Id |
| 115 | OnBehalfOf CompID | O | Assigned value used to identify firm originating message if the message was delivered by a third party i.e. the third party firm identifier would be delivered in the SenderCompID field and the firm originating the message in this field. Note: This field is required if Transaction Level security is set to on. Please see Transaction Level Security Overview section details to know more about Transaction Level security and how CBOE's Transaction Level Security works. | String | CorrespondentId |
| 34 | MsgSeqID | O | Integer message sequence number. | Integer | |
| 50 | SenderSubID | O | Assigned value used to identify specific message originator (desk, trader, etc.) | String | Branch |
| 52 | SendingTime | R | Time of message transmission (always expressed in UTC (Universal Time Coordinated, also known as "GMT")) | UTC Timesta mp | |

Allocation Instruction Body Fields and Description:

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|---------------------------------|------------------|---------|---|------------|--|
| 70 | AllocID | R | Needs to populated with uniqueID | String | Unique identifier for this allocation instruction message. |
| 71 | AllocTransType | R | needs to be 0 | char | i.e. New, Cancel, Replace |
| 626 | AllocType | R | | Integer | Specifies the purpose or type of Allocation message |
| 196 | AllocLinkID | O | Specify the TradeCaptureReportID | String | Can be used to link two different Allocation messages (each with unique AllocID) together, i.e. for F/X "Netting" or "Swaps" |
| 466 | BookingRefID | O | | String | Can be used with AllocType="Ready-To-Book " |
| 857 | AllocNoOrderType | R | value should be 1 | Integer | Indicates how the orders being booked and allocated by this message are identified, i.e. by explicit definition in the NoOrders group or not. |
| 73 | NoOrders | O | Total number of orders in this allocation instruction | NumInGroup | Indicates number of orders to be combined for allocation. If order(s) were manually delivered set to 1 (one). Required when AllocNoOrdersType = 1 |
| component block <orderAllocGrp> | <11> ClOrdID | O | can be populated with client side of OrderId | Numeric | Unique identifier for Order as assigned by the buy-side (institution, broker, intermediary etc.) (identified by SenderCompID (49) or OnBehalfOfCompID (115) as appropriate). Uniqueness must be guaranteed within a single trading day. Firms, particularly those which electronically submit multi-day orders, trade globally or throughout market close periods, should ensure uniqueness across days, for example by embedding a date within the ClOrdID field. |

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|-----|-----------------------|---------|---|----------|--|
| | <37> OrderID | O | OrderID of the rolled up trades for which allocations are sent. | String | Unique identifier for Order as assigned by sell-side (broker, exchange, ECN). Uniqueness must be guaranteed within a single trading day. Firms which accept multi-day orders should consider embedding a date within the OrderID field to assure uniqueness across days. |
| | <38> OrderQty | O | Indicate the QTY for each of this order. | Qty | Quantity ordered. This represents the number of shares for equities or par, face or nominal value for FI instruments. |
| | <799> OrderAvgPx | O | Avg Price for this Order | Price | Average price for a specific order |
| | <800> OrderBookingQty | O | Qty that is being booked out of total orderQTY. | Qty | Quantity of the order that is being booked out as part of an Allocation Instruction or Allocation Report message |
| | <32> LastQty | O | | Qty | Amount of quantity (e.g. number of shares) in individual execution. Required if NoExecs > 0 |
| | <31> LastPx | O | | Integer | Price of this (last) fill. |
| 570 | Previouslyreported | O | Always value should be N | Integer | Indicates if the trade capture report was previously reported to the counterparty Valid values: Y = previously reported to counterparty N = not reported to counterparty |

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|-------------------|--------------|---------|---|----------|--|
| 54 | Side | R | Can be 1 or 2 | Char | side of order Valid values: 1 = Buy 2 = Sell 3 = Buy minus 4 = Sell plus 5 = Sell short 6 = Sell short exempt 7 = Undisclosed (valid for IOI and List Order messages only) 8 = Cross (orders where counterparty is an exchange, valid for all messages except IOIs) 9 = Cross short A = Cross short exempt B = "As Defined" (for use with multileg instruments) C = "Opposite" (for use with multileg instruments) D = Subscribe (e.g. CIV) E = Redeem (e.g. CIV) F = Lend (FINANCING - identifies direction of collateral) G = Borrow (FINANCING - identifies direction of collateral) (see Volume 1: "Glossary" for value definitions) |
| <Component Block> | <Instrument> | R | Always include this block filled in with Optional values if needs to be filled if not empty block | String | |
| 53 | Quantity | R | Total Qty | Qty | Overall/total quantity (e.g. number of shares) |
| 854 | QtyType | O | Indicates the Qty Type can be 0 or 1 | Integer | Type of quantity specified in a quantity field: Valid values: 0 = Units (shares, par, currency) 1 = Contracts (if used - should specify ContractMultiplier (tag 231)) |

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|-----|-----------|---------|---|----------|--|
| 423 | PriceType | O | Indicate the PriceType | Integer | Code to represent the price type. Valid values: 1 = Percentage (e.g. percent of par) (often called "dollar price" for fixed income) 2 = Per unit (i.e. per share or contract) 3 = Fixed Amount (absolute value) 4 = Discount - percentage points below par 5 = Premium - percentage points over par 6 = Spread 7 = TED price 8 = TED yield 9 = Yield 10 = Fixed cabinet trade price (primarily for listed futures and options) 11 = Variable cabinet trade price (primarily for listed futures and options) (For Financing transactions PriceType implies the "repo type" - Fixed or Floating - 9 (Yield) or 6 (Spread) respectively - and Price (44) gives the corresponding "repo rate". See Volume 1: "Glossary" for further value definitions) |
| 6 | AvgPx | R | Avg Price for all the Orders in this Allocation Instruction | Integer | Calculated average price of all fills on this order. For Fixed Income trades AvgPx is always expressed as percent-of-par, regardless of the PriceType (423) of LastPx (31). I.e., AvgPx will contain an average of percent-of-par values (see LastParPx (669)) for issues traded in Yield, Spread or Discount. |
| 15 | Currency | O | Specify the currency | Currency | Identifies currency used for price. Absence of this field is interpreted as the default for the security. It is recommended that systems provide the currency value |

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|-----|----------------|---------|--|----------|--|
| | | | | | whenever possible. See "Appendix 6-A: Valid Currency Codes" for information on obtaining valid values. |
| 75 | TradeDate | R | Provide the trade date for this Order | Date | Indicates date of trade referenced in this message in YYYYMMDD format. Absence of this field indicates current day |
| 60 | TransactTime | O | | Time | Time of execution/order creation |
| 118 | NetMoney | O | Provide the NetMoney value. | Amt | Total amount due as the result of the transaction (e.g. for Buy order - principal + commission + fees) reported in currency of execution. |
| 77 | PositionEffect | O | | Char | Indicates whether the resulting position after a trade should be an opening position or closing position. Used for omnibus accounting - where accounts are held on a gross basis instead of being netted together. Valid Values: O = Open C = Close |
| 58 | Text | O | | String | Free format text string |
| 892 | TotNoAllocs | O | Specify the total number of allocs which are send in response to Trade capture report. | Integer | Total number of NoAlloc entries across all messages. Should be the sum of all NoAllocs in each message that has repeating NoAlloc entries related to the same AllocID or AllocReportID. Used to support fragmentation. |
| 893 | LastFragment | O | Required if allocations are send by sequence of messages. | Boolean | Indicates whether this message is the last in a sequence of messages for those messages that support fragmentation, such as Allocation Instruction, Mass Quote, Security List, Derivative Security List Valid values: Y = Last message N = Not last message |

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|-----------------------------|----------------------------|---------|--|----------|--|
| 78 | NoAllocs | R | Specify the no of allocation in this particular allocation message. | Integer | Number of repeating AllocAccount (79)/AllocPrice (366) entries. |
| 9999 | Give-up executing firm | O | User defined field used to allocate order to an authorized firm as an executing entity of that order quantity. | String | Executing Firm Id. <i>If this tag is not provided for the order quantity in the allocation instruction the executing firm of this instruction is not changed.</i> |
| <Component Block Alloc Grp> | <79> AllocAccount | R | Specify the allocation Account. For a blank CMTA, set tag 79=000. | String | CMTA. |
| | <661> AllocAcctIDSource | R | 1 –Market Maker 2 –Customer 3 –Firm 4 –Broker Dealer 5 –Non CBOE Market Maker | Integer | OriginCode Used to identify the source of the AllocAccount (79) code. |
| | <573> MatchStatus | O | | Char | The status of this trade with respect to matching or comparison. Valid values: 0 = compared, matched or affirmed 1 = uncomparing, unmatched, or unaffirmed 2 = advisory or alert |
| | <366> AllocPrice | O | | Integer | Executed price for an AllocAccount (79) entry used when using "executed price" vs. "average price" allocations |
| | <80> AllocQty | R | QTY to be allocated for the account specified | Integer | Quantity to be allocated to specific sub-account |
| | <7047> AllocPositionEffect | R | This can be null or "" only when Origin Code (661: AllocAcctIDSource) value is 1--Market Maker or 5-- Non CBOE Market. O or C are the only other values allowed for all the Origin Codes((661: AllocAcctIDSource)) 1 –Market Maker 2 –Customer 3 –Firm 4 –Broker Dealer 5 –Non CBOE Market Maker | Char | Open/Close Indicates whether the resulting position after a trade should be an opening position or closing position. Used for omnibus accounting - where accounts are held on a gross basis instead of being netted together. Valid Values: O = Open C = Close |

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|-----|---|---------|--|----------|---|
| | <9771> MMAccount Or Subaccount (User Defined) | O | This contains an alpha numeric with length 3 characters allowed to represent the MarketMakerAccount. NOTE: This field will be available in December 2008 and is backward compatible to all previous versions. | String | Market Maker Account Note: Maps to the OCC customer account field for customer orders and the OCC market maker account for market maker order. |
| | <7048> CustomerId (User Defined) | O | This field contains alphanumeric 10 characters in length data to represent customer identification number. NOTE: This field will be available in December 2008 and is backward compatible to all previous versions. | String | Customer Identification field Note: Maps to OCC customer ID field for customer orders and market maker subaccount for market maker orders. |
| | <467> IndividualAllocID | O | Individual allocId for each of the account if is associated with any ID | String | Unique identifier for a specific NoAllocs (78) repeating group instance (e.g. for an AllocAccount). |
| | <161> AllocText | O | | String | Free format text related to a specific AllocAccount Note: The length cannot exceed 16 chars other wise rejection of message |

Note: The sum of individual allocations quantity (80: AllocQty) should be equal to Total Quantity (53: Quantity) And the total quantity cannot exceed the previous allocations quantity (32: LastQty) which was sent across by CBOE in their respective Trade Capture Reports. Incase of any discrepancy in allocation quantity CBOE will reject the allocation via Allocation Instruction ACK with AllocRejCode (Tag: 88) value set as "1 = incorrect quantity".

Trailer Fields and Description:

| TAG | FieldName | Req/Op t | Description | DataType | CBOE Field |
|------------|------------------|---------------------|---|-----------------|-------------------|
| 93 | Signature Length | N | Number of bytes in signature field. Required when trailer contains signature. Note: Not to be included within SecureData field | | |
| 89 | Signature | N | Note: Not to be included within SecureData field | | |
| 10 | Checksum | R | Three byte, simple checksum ALWAYS LAST FIELD IN MESSAGE; i.e. serves, with the trailing SOH, as the end-of-message delimiter. Always defined as three characters. (Always unencrypted) | | |

Allocation Instruction ACK

This message is used by CBOE to send Acknowledgements to Member Firms once CBOE receives Allocation Instructions from firms. Once CBOE receives the allocations it will ack the firms with status of (3 = received, *which is received but not yet processed*) and once CBOE processes successfully processes allocations it will again ack the firms with status 0 = accepted, *which is successfully processed*. Various status for ACK messages are shown below. This message consists of three parts like every other standard FIX messages (Header, Body & Trailer).

Allocation Status for various ACK messages:

- 0 = accepted (successfully processed)
- 1 = block level reject
- 2 = account level reject
- 3 = received (received, not yet processed)
- 4 = incomplete
- 5 = rejected by intermediary

Header Fields and Description:

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|-----|--------------|---------|---|----------------|--------------|
| 8 | Begin String | R | Identifies beginning of new message and protocol version. ALWAYS FIRST FIELD IN MESSAGE. (Always unencrypted) Valid values: FIX.4.4 | String | |
| 9 | Body Length | R | Message length, in bytes, forward to the CheckSum field. ALWAYS SECOND FIELD IN MESSAGE. (Always unencrypted) | Length | |
| 35 | MsgType | R | P = Trade Capture Report Request | String | |
| 49 | SenderCompID | R | Assigned value used to identify firm sending message. Usually Firm Id | String | CBOE Firm Id |
| 56 | TargerCompID | R | Assigned value used to identify receiving firm. | String | Firm Id |
| 34 | MsgSeqID | R | Integer message sequence number. | Integer | |
| 52 | SendingTime | R | Time of message transmission (always expressed in UTC (Universal Time Coordinated, also known as "GMT")) | UTC Time stamp | |

Allocation Instruction Body Fields and Description:

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|------------|------------------|----------------|--|-----------------|--|
| 70 | AllocID | M | AllocationID for which this ACK is sent back | String | Unique identifier for allocation message. (Prior to FIX 4.1 this field was of type int) |
| 60 | TransactTime | O | | UTC Time stamp | Time of execution/order creation (expressed in UTC (Universal Time Coordinated, also known as "GMT")) |
| 87 | AllocStatus | M | Can be 0 ,1,2,3 and 4 | Integer | Identifies status of allocation. Valid values: 0 = accepted (successfully processed) 1 = block level reject 2 = account level reject 3 = received (received, not yet processed) 4 = incomplete 5 = rejected by intermediary |
| 88 | AllocRejCode | O | More details about the Rejection | Integer | Identifies reason for rejection. Valid values: 0 = unknown account(s) 1 = incorrect quantity 2 = incorrect average price 3 = unknown executing broker mnemonic 4 = commission difference 5 = unknown OrderID (37) 6 = unknown ListID (66) 7 = other (further in Note 58=) 8 = incorrect allocated quantity 9 = calculation difference 10 = unknown or stale ExecID (17) 11 = mismatched data value (further in Note 58=) 12 = unknown ClOrdID (11) 13 = warehouse request rejected |
| 58 | Text | O | Any specific rejection reason if the reject code is Other. | String | Can include explanation for AllocRejCode = 7 (other) |

Trailer Fields and Description:

| TAG | FieldName | Req/Opt | Description | DataType | CBOE Field |
|------------|------------------|----------------|---|-----------------|-------------------|
| 93 | SignatureLength | N | Number of bytes in signature field. Required when trailer contains signature. Note: Not to be included within SecureData field | | |
| 89 | Signature | N | Note: Not to be included within SecureData field | | |
| 10 | Checksum | R | Three byte, simple checksum ALWAYS LAST FIELD IN MESSAGE; i.e. serves, with the trailing SOH, as the end-of-message delimiter. Always defined as three characters. (Always unencrypted) | | |

Any additional, optional FIX fields supplied on any firm request messages will be ignored by the CBOE FIX 4.4 service. These unsupported fields will not be carried through the system. This means that the unsupported fields will not be sent into CBOEDirect, nor will any unsupported fields be reported back to the firm on Trade Capture Requests and Allocation Instruction Ack's.

Application Level Error Handling

Business Message Reject

The Business Message Reject was introduced in FIX 4.4 to provide an Application Level message to reject FIX application messages that do not have a specific response message. The Business Message Reject message is used to reject an otherwise valid FIX application messages for business reasons or invalid data when there is no other means of rejecting the field.

The Business Message Reject message is not used to reject malformed or invalid requests – this is done by the Reject Message.

Note the only exception to this rule is in the event a business message is received, fulfills session-level rules. However, the message cannot be communicated to the business-level processing system. In this situation a Business Message Reject with BusinessRejectReason = “Application not available at this time” can be issued if the system is unable to send the specific “reject” message listed above due to this condition.

Messages which can be referenced via the Business Message Reject message are:

(the “ID” field BusinessRejectRefID refers to noted in [])

- TradeCaptureReportRequest [TradeRequestID]
- Allocation Instruction [AllocID]

Table 1 Business Message Reject

| Tag | Field Name | FIX Req'd | Comments |
|-----|----------------------|-----------|--|
| | Standard Header | Y | <i>MsgType[35] = j</i> (lowercase) |
| 45 | RefSeqNum | N | MsgSeqNum of rejected message |
| 372 | RefMsgType | Y | The MsgType of the FIX message being referenced. |
| 379 | BusinessRejectRefID | N | The value of the business-level “ID” field on the message being referenced. Required unless the corresponding ID field (see list above) was not specified. |
| 380 | BusinessRejectReason | Y | Code to identify reason for a Business Message Reject message. |
| 58 | Text | N | Where possible, message to explain reason for rejection |
| | Standard Trailer | Y | |

Scenarios for Business Message Reject:

| BusinessRejectReason[380] | |
|---------------------------|---|
| Enumeration | BusinessRejectReason Description |
| 0 | Other |
| 1 | Unknown ID |
| 2 | Unknown Security |
| 3 | Unsupported Message Type (receive a valid, but unsupported MsgType) |
| 4 | Application not available |
| 5 | Conditionally Required Field Missing |

Business Reject Messages Requiring Special Attention

Regardless of the values of RefMsgType [372], BusinessRejectRefId [379], BusinessRejectReason [380]. If CBOE sends out a Business Reject Message with the following Text [58] value

"Ambiguous Message Dispatch Failure (SE). Contact CBOE helpdesk for confirmation of action."

then *it is very important that this message be considered carefully*. The Electronic Trading System to which CBOE FIX 4.4 belongs is a distributed system. That particular text is only produced when there is an internal communications failure within the CBOE system. That means that the message referred to by RefMsgType [372], and BusinessRejectRefID [379] did not complete its normal processing task or did not complete within a reasonable time frame. If it is a message that affects the Market Position of the SenderCompID [49], then the SenderCompID [49] needs to:

1. Take immediate action to compensate for the ambiguous message failure (e.g., if some form of a Quote is involved, cancels or log out to cancel any resting Quotes).
2. If an order origination request failed, a cancel request should be sent to ensure the order is not in the market before taking an alternate action regarding the order.

Contact the CBOE helpdesk to help determine where and what the internal communications involved failed or succeeded.

Transaction Level Security Overview:

If any firm connecting to CBOE via FIX and opts for Transaction Level Security the firms has following options.

1) No Transaction Level Security (Default)

This security level is good for firms who want to permit querying for Executing Firms with out any restrictions.

Ex: Firm ABC can query for executing firms 001,002 etc.

Note: The allowable list of executing firms needs to be submitted to CBOE. And CBOE after verification will add the list of executing firms into the CTMr system.

2) Correspondent Transaction Level Security:

This security level is apt for firms who want to restrict their correspondents for querying on Executing Firms.

In given sample table we can see ABC firm has two correspondents (ABC01, ABC02) where each one of the Correspondent is allowed to query on their respective executing firms.

| FIRM | CORRESPONDENT | EXECUTING FIRMS |
|------|---------------|-----------------|
| ABC | ABC01 | 600,500 |
| ABC | ABC02 | 101,300 |

Note: The allowed list of executing firms and Correspondents' needs to be submitted to CBOE. And CBOE after verification will add the list of executing firms and Correspondents into the system.

And if Transaction Level Security is opted Firms connecting via FIX needs to fill in the FIX field (**115: OnBehalfOfCompID**) with the correspondent id value in Trade Capture Report Request and Allocation Instruction.

In case when Transaction Level Security is chosen other than default and **OnBehalfOfCompID** tag is empty. CBOE will reject the Trade Capture Report Request or Allocation Instructions.

FIX Field (Tag) Dictionary

Standard FIX Fields

This table contains the usage of standard FIX 4.4 fields in the CBOE FIX 4.4 Service.

<http://fixionary.com/>

Table 2 Standard FIX Tag Dictionary

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|-------------|-----------|------------|-----------|---|---|--|
| 1 | Account | N | N | String | Account number as sent by originating firm that appears on trade match reports and is passed through to OCC. Each user can use only one account per product class. Accounts must be approved by the firm's Exchange Membership Department and must be preconfigured by your API testing representative. Exact size is 3 and data type is alphabetic only. | Account mnemonic as agreed between broker and institution. | Order, Cancel, Replace, Execution Report |
| 6 | AvgPx | Y | Y | Float | Will always be 0.0. The FIX 4.4 Service requires the firm to calculate and store the average execution price. FIX 4.4 will properly calculate and distribute this value. | Calculated average price of all fills on this order. Valid values: 0 - 99999999.9999 (number of decimal places may vary and not limited to four) | Execution Report |
| 7 | BeginSeqNo | Y | Y | Int | In a Resend Request from the CBOE to the firm, this tag will indicate the beginning sequence number for the range of messages that are being requested. | | |
| 8 | BeginString | Y | Y | String | Per standard. "FIX.4.4" | Identifies beginning of new message and protocol version. ALWAYS FIRST FIELD IN MESSAGE. (Always <i>unencrypted</i> .) Valid values: FIX.4.1 | Standard Header of all messages |
| 9 | BodyLength | Y | Y | Int | Per standard. | Message length, in bytes, forward to the CheckSum field. ALWAYS SECOND FIELD IN MESSAGE. (Always <i>unencrypted</i> .) Valid values: 0 – 9999 | Standard Header of all messages |
| 10 | Checksum | Y | Y | String | Per standard. | Three byte, simple checksum (see Appendix B for description). ALWAYS LAST FIELD IN RECORD; i.e., serves, with the trailing <SOH>, as the end-of-record delimiter. Always defined as three characters. (Always <i>unencrypted</i> .) | Standard Trailer of all messages |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|----------|-----------|------------|-----------------------|--|--|---|
| 11 | ClOrdID | Y | Y | String | <p>Unique identifier of the order as assigned by institution. This must contain the Branch + Branch Sequence Number + Order Date.</p> <p>Where:</p> <p>The Branch is 1 to 3 alphabetic only characters with no embedded blanks in the range: A – ZZZ</p> <p>(NOTE: For Market maker orders, CBOE suggests that the User ID (first half of SenderSubId) be used as the Branch).</p> <p>The Branch Sequence Number is a 1 to 4 numeric only value with no embedded blanks in the range: 1 – 9999</p> <p>The order date is separated from the Branch + Branch Sequence Number by a hyphen“-“.</p> <p>AAA9999-YYYYMMDD</p> <p>The order date must be provided as follows: YYYYMMDD</p> | Unique identifier for Order as assigned by institution. Uniqueness must be guaranteed within a single trading day. Firms which electronically submit multi-day orders should consider embedding a date within the ClOrdID field to assure uniqueness across days. | Order, Cancel, Replace, Execution Report, Cancel Reject |
| 14 | CumQty | Y | Y | Int | In FIX 4.4 will be supported per the standard. For options this refers to the total number of contracts filled. | Total number of shares filled. Valid values: (0 – 1000000000) | Execution Report |
| 15 | Currency | N | N | Currency | Can be used to specify the currency that the price was quoted in. | | |
| 16 | EndSeqNo | Y | Y | Int | In a Resend Request from the CBOE to the firm, this tag will indicate the end sequence number for the range of messages that are being requested. If this value = 0, then the firm should account for all messages from the beginning with no specific end number. | | |
| 17 | ExecID | Y | Y | String | <p>Unique serial number that is derived from the system time (GMT TIME?) in milliseconds when the Execution Report is created.</p> <p>CBOE Trade ID (High and Low). This value must be communicated to the CBOEdirect Administrator if the user wishes to request a trade bust.</p> | Unique identifier of execution message as assigned by broker (will be 0 (zero) for ExecTransType=3 (Status)). Uniqueness must be guaranteed within a single trading day or the life of a multi-day order. Firms which accept multi-day orders should consider embedding a date within the ExecID field to assure uniqueness across days. | Execution Report |
| 18 | ExecInst | N | N | Multiple Value String | <p>Refer to Contingency Mapping Table.</p> <p>The following values are supported in FIX 4.4 and are mapped to ORS contingencies: 1 = Not Held</p> | Instructions for order handling on exchange trading floor. If more than one instruction is applicable to an order, this field can contain multiple instructions separated by space. | Order, Cancel, Replace, Execution Report |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|---------------|-----------|------------|-----------|---|---|---|
| | | | | | G = All or None (AON) f = Intermarket sweep order (ISO) 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 | | |
| 19 | ExecRefID | N | N | String | Required for Cancel and Correct ExecTransType messages | | |
| 20 | ExecTransType | Y | Y | Char | 0 = New 1 = Trade Bust | Identifies transaction type. Valid values: 0 = New , 1 = Cancel, 2 = Correct, 3 = Status | Execution Report |
| 21 | HandlInst | Y | Y | Char | Must be specified per specification. Ignored by FIX4.4. Any value is accepted. ORS decides order handling based upon order characteristics and firm specified configuration information. | Instructions for order handling on Broker trading floor. Valid values: 1 = Automated execution order, private, no Broker intervention 2 = Automated execution order, public, Broker intervention OK 3 = Manual order, best execution | Order, Cancel, Replace |
| 22 | IDSource | N | N | String | Ignored by CBOEdirect FIX 4.4 Service on messages received from firms. Field will be set to "8" (Exchange Symbol) on messages sent to firms. | Identifies class of alternative SecurityID. Valid values: 1 = CUSIP 2 = SEDOL 3 = QUIK 4 = ISIN number 5 = RIC code 6 = ISO Currency Code 7 = ISO Country Code 8 = Exchange Symbol 100+ are reserved for private security identifications | Order, Cancel, Cancel-Replace, Execution Report, Security Status. |
| 31 | LastPx | Y | Y | Float | Last Sale Price. Will be set to 0.0 if Execution Report is not reporting a Fill or Partial Fill. | Price of this (last) fill. Field not required for ExecTransType = 3 (Status). Valid values: 0 - 99999999.9999 (number of decimal places may vary and not limited to four) | Execution Report |
| 32 | LastShares | Y | Y | Int | Last Sale Quantity. Will be set to 0 if Execution Report is not reporting a Fill or Partial Fill. | Quantity of shares bought/sold on this (last) fill. Field not required for ExecTransType = 3 (Status). Valid values: (0 - 1000000000) | Execution Report |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|-------------|-----------|------------|-----------|---|---|--|
| 33 | LinesOfText | | | Int | | Identifies number of lines of text body | |
| 34 | MsgSeqNum | Y | Y | Int | Per standard. | Integer message sequence number. Valid values: 0 - 999999 | Standard Header of all messages |
| 35 | MsgType | Y | Y | String | Per standard. | Defines message type. ALWAYS THIRD FIELD IN MESSAGE. (Always <i>unencrypted</i> .) | Standard Header of all messages |
| 36 | NewSeqNo | N | Y | Int | Used on Resend Request Gap Fill messages | | |
| 37 | OrderID | N | N | String | Will be set to the OrderID from CBOE which is of the form highCBOEId:lowCBOEId. | Unique identifier for Order as assigned by broker. Uniqueness must be guaranteed within a single trading day. Firms which accept multi-day orders should consider embedding a date within the OrderID field to assure uniqueness across days. | Execution Report |
| 38 | OrderQty | N | N | Int | Quantity specified on the original request message from the firm. | Number of shares ordered. Valid values: (0 - 1000000000) | Order, Cancel, Replace, Execution Report |
| 39 | OrdStatus | Y | Y | Char | Status of the order. FIX 4.4 supports the following values for OrdStatus: 0 New 1 Partial_Fill 2 Fill 3 Done_For_Day 4 Canceled 5 Replace 6 Pending_Cancel 7 Stopped 8 Rejected 9 Suspended A Pending_New B Calculated C Expired D Restated E Pending_Replace | Identifies current status of order. Valid values: 0 = New 1 = Partially filled 2 = Filled 3 = Done for day 4 = Canceled 5 = Replaced 6 = Pending Cancel/Replace 7 = Stopped 8 = Rejected 9 = Suspended A = Pending New B = Calculated C = Expired | Execution Report |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|-------------|-----------|------------|--------------|--|--|--|
| 40 | OrdType | Y | Y | Char | <p>FIX 4.4 supports the following order types:</p> <p>1 = Market 2 = Limit 3 = Stop 4 = Stop Limit 5 = Market on close 7 = Limit or Better B = Limit on Close J = Market if Touched¹</p> <p>Used for Stock: Intermarket Sweep = 2 (Limit) Reserve = Midpoint Cross = 1 (Market) Cross = 2 (Limit) Tied Cross (currently unsupported) = 2 (Limit) Autolink Cross = 2 (Limit) Autolink Cross Match = 2 (Limit)</p> <p>Refer to Contingency Mapping Table.</p> | <p>Order type. Valid values: 1 = Market 2 = Limit 3 = Stop 4 = Stop limit 5 = Market on close 6 = With or without 7 = Limit or better 8 = Limit with or without 9 = On basis A = On close B = Limit on close C = Forex - Market D = Previously quoted E = Previously indicated F = Forex - Limit G = Forex - Swap H = Forex - Previously Quoted P = Pegged (requires ExecInst = L, R, M, P or O)</p> | Order, Cancel, Replace, Execution Report |
| 41 | OrigClOrdID | N | N | String | Per Standard – must follow format specified for field <i>ClOrdID</i> [11]. | ClOrdID of the previous order (NOT the initial order of the day) as assigned by the institution, used to identify the previous order in cancel and cancel replace requests. | Cancel, Replace, Execution Report |
| 42 | OrigTime | | | UTCTimestamp | | Time of message origination (always expressed in UTC (Universal Time Coordinated, also known as “GMT”)) | |
| 43 | PossDupFlag | N | N | Char | Per standard. | Indicates possible retransmission of message with this sequence number. Valid values: Y = Possible duplicate, N = Original transmission | Standard Header of all messages |
| 44 | Price | N | N | Float | <p>Price per contract. Refer to Order Contingency Mapping Table. Required for limit OrdTypes.</p> <p>OrdType = 2 if no other contingency is specified.</p> <p>OrdType = 1 if no other contingency is specified and the Price field is not specified.</p> <p>0.0 – 99999999.9999</p> | <p>Price per share.</p> <p>Valid values: 0 – 99999999.9999 (number of decimal places may vary and not limited to four)</p> | Order, Replace, Execution Report |

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

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|-----------------------------|-----------|------------|-----------|---|---|----------------------------------|
| 47 | Rule80A (aka OrderCapacity) | N | N | Char | <p>See the section in document FIX-03C entitled “Specify the order capacity (origin) on an order” for more details.</p> <p><u>CBOE Member Origins</u></p> <p>C Customer F Firm M Market maker B Broker Dealer X Customer Broker Dealer N Non member market maker / Market maker specialist at another options exchange (Not yet supported on the CBOE floor approved by EFPC) Y Stock Specialist registered in the underlying security (Not yet supported on the floor - approval status is unknown)</p> <p><u>CME Member Origins</u></p> <p>V CTI 1/Origin 1 Member, Customer Segregated Account E CTI 1/Origin 2 Member, House Account Q CTI 1/Origin 5 Member, SIPC Protected Account G CTI 3/Origin 1 User Proxy for trader, Customer Segregated Account H CTI 3/Origin 2 User Proxy for trader, House Account R CTI 3/Origin 5 User Proxy for trader, SIPC Protected Account O CTI 4/Origin 2 Non Member, House Account T CTI 4/Origin 5 Non Member, SIPC Protected Account</p> <p><u>CBSX Member Origins</u></p> <p>D Program Trade, index arb, for Member firm/org for its own account</p> | <p>Note that the name of this field is changing to “OrderCapacity” as Rule80A is a very US market-specific term. Other world markets need to convey similar information, however, often a subset of the US values. .</p> <p>See the <u>“Rule80A (aka OrderCapacity) Usage by Market” appendix</u> for market-specific usage of this field. Valid values:</p> <p>A = Agency single order B = Short exempt transaction (refer to A type) C = Program Order, non-index arb, for Member firm/org D = Program Order, index arb, for Member firm/org E = Registered Equity Market Maker trades F = Short exempt transaction (refer to W type) H = Short exempt transaction (refer to I type) I = Individual Investor, single order J = Program Order, index arb, for individual customer K = Program Order, non-index arb, for individual customer L = Short exempt transaction for member competing market-maker affiliated with the firm clearing the trade (refer to P and O types) M = Program Order, index arb, for other member N = Program Order, non-index arb, for other member O = Competing dealer trades P = Principal R = Competing dealer trades S = Specialist trades T = Competing dealer trades U = Program Order, index arb, for other agency W = All other orders as agent for other member X = Short exempt transaction for member competing market-maker not affiliated with the firm clearing the trade (refer to W and T types) Y = Program Order, non-index arb, for other agency Z = Short exempt transaction for non-member competing market-maker (refer to A and R types)</p> | Order, Replace, Execution Report |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|----------|-----------|------------|-----------|---|---------------------|--------------|
| | | | | | <p>L Program Trade, non-index arb, for Member firm/org for its own account</p> <p>I or M Competing market maker and competing market maker-short exempt, for member/member org for its own account. Origin I is required to trade against odd-lots. Origin M cannot trade against odd-lots.</p> <p>E Short exempt² and all other orders for member/member org for its own account</p> <p>H Error (trader uses this trade to reverse out a previous trading error), for member/member org for its own account</p> <p>F Program Trade, index arb, for Member firm/org for another member's account</p> <p>N Program Trade, non-index arb, for Member firm/org for another member's account</p> <p>T Competing market maker and competing market maker short-exempt, for Member firm/org for another member's account</p> <p>W Short exempt (see footnote "2") and all other orders, for Member firm/org for another member's account</p> <p>J Program Trade, index arb, for individual as defined by Section 11(a) (1) (E) of the Securities Exchange Act of 1934</p> <p>K Program Trade, non-index arb, for individual as defined by Section 11(a) (1) (E) of the Securities Exchange Act of 1934</p> | | |

² For CBSX, the same account type code is used for short-exempt orders as is used for "all other orders". Short exempt orders must be separately marked as such when submitted to the Exchange.

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|--------------|-----------|------------|-----------|---|---|---------------------------------|
| | | | | | <p>C Short exempt (see footnote “2”) and all other orders, for individual as defined by Section 11(a) (1) (E) of the Securities Exchange Act of 1934</p> <p>U Program Trade, index arb, for non-member/non-member org that is not an individual as defined by Section 11(a) (1) (E) of the Securities Exchange Act of 1934</p> <p>Y Program Trade, non-index arb, for non-member/non-member org that is not an individual as defined by Section 11(a) (1) (E) of the Securities Exchange Act of 1934</p> <p>R Competing market maker and competing market maker short-exempt, for non-member/non-member org that is not an individual as defined by Section 11(a) (1) (E) of the Securities Exchange Act of 1934</p> <p>B Short exempt (see footnote “2”) and all other orders, for non-member/non-member org that is not an individual as defined by Section 11(a) (1) (E) of the Securities Exchange Act of 1934</p> | | |
| 48 | SecurityID | | | String | The CBOEdirect product key is used to identify all products traded on CBOE and ONEChicago markets and their underlying products. | CUSIP or other alternate security identifier | |
| 49 | SenderCompID | Y | Y | Char | Refer to FIX-03A for details on CBOE usage | Assigned value used to identify firm sending message. | Standard Header of all messages |
| 50 | SenderSubID | N | N | Char | Refer to FIX-03A for details on CBOE usage | Assigned value used to identify specific message originator (desk, trader, etc.). | Standard Header of all messages |
| 52 | SendingTime | Y | Y | time | Per standard. Time upon input is expected to be in Universal Time Coordinated (UTC) – see FIX specification. Time will be mapped to Central Time Zone when message is input to ORS. Outbound messages are mapped from Central Time Zone to UTC. | Time of message transmission (always expressed in GMT). | Standard Header of all messages |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|--------------|-----------|------------|-----------|--|---|---|
| 54 | Side | Y | Y | Char | Side for the product that was specified on the request message from the firm. 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 <i>or</i> B = Same 2 = Opposite <i>or</i> C=Opposite | Side of order. Valid values: 1 = Buy 2 = Sell 3 = Buy minus 4 = Sell plus 5 = Sell short 6 = Sell short exempt 7 = Undisclosed (valid for IOI message only) 8 = Cross (orders where counterparty is an exchange, valid for all messages except IOIs) | Order, Cancel, Replace, Execution Report |
| 55 | Symbol | Y | Y | Char | Used for the trading symbol for the product. For options this is the one to three character ticker symbol (referred to within CBOEdirect as the Reporting Class), examples: IBM, IBZ, MSQ, DLQ, OEX, OEY, DJX. For futures this is a one to four character ticker symbol, combined with a contract specification designation between 0 and 9 inclusive, followed by one character that represents OneChicago, for example: MSFT1C, IBM1C. For underlying it is the ticker symbol for the underlying product, such as IBM, T, MSFT, OEX, SPX. | Ticker symbol. | Order, Cancel, Replace, Execution Report |
| 56 | TargetCompID | Y | Y | Char | Refer to FIX-03A for details on CBOE usage | Assigned value used to identify receiving firm. | Standard Header of all messages |
| 57 | TargetSubID | N | N | Char | Refer to FIX-03A for details on CBOE usage | Assigned value used to identify specific individual or unit intended to receive message. "ADMIN" reserved for administrative messages not intended for a specific user. | Standard Header of all messages |
| 58 | Text | N | N | Char | A text string that will vary in functionality depending on the type of message. CBOE ignores this field on new order messages sent to CBOE. | Free format text string. (Note: this field does not have a specified maximum length.) | Order, Replace, Execution Report, Reject, Logout, Email., Security Definition |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|--------------|-----------|------------|-----------|--|---|------------------|
| 59 | TimeInForce | N | N | Char | <p>Absence of this field indicates Day order.</p> <p>FIX 4.4 supports the following values for TimeInForce:</p> <p>0 = Day</p> <p>1 = Good Till Cancel (GTC)</p> <p>2 = At the Opening (OPG) – not currently supported</p> <p>3 = Immediate or Cancel (IOC)</p> <p>4 = Fill or Kill (FOK)</p> <p>Refer to Contingency Mapping Table.</p> <p>Options and Futures: Specifies how long the order remains in effect. Absence of this tag is interpreted as DAY.</p> <p>Valid values:</p> <p>0 = Day</p> <p>1 = GTC</p> <p>2 = OPG (at the open)</p> <p>3 = IOC (Immediate or CXL)</p> <p>4 = FOK (Fill or Kill)</p> <p>Linkage: '3' = IOC.</p> <p>Required for entering a Principal (P) Linkage order to an away market. This field must be specified as '3' = IOC.</p> <p>Stock:</p> <p>Intermarket Sweep Order (ISO):</p> <p>An ISO is essentially treated in an IOC fashion, time in force values '0' or '1' are accepted. Refer to Contingency Mapping Table.</p> | <p>Specifies how long the order remains in effect. Absence of this field is interpreted as DAY.</p> <p>Valid values:</p> <p>0 = Day</p> <p>1 = Good Till Cancel (GTC)</p> <p>2 = At the Opening (OPG)-not currently supported</p> <p>3 = Immediate or Cancel (OC)</p> <p>4 = Fill or Kill (FOK)</p> <p>5 = Good Till Crossing (GTX)</p> <p>6 = Good Till Date</p> | Order, Replace |
| 60 | TransactTime | N | N | Char | GMT time the execution report was created. | Time of execution/order creation (expressed in GMT). | Execution Report |
| 66 | ListID | Y | N | | Must be unique, by customer, for the day | | |
| 67 | ListSeqNo | Y | Y | | Order number within the list. | | |
| 68 | TotNoOrders | Y | Y | | <p>Used to support fragmentation. Sum of NoOrders across all messages with the same ListID. Used for internalization</p> <p>Value=2</p> | | |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|---------------|-----------|------------|-----------|---|--|--|
| 73 | NoOrders | Y | Y | | Number of orders in the list message which is used for internalization orders Value=2 | | |
| 76 | ExecBroker | N | Y | Char | Firm Number – as assigned by the OCC (numeric – 3 digits) | Identifies executing / give-up broker. Standard NASD market-maker mnemonic is preferred. | Order, Cancel, Replace, Execution Report |
| 77 | OpenClose | N | N | Char | Required for customer orders by FIX 4.4 | For options only. Valid Values: O=Open, C=Close | Order, Cancel, Replace, Execution Report |
| 84 | CxlQty | N | N | Qty | Cancel or bust quantity. Can be aggregate depending on the message. | Total number of shares canceled for this order. (Prior to FIX 4.4 this field was of type int) | |
| 90 | SecureDataLen | N | N | Int | Required to identify length of encrypted section of message. (Always unencrypted.) CBOE does not support encryption in FIX 4.4 at this time. | Length of encrypted message. | Standard Header of all messages |
| 91 | SecureData | N | N | Data | Required when message body is encrypted. Always immediately follows SecureDataLen field. CBOE does not support encryption in FIX 4.4 at this time. | Actual encrypted data stream. | Standard Header of all messages |
| 94 | EmailType | | | Char | | Email message type. Valid values: 0 = New 1 = Reply 2 = Admin Reply | |
| 97 | PossResend | N | N | Boolean | Per standard. | Indicates that message may contain information that has been sent under another sequence number. Valid Values: Y=Possible resend; N=Original transmission | Standard Header of all messages |
| 99 | StopPx | N | | Price | Required for OrdType = “Stop” or OrdType = “Stop limit.” Refer to Contingency Mapping Table. | Price per share. Valid values: 0- 99999999.9999 (number of decimal places may vary and not limited to four) | Order, Replace, Execution Report |
| 100 | ExDestination | N | Y | Char | Should be set to “W” For W_STOCK, set to “CBOE” | Execution destination as defined by institution when order is entered. Valid values: See Appendix C in the FIX 4.4 Specification | Order, Replace, Execution Report |
| 102 | CxlRejReason | N | N | Char | 0 = Too Late to Cancel 1 = Unknown order | Code to identify reason for cancel rejection. Valid values: 0 = Too late to cancel; 1 = Unknown order | Cancel Reject |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|------------------|-----------|------------|-----------|---|---|---|
| 103 | OrdRejReason | N | N | Int | Per Standard | Code to identify reason for order rejection: Valid values: 0 – Broker or Exchange Option 1 – Unknown Symbol 2 – Exchange Closed 3 – Order Exceed Limit 4 – Too late to enter 5 – Unknown Order 6 – Duplicate order (e.g. dupe ClOrdID) 7 – Duplicate of verbally communicated order 8 – Stale Order | Execution Report |
| 106 | Issuer | N | N | String | Per FIX 4.4 Standard | Company name of security issuer (e.g. International Business Machines) | |
| 107 | SecurityDesc | | | String | Future, Option, Index, or Underlying Products: Contains the CFICode for the underlying product Strategy Products: Strategy product names. The definitions of each strategy type are described in the CBOEdirect W_MAIN / ONE Strategy Order Test Plan. Straddle Pseudo Straddle Vertical Ratio Time Diagonal Combo Unknown Spread Type | Security description. | |
| 108 | HeartBtInt | | Y | Int | The heart beat interval is set by the initiator at logon with this tag. CBOEdirect sets the heartbeat interval to be whatever the firm specifies. | Heartbeat interval (seconds) | |
| 109 | ClientID | N | N | Char | Correspondent Firm that was specified on the request message (New Order, Cancel, Replace) from the firm. | Firm identifier used in third party-transactions. | Order, Cancel, Replace, Execution Report, Cancel Reject |
| 110 | MinQty | N | N | Int | Refer to Contingency Mapping Table. Used to specify a minimum quantity that can be filled on the order. | Minimum quantity of an order to be executed. Valid values: (0 - 1000000000) | Order, Cancel, Replace, Execution Report |
| 115 | OnBehalfOfCompID | N | N | Char | Refer to FIX-03A for details on CBOE usage | Assigned value used to identify firm originating message if the message was delivered by a third party, i.e., the third party firm identifier would be delivered in the SenderCompID field and the firm originating the message in this field. | Standard Header of all messages |
| 116 | OnBehalfOfSubID | N | N | Char | Refer to FIX-03A for details on CBOE usage | Assigned value used to identify specific message originator (i.e., trader) if the message was delivered by a third party. | Standard Header of all messages |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|----------------------|-----------|------------|-----------|--|--|---------------------------------|
| 117 | QuoteID | Y | Y | String | Users should provide a quote identifier QuoteID[117] on each quote. A firm can have only one two sided quote in effect for a product at a time. Because of this, QuoteIDs do not have to be unique. You have the choice to keep the same QuoteID across multiple submissions of quotes for a specific product. | Unique identifier for quote | |
| 122 | OrigSendingTime | N | N | Time | Per standard. | Original time of message transmission (always expressed in GMT) when transmitting orders as the result of a resend request. | Standard Header of all messages |
| 123 | GapFillFlag | N | Y | Boolean | When a firm sends a Sequence Reset message, this tag should be set to = Y. | Indicates that the Sequence Reset message is replacing administrative or application messages which will not be resent. Valid values: Y = Gap Fill message, MsgSeqNum field valid N = Sequence Reset, ignore MsgSeqNum | |
| 128 | DeliverToCompID | N | N | Char | Refer to FIX-03A for details on CBOE usage | Assigned value used to identify the firm targeted to receive the message if the message is delivered by a third party, i.e., the third party firm identifier would be delivered in the TargetCompID field and the ultimate receiver firm ID in this field. | Standard Header of all messages |
| 129 | DeliverToSubID | N | N | Char | Refer to FIX-03A for details on CBOE usage | Assigned value used to identify specific message recipient (i.e., trader) if the message is delivered by a third party | Standard Header of all messages |
| 131 | QuoteReqID | | Y | String | | Unique identifier for quote request | |
| 141 | ResetSeqNumFlag | N | N | Boolean | CBOE does not support this tag. | | |
| 142 | SenderLocationID | N | N | Char | Refer to FIX-03A for details on CBOE usage | Assigned value used to identify specific message originator's location (i.e., geographic location and/or desk, trader). | Standard Header of all messages |
| 143 | TargetLocationID | N | N | Char | Refer to FIX-03A for details on CBOE usage | Assigned value used to identify specific message originator's location (i.e., geographic location and/or desk, trader). | Standard Header of all messages |
| 144 | OnBehalfOfLocationID | N | N | Char | Refer to FIX-03A for details on CBOE usage | Assigned value used to identify specific message originator's location (i.e., geographic location and/or desk, trader) if the message was delivered by a third party. | Standard Header of all messages |
| 145 | DeliverToLocationID | N | N | Char | Refer to FIX-03A for details on CBOE usage | Assigned value used to identify specific message originator's location (i.e., geographic location and/or desk, trader) if the message was delivered by a third party. | Standard Header of all messages |
| 146 | NoRelatedSym | Y | Y | Int | Number of securities returned as part of the repeating group. | Specifies the number of repeating symbols specified. | |
| 147 | Subject | | | String | | The subject of an Email message | |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|---------------|-----------|------------|-----------|--|---|------------------|
| 150 | ExecType | Y | Y | Char | Orders: Same values as OrdStatus[39] Quotes: Same values as Quotestatus[9312] | Describes the specific ExecutionRpt (i.e., Pending Cancel) while OrdStatus will always identify the current order status (i.e., Partially Filled). Valid values: 0 = New 1 = Partial fill 2 = Fill 3 = Done for day 4 = Canceled 5 = Replace 6 = Pending Cancel/Replace 7 = Stopped 8 = Rejected 9 = Suspended A = Pending New B = Calculated C = Expired D = Restarted E = Pending_Replace | Execution Report |
| 151 | LeavesQty | Y | Y | Int | Quantity open for further execution. | Amount of shares open for further execution. If the OrdStatus is Canceled, DoneForTheDay, Expired, Calculated, or Rejected (in which case the order is no longer active) then LeavesQty could be 0, otherwise LeavesQty = OrderQty - CumQty. Valid values:(0 - 1000000000) | Execution Report |
| 164 | EmailThreadID | | | String | | Unique identifier for an email thread (new and chain of replies) | |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|--------------------|-----------|------------|------------|---|--|---|
| 167 | SecurityType | N | N | Char | <p>OPT = Stock or Index options.</p> <p>CS = Type used to identify all stock products within CBOEdirect. The CBOEdirect system does not differentiate the type of stock (equity). For this reason, all stocks that serve as underlyings with CBOEdirect will be designated as Fix SecurityType[167] = "CS".</p> <p>FUT = Futures, including single stock (securities) futures.</p> <p>INDX = Underlying Index for an Index Option product, such as OEX, SPX, NDX, VIX.</p> <p>MLEG = Multi-leg security, such as an option strategy or a combination of underlying and derivative (buy write for example).</p> <p>USTB = The CBOEdirect system does not differentiate the type of debt. For this reason, all debt products that serve as underlyings with CBOEdirect will be designated as Fix SecurityType[167] = "USTB" (eg. US Treasury underlying the Interest Rate products)</p> | Indicates type of security (ISITC spec). Valid values: see FIX 4.1 Specification | Order, Cancel, Replace, Execution Report, Cancel Reject |
| 198 | SecondaryOrderID | N | N | Char | Will be set to the CBOE ORS system order Id— if it is available- for orders that are routed to the CBOE trading floor. Will be provided on fill reports, cancel reports, and nothing done reports. | Assigned by the party which accepts the order. Can be used to provide the OrderID used by an exchange or executing system. | Execution Report |
| 200 | MaturityMonthYear | N | N | Month-year | If used, must be set to valid CBOEdirect Expiration Year and Month. | Month and Year of the maturity for SecurityType=FUT or SecurityType=OPT. Format: YYYYMMDD (e.g., 20020915) | Order, Cancel, Replace, Execution Report, Cancel Reject |
| 201 | PutOrCall | N | N | Int | | Indicates whether an Option is for a put or call. Valid values: 0 = Put, 1 = Call | Order, Cancel, Replace, Execution Report, Cancel Reject |
| 202 | StrikePrice | N | N | Float | | Strike Price for an Option. Valid values: 0 - 99999999.9999 (number of decimal places may vary and not limited to four) | Order, Cancel, Replace, Execution Report, Cancel Reject |
| 203 | CoveredOrUncovered | N | N | Char | CBOE users: Required for Customer Sell orders only, optional for all other orders. | Used for options. Valid values: 0 = Covered, 1 = Uncovered | Order, Replace, Execution Report |
| 204 | CustomerOrFirm | N | N | Char | <p>CBOE has the following expanded values for this field:</p> <p>0 = Customer</p> <p>1 = Firm</p> <p>2 = Broker Dealer (CBOE only)</p> <p>3 = Customer Broker Dealer (CBOE only)</p> <p>4 = Market Maker (CBOE only)</p> | Used for options when delivering the order to an execution system/exchange to specify if the order is for a customer or the firm placing the order itself. Valid values: 0 = Customer, 1 = Firm | Order, Replace, Execution Report |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|-------------------------|-----------|------------|------------------|---|--|---|
| 205 | MaturityDay | N | N | Day of the month | Not required at this time. Can be specified with the actual expiration date, however it is recommended that you leave this field blank to indicate that you want the standard expiration. The exact MaturityDay is provided on all messages sent from CBOE back to the firm. | Day of month used in conjunction with MaturityMonthYear to specify the maturity date for SecurityType=FUT or SecurityType=OPT. Valid values: 1-31 | |
| 207 | SecurityExchange | N | N | Char | If used, should be set to "W" for CBOE or "50" for OneChicago. Ignored on input. W = CBOE; 50 = OneChicago | Market used to help identify a security. Valid values: See Appendix C of FIX 4.1 Specification. | Order, Cancel, Replace, Execution Report |
| 262 | MDReqID | Y | Y | String | Will be used to track subscriptions – must be unique per request. | Unique identifier for Market Data Request | |
| 263 | SubscriptionRequestType | N | N | Char | SubscriptionRequestType indicates to the other party what type of response is expected. A snapshot request ("0") only asks for current information. A subscribe request ("1") asks for updates as the status changes. Unsubscribe ("2") will cancel a subscription. ("3") subscribe to auction. ("4") unsubscribe from auction. | Subscription Request Type Valid Values: 0 – Snapshot 1 – Snapshot + Update (Subscribe) 2 – Disable previous Snapshot+Update Request (Unsubscribe) | Security Status Request, Trading Session Status Request, Market Data Request, Quote Status Request (Non Standard) |
| 264 | MarketDepth | N | N | int | Per Standard | Depth of market for book snapshot Valid values: 0 – Full book 1 – Top of book N>1 report best N price tiers of data | |
| 265 | MDUpdateType | N | N | int | CBOE only supports 0-Full Refresh. Any other enumeration will be ignored. | Specifies the type of Market Data update. Valid values: 0 = Full Refresh 1 = Incremental Refresh | |
| 266 | AggregatedBook | N | N | Boolean | At this time CBOE does not provide aggregated book – multiple entries per side per price will be provided when available. | Specifies whether or not book entries should be aggregated. Valid values: Y = one book entry per side per price N = Multiple entries per side per price allowed (Not specified) = broker option | |
| 267 | NoMDEntryTypes | Y | Y | Int | Specifies the number of market data entries to be provided. | Number of MDEntryType fields requested. | |
| 268 | NoMDEntries | Y | Y | Int | Number of entries following in the repeating group for a Market Data message. | Number of entries in Market Data message. | |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|----------------|-----------|------------|---------------------|--|---|--------------|
| 269 | MDEntryType | Y | Y | Char | Must be the first field in this repeating group. CBOE supports the following MDEntryTypes at this time: 0-Bid 1-Offer 2-Trade 3-Index Value 4-Opening Price 5-Closing Price 7-Session High Price 8-Session Low Price | Type Market Data entry. Valid values: 0 = Bid 1 = Offer 2 = Trade 3 = Index Value 4 = Opening Price 5 = Closing Price 6 = Settlement Price 7 = Trading Session High Price 8 = Trading Session Low Price 9 = Trading Session VWAP Price | |
| 270 | MDEntryPx | Y | Y | Price | | Price of the Market Data Entry. | |
| 271 | MDEntrySize | N | N | Qty | Conditionally required if MDEntryType = Bid(0), Offer(1), or Trade(2) | Number of shares represented by the Market Data Entry. | |
| 272 | MDEntryDate | N | N | UTCDate | | Date of Market Data Entry. | |
| 273 | MDEntryTime | N | N | UTCTimeOnly | | Time of Market Data Entry. | |
| 274 | TickDirection | N | N | Char | | Direction of the "tick". Valid values: 0 = Plus Tick 1 = Zero-Plus Tick 2 = Minus Tick 3 = Zero-Minus Tick | |
| 275 | MDMkt | N | N | Exchange | "W". Market posting quote / trade. Valid values: See Appendix C of the FIX specification | Market posting quote / trade. Valid values: See Appendix C of the FIX specification | |
| 276 | QuoteCondition | N | N | MultipleValueString | Space-delimited list of conditions describing a quote. | Space-delimited list of conditions describing a quote. Valid values: A = Open / Active B = Closed / Inactive C = Exchange Best D = Consolidated Best E = Locked F = Crossed G = Depth H = Fast Trading I = Non-Firm | |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|---------------------|-----------|------------|---------------------|--|---|--------------|
| 277 | TradeCondition | N | N | MultipleValueString | Space-delimited list of conditions describing a trade | Space-delimited list of conditions describing a trade Valid values: A = Cash (only) Market B = Average Price Trade C = Cash Trade (same day clearing) D = Next Day (only) Market E = Opening / Reopening Trade Detail F = Intraday Trade Detail G = Rule 127 Trade (NYSE) H = Rule 155 Trade (Amex) I = Sold Last (late reporting) J = Next Day Trade (next day clearing) K = Opened (late report of opened trade) L = Seller M = Sold (out of sequence) N = Stopped Stock (guarantee of price but does not execute the order) | |
| 281 | MDReqRejReason | | | Char | This will state the reason for the reject of the market data request. | Reason for the rejection of a Market Data request. Valid values: 0 = Unknown symbol 1 = Duplicate MDReqID 2 = Insufficient Bandwidth 3 = Insufficient Permissions 4 = Unsupported SubscriptionRequestType 5 = Unsupported MarketDepth 6 = Unsupported MDUpdateType 7 = Unsupported AggregatedBook 8 = Unsupported MDEntryType | |
| 282 | MDEntryOriginator | N | N | String | Originator of a Market Data Entry | Originator of a Market Data | |
| 283 | LocationID | N | N | String | | Identification of a Market Maker's location | |
| 284 | DeskID | N | N | String | | Identification of a Market Maker's desk | |
| 286 | OpenCloseSettleFlag | N | N | Char | Used if MDEntryType = Opening Price(4) or Closing Price(5). Settlement Price(6) is not supported by CBOEdirect or OneChicago and can be obtained from the Options Clearing Corporation (OCC) or CBOE Financial Network (CFN). | Flag that identifies a price. Valid values: 0 = Daily Open / Close / Settlement price 1 = Session Open / Close / Settlement price 2 = Delivery Settlement price | |
| 287 | SellerDays | N | N | Int | | Specifies the number of days that may elapse before delivery of the security | |
| 288 | MDEntryBuyer | N | N | String | For optional use in reporting Trades | Buying party in a trade | |
| 289 | MDEntrySeller | N | N | String | For optional use in reporting Trades | Selling party in a trade | |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|--------------------|-----------|------------|-----------|--|---|--------------|
| 290 | MDEntryPositionNo | N | N | Int | Display position of a bid or offer, numbered from most competitive to least competitive, per market side, beginning with 1 | Display position of a bid or offer, numbered from most competitive to least competitive, per market side, beginning with 1. | |
| 291 | FinancialStatus | | | Char | | Identifies a firm's financial status. Valid values: 1 = Bankrupt | |
| 292 | CorporationAction | | | Char | | Identifies the type of Corporate Action. Valid values: A = Ex-Dividend B = Ex-Distribution C = Ex-Rights D = New E = Ex-Interest | |
| 295 | NoQuoteEntries | Y | Y | Int | The number of quotes for this Symbol (QuoteSet) that follow in this message. | | |
| 298 | QuoteCancelType | Y | Y | Int | Dictates the type of quote cancellation desired 1 = Cancel for Symbol (cancel specific product) 3 = Cancel for Underlying Symbol (cancel class) 4 = Cancel All Quotes NOTE: CBOE does not permit cancellation by Security Type QuoteCancelType[298]=2. | Identifies the type of quote cancel. Valid Values: 1 – Cancel for Symbol(s) 2 – Cancel for Security Type(s) 3 – Cancel for Underlying Symbol 4 – Cancel All Quotes | |
| 299 | QuoteEntryID | N | N | String | For optional use when this Bid, Offer, or Trade represents a quote. Uniquely identifies the quote as part of a QuoteSet. | Uniquely identifies the quote as part of a QuoteSet. | |
| 301 | QuoteResponseLevel | N | N | int | Applications can optionally support acknowledgement of quotes using this tag. This tag is used to specify the level of acknowledgement requested from the counterparty. 0 = no acknowledgement is requested 1 = requests acknowledgement of invalid or erroneous quotes 2 = requests acknowledgement of each Mass Quote message | Level of Response requested from receiver of quote messages. Valid Values: 0 – No Acknowledgement (Default) 1 – Acknowledge only negative or erroneous quotes 2 – Acknowledge each quote messages | |
| 302 | QuoteSetID | Y | Y | String | Sequential number for the Quote Set. For a given QuoteID – assumed to start at 1. Must be used if NoQuoteSets is used. | Unique ID for the Quote Set. | |
| 304 | TotQuoteEntries | Y | Y | int | Total number of quotes for the quote set across all messages. Should be the sum of all NoQuoteEntries in each message that has repeating quotes that are part of the same quote set. Required if NoQuoteEntries > 0 | Total number of quotes for the quote set across all messages. Should be the sum of all NoQuoteEntries in each message that has repeating quotes that are part of the same quote set. | |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|-----------------------------|-----------|------------|--------------|---|--|--------------|
| 305 | UnderlyingIDSource | N | N | String | | Underlying security's IDSource. Valid values: see IDSource field | |
| 306 | UnderlyingIssuer | | | String | | Underlying security's Issuer. See Issuer field for description | |
| 307 | UnderlyingSecurityDesc | | | String | | Underlying security's SecurityDesc. See SecurityDesc field for description | |
| 308 | UnderlyingSecurityExchange | | | Exchange | The exchange on which the underlying security trades. | Underlying security's SecurityExchange. Can be used to identify the underlying security. Valid values: see SecurityExchange | |
| 309 | UnderlyingSecurityID | | | String | | Underlying security's SecurityID. See SecurityID field for description | |
| 310 | UnderlyingSecurityType | N | N | String | | Underlying security's SecurityType. Valid values: see SecurityType field | |
| 311 | UnderlyingSymbol | Y | Y | String | The symbol of the underlying product. Examples: IBM, MSFT, T, OEX, DJX | Underlying security's Symbol. See Symbol field for description | |
| 312 | UnderlyingSymbolSfx | | | String | | Underlying security's SymbolSfx. See SymbolSfx field for description | |
| 313 | UnderlyingMaturityMonthYear | | | month-year | This field would only be used for debt underlyings. | Underlying security's MaturityMonthYear. See MaturityMonthYear field for description | |
| 314 | UnderlyingMaturityDay | | | day-of-month | This field would only be used for debt underlyings. | Underlying security's MaturityDay. See MaturityDay field for description | |
| 315 | UnderlyingPutOrCall | | | Int | | Underlying security's PutOrCall. See PutOrCall field for description | |
| 316 | UnderlyingStrikePrice | | | Price | | Underlying security's StrikePrice. See StrikePrice field for description | |
| 318 | UnderlyingCurrency | | | Currency | | Underlying security's Currency. See Currency field for description and valid values | |
| 319 | RatioQty | | | float | Quantity of particular leg in the Security | Quantity of a particular leg in the security. | |
| 320 | SecurityReqID | | | String | | Unique ID of a Security Definition Request. | |
| 321 | SecurityRequestType | | | Int | | Type of Security Definition Request. Valid values: 0 = Request Security identity and specifications 1 = Request Security identity for the specifications provided (Name of the security is not supplied) 2 = Request List Security Types 3 = Request List Securities (Can be qualified with Symbol, SecurityType, TradingSessionID, SecurityExchange is provided then only list Securities for the specific type) | |
| 322 | SecurityResponseID | | | Int | Identifier for the Security Definition message | Unique ID of a Security Definition message. | |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|-----------------------|-----------|------------|-----------|---|---|--------------|
| 323 | SecurityResponseType | | | Int | | Type of Security Definition message response. Valid values: 1 = Accept security proposal as is 2 = Accept security proposal with revisions as indicated in the message 3 = List of security types returned per request 4 = List of securities returned per request 5 = Reject security proposal 6 = Can not match selection criteria | |
| 324 | SecurityStatusReqID | | | Int | Must be unique, or the ID of previous Security Status Request to disable if SubscriptionRequestType = Disable previous Snapshot + Updates Request (2). | Unique ID of a Security Status Request message. | |
| 325 | UnsolicitedIndicator | | | Boolean | 'Y' if message is sent unsolicited as a result of a previous subscription request. | Indicates whether or not message is being sent as a result of a subscription request or not. Valid values: Y = Message is being sent unsolicited N = Message is being sent as a result of a prior request | |
| 326 | SecurityTradingStatus | N | N | Int | The CBOEdirect system only supports the following security trading states: 2 = Halted 17 = Open 18 = Closed 21 = Pre-Open 22 = Opening Rotation 23 = Fast | Identifies the trading status applicable to the transaction. 1 = Opening Delay 2 = Trading Halt 3 = Resume 4 = No Open/No Resume 5 = Price Indication 6 = Trading Range Indication 7 = Market Imbalance Buy 8 = Market Imbalance Sell 9 = Market On Close Imbalance Buy 10 = Market On Close Imbalance Sell 11 = (not assigned) 12 = No Market Imbalance 13 = No Market On Close Imbalance 14 = ITS Pre-Opening 15 = New Price Indication 16 = Trade Dissemination Time 17 = Ready To Trade (start of session) 18 = Not Available For Trading (end of session) 19 = Not Traded On This Market 20 = Unknown or Invalid | |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|----------------|-----------|------------|-----------|--|---|--------------|
| 327 | HaltReason | | | Char | Denotes the reason for the Opening Delay or Trading Halt. | Denotes the reason for the Opening Delay or Trading Halt. Valid values: I = Order Imbalance X = Equipment Changeover P = News Pending D = News Dissemination E = Order Influx M = Additional Information | |
| 328 | InViewOfCommon | | | Boolean | | Indicates whether or not the halt was due to Common Stock trading being halted. Valid values: Y = Halt was due to common stock being halted N = Halt was not related to a halt of the common stock | |
| 329 | DueToRelated | | | Boolean | | Indicates whether or not the halt was due to the Related Security being halted. Valid values: Y = Halt was due to related security being halted N = Halt was not related to a halt of the related security | |
| 330 | BuyVolume | | | Qty | | Number of shares bought. | |
| 331 | SellVolume | | | Qty | | Number of shares sold. | |
| 332 | HighPx | | | Price | | Represents an indication of the high end of the price range for a security prior to the open or reopen | |
| 333 | LowPx | | | Price | | Represents an indication of the low end of the price range for a security prior to the open or reopen | |
| 334 | Adjustment | | | Int | | Identifies the type of adjustment. Valid values: 1 = Cancel 2 = Error 3 = Correction | |
| 335 | TradSesReqID | | | String | Must be unique, or the ID of previous Market Data Request to disable if SubscriptionRequestType = Disable previous Snapshot + Updates Request (2). | Unique ID of a Trading Session Status message. | |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|-----------------------|-----------|------------|------------------|---|--|------------------|
| 336 | TradingSessionID | N | N | String | <p>“W_MAIN” Primary trading session for CBOE products</p> <p>“W_STOCK” CBSX trading session</p> <p>“ONE_MAIN” OneChicago futures market</p> <p>If the TradingSessionID is not specified then the default will be the primary trading session.</p> <p>“Underlying” This will be the session where market data will be available for all products that are underlying CBOEdirect traded products.</p> | <p>Identifier for Trading Session</p> <p>Can be used to represent a specific market trading session</p> <p>Values should be bi-laterally agreed to between counterparties.</p> | |
| 337 | ContraTrader | N | N | String | Optional part of repeating group. Contrabroker information is only available for members of the CBOE for CBOE products traded on the trading floor (W_MAIN) | Identifies the trader (e.g. "badge number") of the ContraBroker. | Execution Report |
| 340 | TradSesStatus | | | Int | | <p>State of the trading session.</p> <p>Valid values:</p> <p>1 = Halted</p> <p>2 = Open</p> <p>3 = Closed</p> <p>4 = Pre-Open</p> <p>5 = Pre-Close</p> | |
| 342 | TradSesOpenTime | | | UTCTimest amp | | Time of the opening of the trading session | |
| 344 | TradSesCloseTime | | | UTCTimest amp | | Closing time of the trading session | |
| 346 | NumberOfOrders | N | N | Int | In an Aggregated Book, used to show how many individual orders make up an MDEntry | Number of orders in the market. | |
| 354 | EncodedTextLen | | | Int | | Byte length of encoded (non-ASCII characters) EncodedText field. | |
| 355 | EncodedText | | | Data | | Encoded (non-ASCII characters) representation of the Text field in the encoded format specified via the MessageEncoding field. If used, the ASCII (English) representation should also be specified in the Text field. | |
| 375 | ContraBroker | N | N | String | First field in repeating group – required if NoContraBrokers > 0. Contrabroker information is only available for CBOE products traded on the trading floor (W_MAIN) | Identifies contra broker. Standard NASD market-maker mnemonic is preferred. | Execution Report |
| 378 | ExecRestatementReason | | Y | Int | <p>4 = Broker Option</p> <p>This indicates that it was the broker/markets option to reinstate the busted trade quantity to the order.</p> | | |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|----------------------|-----------|------------|-------------|---|--|------------------|
| 380 | BusinessRejectReason | | | | | Code to identify reason for a Business Message Reject message. Valid values: 0 = Other 1 = Unkown ID 2 = Unknown Security 3 = Unsupported Message Type 4 = Application not available 5 = Conditionally Required Field Missing | |
| 382 | NoContraBrokers | N | N | Int | A maximum of 8 counterparties can be reported by FIX 4.4. Contrabroker information is only available for CBOE products traded on the trading floor (W_MAIN) | The number of ContraBroker entries | Execution Report |
| 386 | NoTradingSessions | N | N | Int | Indicates the number of TradingSessionIDs specified. For FIX 4.4 a maximum of 1 trading session can be specified. | Number of TradingSessionIDs in repeating group. | |
| 387 | TotalVolumeTraded | N | N | Int | Total volume traded in this trading session for this security. | Total volume (quantity) traded. | |
| 388 | DiscretionInst | N | N | Char | Only value supported is 0 - (Related to displayed price). The DiscretionOffset will be related to the Price(44). Field should only be included when a discretionary price is to be specified. Refer to Contingency Mapping Table. | Code to identify the price a DiscretionOffset is related to and should be mathematically added to. Valid values: 0 = Related to displayed price 1 = Related to market price 2 = Related to primary price 3 = Related to local primary price 4 = Related to midpoint price 5 = Related to last trade price | Order, Replace |
| 389 | DiscretionOffset | N | N | PriceOffset | Values < 1.0 that can be added/subtracted from the limit order price for a with discretion order Refer to Contingency Mapping Table. | Amount (signed) added to the "related to" price specified via DiscretionInst. | Order, Replace |
| 393 | TotalNumSecurities | N | N | Int | | Total number of securities | |
| 394 | BidType | Y | Y | | Used for internalization orders using the New Order-List message, with the "disclosed" convention 2=Disclosed | | |
| 424 | DayOrderQty | | | Qty | | For GT (GTC and GTD) orders, the OrderQty less all shares (adjusted for stock splits) that traded on previous days DayOrderQty = OrderQty – (CumQty - DayCumQty) | |
| 425 | DayCumQty | | | Qty | | The number of shares on a GT order that have traded today | |
| 426 | DayAvgPx | | | Price | | The average price of shares on a GT order that have traded today. | |

| Tag # | Tag Name | FIX Req'd | CBOE Req'd | Data Type | CBOE Usage | Standard Definition | FIX Messages |
|-------|------------------------------|-----------|------------|--------------|---|---|----------------------------------|
| 432 | ExpireDate | N | N | LocalMktDate | For optional use when this Bid or Offer represents an order. ExpireDate and ExpireTime cannot both be specified in one Market Data Entry. | Date of order expiration (last day the order can trade), always expressed in terms of the local market date. The time at which the order expires is determined by the local market's business practices | |
| 436 | UnderlyingContractMultiplier | N | N | float | When a firm sends the CBOE a Security Definition Request to obtain all classes in a particular trading session, CBOE will publish a Security Definition message containing the Contract Size (shares per contract, or SPC) in the repeating group for each class. This value will usually = 100 unless corporate actions (stock splits, etc.) have caused it to change. | | |
| 437 | ContraTradeQty | N | N | Qty | Optional part of repeating group. Contrabroker information is only available for CBOE products traded on the trading floor (W_MAIN) | Quantity traded with the ContraBroker. | Execution Report |
| 438 | ContraTradeTime | N | N | UTCTimestamp | Optional part of repeating group. Contrabroker information is only available for CBOE products traded on the trading floor (W_MAIN) | Identifies the time of the trade with the ContraBroker. (Always expressed in UTC (Universal Time Coordinated, also known as "GMT").) | Execution Report |
| 439 | ClearingFirm | N | N | String | CMTA OCC clearing firm number | Firm that will clear the trade. Used if different from the executing firm. | Order, Replace |
| 440 | ClearingAccount | N | N | String | Q Account of market maker sub account information sent to OCC | Supplemental accounting information forwarded to clearing house / firm | Order, Replace, Execution Report |
| 442 | MultilegReportingType | N | N | char | Per Standard | Used to indicate what an Execution Report represents (e.g. used with multi-leg securities, such as option strategies, spreads, etc.) Valid Values: 1- Single Leg Security (default) 2 – Individual leg of a multi-leg security 3 – Multi-leg security | Execution Report |
| 443 | StrikeTime | N | N | UTCTimestamp | Per Standard | The time at which current market prices are used to determine the value of a basket. | |
| 444 | ListStatusText | N | N | String | Per Standard | Free format text string related to List Status. | |
| 445 | EncodedListStatusTextLen | N | N | Int | Per Standard | Byte length of encoded (non-ASCII char) ENcodedListStatusText (446) field. | |

Custom Defined Fields

CBOE wherever possible has worked with the FIX Protocol Group to adhere to the FIX protocol standard. Where CBOE requirements differed from the FIX specification, CBOE worked to have these deficiencies addressed in future versions of the FIX Protocol. CBOE registers their user defined fields. This table contains the user-defined tags that are part of the FIX 4.4 service.

Table 3 Custom Defined Tags used in the CBOE FIX 4.4 Service

| Tag # | Tag Name | DataType | CBOE Usage | FIX Messages (required=Y, not required=N) | Standard Adoption Status |
|-------|---------------------------|----------|--|---|--|
| 9302 | OrderPrice | | The starting price for the auction. This tag is part of the Quote Request message. | Quote Request | |
| 9312 | QuoteStatus | String | Status of Quote – a subset of OrdStatus[39] Booked Busted Cancelled Filled Locked (W_MAIN only) New Open Outcry Possible Resend Query Reinstated Removed Updated | Quote | Adopted FIX 4.3 |
| 9313 | QuoteRequestSubscription | int | Presence of this tag on the Quote Status Request – indicates that user wants to subscribe for Quote Requests. | Quote Status Request | Adopted FIX 4.3 via the usage of the SubscriptionRequestType field on the Quote Status Request |
| 9314 | OpenInterest | Qty | OpenInterest is not supported by CBOEdirect or OneChicago and can be obtained from the Options Clearing Corporation (OCC) or CBOE Financial Network (CFN). | Market Data – Full Refresh | Adopted FIX 4.3 as OpenInterest[|
| 9315 | MDScope | int | Indicates scope of the market data: 1-Local 2-National 3-Global | Market Data Request, Market Data – Full Refresh | |
| 9316 | LegalMarket | boolean | Indicates if the market for a product is within exchange prescribed widths | Market Data – Full Refresh for Current Market (Top of Book) | |
| 9317 | TransactionSequenceNumber | String | Used to provide sequencing information on information provided across multiple messages | Security Status | |

| Tag # | Tag Name | Data Type | CBOE Usage | FIX Messages (required=Y, not required=N) | Standard Adoption Status |
|-------|----------------------------|--------------------|--|---|--|
| 9322 | MultilegPriceIncrement | Price | Used to define the price increment for generation of a multileg instrument. The price increment is used to indicate the increment to the price of the instrument defined in the security block for the next leg of the multileg security. | c(n), d(n) | |
| 9323 | MultilegMonthIncrement | Price | Number of months to increment the next leg of a multileg instrument from an anchor leg. Used for option strategy definition. | c(n), d(n) | |
| 9324 | ClearingOptionalData | String | Contains optional data that will be passed on to trade match and will be part of clearing information sent to the OCC. | 8(n), D(n), G(n) | |
| 9433 | ExecutionInformation | String | Custom tag originally defined by SIAC for NYSE FCS reports. This field will contain the three character acronym of the broker involved in the trade on behalf of the order originator. The tag will contain "ZZZ" when the order is filled in RAES. If the order is filled in Ebook, CBOE's electronic limit order book, the tag will contain "XXL." If the trade results from automated book priority (a RAES order hitting Ebook), the tag will contain "XXB." | 8(n) | Added to FIX 4.3 Party Block as Party Role Executing System |
| 9321 | SecondaryClOrdID | String | Used when counterparties require a secondary client order id. Will be replaced by FIX 4.3 field of the same name. | 8(n), 9(n), D(n), F(n), G(n) | Added to FIX 4.3 as Tag 526 |
| 9365 | PremPriceTickBreakPoint | Price | Price at which the Premium Price Tick changes from the PremPriceTickBelow and the PremPriceTickAbove | c(n), d(n) | |
| 9366 | PremPriceTickAbove | Price | Premium Price Tick Size above the PremPriceTickBreakPoint | c(n), d(n) | |
| 9367 | PremPriceTickBelow | Price | Premium Price Tick Size Below the PremPriceTickBreakPoint | c(n), d(n) | |
| 9368 | LastBustShares | Qty | The number of shares reported as part of a trade bust | 8(n) | |
| 9369 | PriceProtectionScope | int | 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) | 8(n), D(n), G(n) | Proposed for future version of FIX (post FIX 4.3) |
| 9370 | MultiLegPositionEffects | Multi Value String | Array of open close codes for multileg orders | 8(n), D(n), G(n) | OBSOLETE with FIX 4.3 Multileg Order (MsgType=AB) LegPositionEffect (tag 564) field |
| 9371 | MultilegCoveredOrUncovered | Multi Value String | Field containing the CoveredUncovered constants for the legs of a multileg instrument. Added for FIX 4.4 complex order support. Same values as CoveredOrUncovered (tag 203) 0 – Covered, 1-Uncovered. | 8(n), D(n), G(n) | OBSOLETE with FIX 4.3 Multileg Order (MsgType=AB) LegCoveredOrUncovered(tag 565) field |

| Tag # | Tag Name | DataType | CBOE Usage | FIX Messages (required=Y, not required=N) | Standard Adoption Status |
|-------|---------------------------|----------|--|---|--|
| 9372 | MultilegStockClearingFirm | String | The Clearing firm for the stock leg of a multileg option strategy added for complex order support in FIX 4.4. 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. | 8(n), D(n), G(n) | OBSOLETE with FIX 4.3 with the Multileg Order (MsgType=AB) Nested Parties block clearing firm party role |
| 9379 | MultilegPricePerLeg | String | 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 | | |
| 9380 | StockFirmName | String | 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. 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 | String | 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 | | |
| 9382 | MatchType | Int | 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. | | |
| 9383 | AuctionType | String | CBOE sends this tag to solicit participation in an auction through the Quote Request message. Values: Order, Strategy, Internalization | | |
| 9384 | AuctionContingency | Int | CBOE sends this tag to solicit participation in an auction through the Quote Request message. Same values as cmiconstants::ContingencyTypes. 1=none, 2=AON, 3=FOK, 4=IOC | | |
| 9385 | AuctionID | String | Taken from tag 131 (QuoteReqID) in the Quote Request message. | | |
| 9433 | ExecutionInformation | String | The acronym of the broker on the floor that executed the trade or the acronym of the system where the order executed. This information is only available for CBOE products traded on the trading floor (W_MAIN) | | |
| 9463 | SubscriptionRequestType | Int | This tag would be specified in a Security Definition Request if the firm wants to subscribe to security status (product state callbacks). If not specified, the firm would be subscribed to security status by default. 0 = SNAPSHOT only 1 = SNAPSHOT + UPDATES | | |

| Tag # | Tag Name | Data Type | CBOE Usage | FIX Messages (required=Y, not required=N) | Standard Adoption Status |
|-------|-------------------|-----------|---|---|--------------------------|
| 9465 | OrderOrigin | String | <p>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".</p> <p>CBOE : ABC</p> <p>-or you may enter-</p> <p>ABC</p> <p>Linkage: Required for entering a Principal (P) Linkage order to an away market. This field must specify the valid CBOE market maker's acronym (trading badge) of the entering market maker.</p> | | |
| 9467 | EquitySession | String | 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"). | | |
| 9469 | ExtendedPriceType | Int | Used to enter Cabinet orders. 4=Cabinet | | |

| Tag # | Tag Name | DataType | CBOE Usage | FIX Messages (required=Y, not required=N) | Standard Adoption Status |
|-------|-------------------------|----------|--|---|--------------------------|
| 9730 | TradeLiquidityIndicator | | <p>This tag is used in the W_STOCK session for trade type billing indicators.</p> <ul style="list-style-type: none"> • 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. | | |
| 9743 | PIPManagementType | | 1=solicitation to participate in an auction. Sent by CBOE. | | |
| 9999 | FirmNo | | Allocate the specified quantity to the executing firm value specified in this tag. | N | |