Cboe Options Exchanges Binary Order Entry Specification

Version 2.6.4

August 7, 2018

Contents

1 Introduction

1.1 Overview

This document describes Binary Order Entry (BOE), the Cboe proprietary order entry protocol.

Where applicable, the terminology (e.g., time in force) used in this document is similar to that used by the FIX protocol to allow those familiar with FIX to more easily understand BOE. This document assumes the reader has basic knowledge of the FIX protocol.

BOE fulfills the following requirements:

- *CPU and memory efficiency.* Message encoding, decoding, and parsing are simpler to code and can be optimized to use less CPU and memory at runtime.
- *Application level simplicity.* State transitions are simple and unambiguous. They are easy to apply to a Member's representation of an order.
- *Session level simplicity.* The session level protocol (login, sequencing, replay of missed messages, logout) is simple to understand.

While Cboe has strived to preserve feature parity between FIX and BOE where possible, some features may only be available in one protocol or the other.

All binary values are in little Endian (used by Intel x86 processors), and not network byte order.

Each message is identified by a unique message type. Not all message types are used in all Cboe's trading environments globally. A listing of the supported message types is provided in 'Section 10 - List of Message Types'.

All communication is via standard TCP/IP.

1.2 Document Format

Blue highlighted sections highlight key differences between the Cboe US Options Exchanges (BZX Options Exchange, EDGX Options Exchange, and C2 Options Exchange).

1.3 Hours of Operation

All times noted are Eastern time zone (ET) based.

See the respective exchange websites for holiday schedules.

Cboe Options Exchanges support a Pre-Market Queuing Session that allows orders to be entered and queued prior to the start of the Regular Trading Session.

For more information on the Cboe Opening Process, please refer to the Cboe Opening Process Specification.

Cboe Options Exchanges do not support a closing auction, but do support Extended Trading for options on select products. All orders remaining after the Regular Trading Session that are not eligible for Extended Trading will be cancelled automatically. All orders remaining after the Extended session will be cancelled automatically. Members will receive `Order Cancelled` messages for all automatically cancelled orders.

Session	Start Time	End Time
Pre-market Queuing Session	7:30am	9:30am
Regular Trading Session	9:30am	4:00pm
Extended Trading Session	4:00pm	4:15pm

1.4 Data Types

The following data types are used by BOE. The size of some data types varies by message. All data types have default values of binary zero, in both Member to Cboe and Cboe to Member contexts.

- *Binary:* Little Endian byte order, unsigned binary value. The number of bytes used depends on the context.
  - One byte: `FE` = 254
  - Four bytes: `64 00 00 00` = 100
- *Signed Binary:* Little Endian byte order, signed two's complement, binary value. The number of bytes used depends on the context.
  - One byte: `DF` = -33
  - Four bytes: `64 00 00 00` = +100
- *Binary Price:* Little Endian byte order value, signed two's complement, eight bytes in size, with four implied decimal places. So, if the value is -123,400, the actual value taking into account implied decimal places is -12.34.
  - `08 E2 01 00 00 00 00 00` = 123,400/10,000 = 12.34
  - `F8 1D FE FF FF FF FF FF` = -123,400/10,000 = -12.34
- *Short Binary Price:* Little Endian byte order value, signed two's complement, four bytes in size, with four implied decimal places. So, if the value is 12,300, the actual value taking into account implied decimal places is 1:23.
  - `0C 30 00 00` = 12,300/10,000 = 1.34
- *Signed Binary Fee:* Little Endian byte order value, signed two's complement, eight bytes in size, with five implied decimal places. So, the value is -123,000 is -1.23 after taking account for the five implied decimal places.
  - `88 1F FE FF FF FF FF FF` = 123,000/100,000 = -1.23
- *Alpha:* Uppercase letters (A-Z) and lowercase letters (a-z) only. ASCII NUL (0x00) filled on the right, if necessary. The number of bytes used depends on the context.
- *Alphanumeric:* Uppercase letters (A-Z), lowercase letters (a-z) and numbers (0-9) only. ASCII NUL (0x00) filled on the right, if necessary.
- *Text:* Printable ASCII characters only. ASCII NUL (0x00) filled on the right, if necessary.
- *DateTime:* 8 bytes. The date and time, in UTC, represented as nanoseconds past the UNIX epoch (00:00:00 UTC on 1 January 1970). The nanoseconds portion is currently ignored and treated as 0 (i.e. the times are only accurate to microseconds) on input, and will always be set to 0 by Cboe in outgoing messages. However, Cboe may begin populating the nanoseconds portion at any time without warning.

  For example: 1,294,909,373,757,324,000 = 2011-01-13 09:02:53.757324 UTC.
- *Date:* Little Endian byte order, unsigned binary value, 4 bytes in size. The YYYYMMDD expressed as an integer.

1.5 Optional Fields and Bit fields

Some messages such as `New Order` and `Modify Order` have a number of optional fields. A count and number of bitfields in the message specify which optional fields will be present at the end of the message. If a bit is set, the field will be present. Fields are appended to the end of the message. There is no implicit framing between the optional fields. In order to decode the optional fields, they must be appended in a particular order to the end of the message. The fields of the first bitfield are appended first, lowest order bit first. Next, the fields of the next bitfield are appended, lowest order bit first. This continues for all bitfields. While certain reserved bits within a defined bitfield are used within another Cboe market and will be ignored, bits that are reserved for future expansion must be set to 0 when noted in the bitfield description.

The size, data type, and values for each field are described in 'Section 7 – List of Optional Fields'.

Note that the set of optional fields returned for each Cboe to Member message type is determined at session login (using the `Login Request` message); hence, the exact size and layout of each message received by the client application can be known in advance. Any requested optional field which is irrelevant in a particular context will still be present in the returned message, but with all bytes set to binary zero (0x00).

Each return message from Cboe to Member indicates the optional fields which are present, even though the Member indicated during login which optional fields are to be sent. The reason for the inclusion (and duplication) is so that each message can be interpreted on its own, without having to find the corresponding login request or response to know which optional fields are present. So, for example, in a log file, decoding a message requires only that single message.

Example messages are shown with each message type which should help to make this concept clear.

1.6 Protocol Features

1.6.1 Complex Instruments and Signed Prices (EDGX and C2 only)

All price fields in the BOE protocol are signed values capable of accommodating complex instruments that can be negative (See Data Types) for a description and an example of using the Binary Price type with a negative price). For an example of the use of the Binary Price type with negative price values in an application message, see the example BOE message in `New Complex Order`.

1.6.2 Done For Day Restatements

Good 'Til Cancel ("GTC") and Good 'Til Day ("GTD") orders can result in order persisting between sessions. The Cboe BOE protocol provides a mechanism for clients to request end-of-day restatement of GTC/GTD orders that will be persisted to the next trading session. See Section 'Section 10 – Port Attributes' for information on available port attributes, including Done For Day Restatements.

When enabled, Done For Day Restatement messages are sent to connected clients after the trading session ends, at 4:00 ET (4:15 for select ETF's) and prior to the trading session disconnecting at 4:45 ET, for each order that will persist to the next trading session. Any time prior to the 4:45 ET cutoff, customers may send Order Cancel Request messages for any open GTC and GTD orders. All other order message types received after the market closes at 4:00 ET (4:15 ET for select ETF's) will be rejected.

Done For Day Restatements are represented using `Order Acknowledgement` messages with the following optional attributes set;

- *BaseLiquidityIndicator* = A (Added Liquidity), bitfield 5, bit position 7
- *SubLiquidityIndicator* = D (Done For Day), bitfield 7, bit position 1

To receive Done For Day Restatements, the Done For Day Restatement port attribute must be set (contact Cboe Trade Desk), and customers **must** register to receive *BaseLiquidityIndicator* and *SubLiquidityIndicator* optional fields on `Order Acknowledgement` messages via the `Logon Request` message (See 'Section 3.1.1 – Login Request' for details on registering to receive optional fields on a per-message basis). If the Done For Day Restatement port attribute is set and the bitfield Logon Message registration for the `Order Acknowledgement` message does not include but *BaseLiquidityIndicator* and *SubLiquidityIndicator*, the logon attempt will fail.

1.6.3 Carried Order Restatements

Good 'Til Cancel ("GTC") and Good 'Til Day ("GTD") orders can result in orders persisting between sessions. The Cboe BOE protocol provides a mechanism for clients to request restatement of orders that have been carried forward from the previous business day trading session. See 'Section 11 – Port Attributes' for information on available port attributes, including 'Carried Order Restatements'.

When enabled, Carried Order Restatements are sent to connected clients for each product on the Options Exchange for which orders have been carried forward from the previous business day trading session. Carried Order Restatements are sent after connection establishment and before regular trading activity messages on a per-product basis.

Carried Order Restatements are represented using `Order Acknowledgement` messages with the following optional attributes set;

- *BaseLiquidityIndicator* = A (Added Liquidity), bitfield 5, bit position 7
- *SubLiquidityIndicator* = C (Carried), bitfield 7, bit position 1

To receive Carried Order Restatements, the Carried Order Restatement port attribute must be set (contact CFE Trade Desk), and customers **must** register to receive *BaseLiquidityIndicator* and *SubLiquidityIndicator* optional fields on `Order Acknowledgement` messages via the `Logon Request` message (See 'Section 3.1.1 – Login Request' for details on registering to receive optional fields on a per-message basis). If the Carried Order Restatement port attribute is set and the bitfield Logon Message registration for the Order Acknowledgement message does not include but *BaseLiquidityIndicator* and *SubLiquidityIndicator*, the logon attempt will fail.

1.6.4 Display Indicator Features

Display-Price Sliding ***(BZX Only)***
If the original limit price of the unexecuted remainder of a day order does not lock or cross the NBBO then Cboe works the order at the original limit price while displayed at the nearest permissible quoting increment. If the original limit price does lock or cross the NBBO then Cboe makes available Display-Price Sliding.

Display-Price Sliding adjusts the original limit price on entry to the locking price of the NBBO. It will be ranked and worked at a price locking the NBBO but will temporarily adjust the displayed price to the nearest permissible quoting increment. When the NBBO widens, the display price will be readjusted to the adjusted limit price. The display price may be temporarily less aggressive than the adjusted limit price or working price.

Multiple Display-Price Sliding does not permanently adjust the original limit price on entry, but allows for Display-Price slid orders to continue to have their display **and** working prices adjusted towards their original limit price based on changes to the prevailing NBBO.

Contra-side Post Only orders that are received when a Display-Price Slid order is working at a locking price with the NBBO will not result in a reject of a contra-side Post Only order but will instead result in the working price of the Display-Price Slid order to be repriced to one penny away from the locking price.

Price Adjust ***(BZX, EDGX and C2)***
If the limit price of an order does not lock or cross the NBBO, then the order will be ranked and displayed at the nearest permissible quoting increment.

If the limit price of a Price Adjust eligible order locks or crosses the NBBO, the limit price will be adjusted on entry to the locking price of the NBBO, while the displayed price and ranked price will be temporarily adjusted to the nearest permissible quoting increment. Price Adjust orders will never be ranked at the locking price or at a non-displayable price increment. If the NBBO widens, the displayed price and ranked price will be readjusted to the adjusted limit price.

The limit price of a Multiple Price Adjust order will not be permanently adjusted on entry if the limit price crosses the NBBO. The displayed price and ranked price will be the nearest permissible quoting increment and will be adjusted towards the original limit price based on changes in the prevailing NBBO.

NoRescrapeAtLimit ***(BZX Only)***
Applicable only to fully routable IOC orders (9303=R **and** 59=3). After walking the price down to the limit, there will be no final scrape at Cboe and the cancel code will state "X: Expired" rather than "N: No Liquidity".

2 Session

2.1 Message Headers

Each message has a ten byte header. The two initial *StartOfMessage* bytes are present to aid in message reassembly for network capture purposes. The *MatchingUnit* field is only populated on sequenced, non-session level messages sent from Cboe to the Member. Messages from Member to Cboe and all session level messages must always set this value to 0.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	Message type.
MatchingUnit	5	1	Binary	The matching unit which created this message. Matching units in BOE correspond to matching units on Multicast PITCH. **For session level traffic, the unit is set to 0.** **For messages from Member to Cboe, the unit must be 0.**
SequenceNumber	6	4	Binary	The sequence number for this message. Messages from Cboe to Member are sequenced distinctly per matching unit. Messages from Member to Cboe are sequenced across all matching units with a single sequence stream. Member can optionally send a 0 sequence number on all messages from Member to Cboe. Cboe highly recommends that Members send sequence number on all inbound messages.

2.2 Login, Replay and Sequencing

Session level messages, both inbound (Member to Cboe) and outbound (Cboe to Member) are unsequenced.

Inbound (Member to Cboe) application messages are sequenced. Upon reconnection, Cboe informs the Member of the last processed sequence number; the Member may choose to resend any messages with sequence numbers greater than this value. A gap forward in the Member's incoming sequence number is permitted at any time and is ignored by Cboe. Gaps backward in sequence number (including the same sequence number used twice) are never permitted and will always result in a `Logout` message being sent and the connection being dropped.

Most (but not all) outbound (Cboe to Member) application messages are monotonically sequenced per matching unit. Each message's documentation will indicate whether it is sequenced or unsequenced. While matching units on BOE correspond directly to matching units on Multicast PITCH, sequence numbers do not.

Upon reconnection, a Member sends the last received sequence number per matching unit in a `Login Request` message. Cboe will respond with any missed messages. However, when the `Login Request` *NoUnspeciedUnitReplay* flag is enabled, Cboe will exclude messages from unspecified matching units during replay. Cboe will send a `Replay Complete` message when replay is finished. If there are no messages to replay, a `Replay Complete` message will be sent immediately after a `Login Response` message. Cboe will reject all orders during replay.

Assuming a Member has requested replay messages using a properly formatted `Login Request` after a disconnect, any unacknowledged orders remaining with the Member after the `Replay Complete` message is received should be assumed to be unknown to Cboe.

Unsequenced messages will not be included during replay.

A session is identified by the username and session sub-identifier (both supplied by Cboe). Only one concurrent connection per username and session sub-identifier is permitted.

If a login is rejected, an appropriate `Login Response` message will be sent and the connection will be terminated.

2.3 Sequence Reset

A reset sequence operation is not available for Binary Order Entry. However, a Member can send a `Login Request` message with *NoUnspecifiedUnitReplay* field enabled, and *NumberOfUnits* field set to zero. Then, upon receiving a `Login Response` message from Cboe, the Member can use the field *LastReceivedSequenceNumber* as the sequence starting point for sending future messages.

2.4 Heartbeats

`Client Heartbeat` messages are sent from Member to Cboe and `Server Heartbeat` messages are sent from Cboe to Member if no other data has been sent in that direction for one second. Like other session level messages, heartbeats from Cboe to the Member do not increment the sequence number. If Cboe receives no inbound data or heartbeats for five seconds, a `Logout` message will be sent and the connection will be terminated. **Members are encouraged to have a one second heartbeat interval and to perform similar connection staleness logic.**

2.5 Logging Out

To gracefully log out of a session, a `Logout Request` message should be sent by the Member. Cboe will finish sending any queued data for that port and will then respond with its own `Logout` message and close the connection. After receipt of a `Logout Request` message, Cboe will ignore all other inbound (Member to Cboe) messages except for `Client Heartbeat`.

3 Session Messages

3.1 Member to Cboe

3.1.1 Login Request

A `Login Request` message must be sent as the first message upon connection.

A number of repeating parameter groups, some of which may be required, are sent at the end of the message. Ordering of parameter groups is not important. New parameter groups may be added in the future with no notice.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x37`
MatchingUnit	5	1	Binary	Always 0 for inbound (Member to Cboe) messages.
SequenceNumber	6	4	Binary	Always 0 for session level messages.
SessionSubID	10	4	Alphanumeric	Session Sub ID supplied by Cboe.
Username	14	4	Alphanumeric	Username supplied by Cboe.
Password	18	10	Alphanumeric	Password supplied by Cboe.
NumberOfParam Groups	28	1	Binary	A number, n (possibly 0), of parameter groups to follow.
ParamGroup$_1$				First parameter group.
…				
ParamGroup$_n$				Last parameter group.

Unit Sequences Parameter Group

This parameter group includes the last consumed sequence number per matching unit received by the Member. Cboe uses these sequence numbers to determine what outbound (Cboe to Member) traffic, if any, was missed by the Member. If this parameter group is not sent, it's assumed the Member has not received any messages (e.g., start of day).

The Member does not need to include a sequence number for a unit if they have never received messages from it. For example, if the Member has received responses from units 1, 3, and 4, the `Login Request` message need not include unit 2. If the Member wishes to send a value for unit 2 anyway, 0 would be the only allowed value.

Only one instance of this parameter group may be included.

Field	Offset	Length	Data Type	Description
ParamGroupLength	0	2	Binary	Number of bytes for the parameter group, including this field.
ParamGroupType	2	1	Binary	`0x80`
NoUnspecified UnitReplay	3	1	Binary	Flag indicating whether to replay missed outgoing (Cboe to Member) messages for unspecified units. `0x00` = False (Replay Unspecified Units) `0x01` = True (Suppress Unspecified Units Replay)

NumberOfUnits	4	1	Binary	A number, n (possibly 0), of unit/sequence pairs to follow, one per unit from which the Member has received messages.
UnitNumber $_1$		1	Binary	A unit number.
UnitSequence$_1$		4	Binary	Last received sequence number for the unit.
…				
UnitNumber $_n$		1	Binary	A unit number.
UnitSequence$_n$		4	Binary	Last received sequence number for the unit.

Return Bitfields Parameter Group

This parameter group, which may be repeated, indicates which attributes of a message will be returned by Cboe for the remainder of the session. This allows Members to tailor the echoed results to the needs of their system without paying for bandwidth or processing they do not need.

Listing of the return bitfields which are permitted per message is contained in 'Section 7 – Return Bitfields per Message'.

Field	Offset	Length	Data Type	Description
ParamGroupLength	0	2	Binary	Number of bytes for the parameter group, including this field.
ParamGroupType	2	1	Binary	`0x81`
MessageType	3	1	Binary	Return message type for which the bitfields are being specified (e.g., 0x25 for an `Order Acknowledgment` message).
NumberOfReturn Bitfields	4	1	Binary	Number of bitfields to follow.
ReturnBitfield$_1$	5	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield$_n$		1	Binary	Last bit field.

Example Login Request Message:

Note this example is for illustrative purposes only. Actual login messages will contain specification of return bitfields for a larger set messages and each return bitfield specification will be complete whereas the example below is only an illustration for purposes of demonstrating the construction of the `Login Request` message.

Field Name	Hexadecimal	Notes
StartOfMessage	`BA BA`	Start of message bytes.
MessageLength	`3D 00`	61 bytes
MessageType	`37`	`Login Request`
MatchingUnit	`00`	Always 0 for inbound messages
SequenceNumber	`00 00 00 00`	Always 0 for session level messages
SessionSubID	`30 30 30 31`	0001
Username	`54 45 53 54`	`TEST`
Password	`54 45 53 54 49 4E 47 00 00 00`	`TESTING`
NumberOfParam Groups	`03`	3 parameter groups
ParamGroupLength	`0E 00`	15 bytes for this parameter group
ParamGroupType	`80`	`0x80` = Unit Sequences
NoUnspecified UnitReplay	`01`	True (replay only specified units)
NumberOfUnits	`02`	Two unit/sequence pairs to follow;
UnitNumber$_1$	`01`	Unit 1
UnitSequence$_1$	`4A BB 01 00`	Last received sequence of 113,482
UnitNumber $_2$	`02`	Unit 2
UnitSequence$_2$	`00 00 00 00`	Last received sequence of 0
ParamGroupLength	`08 00`	8 bytes for this parameter group
ParamGroupType	`81`	`0x81` = Return Bitfields
MessageType	`25`	`0x25` = `Order Acknowledgment`
NumberOfReturn Bitfields	`03`	3 bitfields to follow
ReturnBitfield$_1$	`00`	No bitfields from byte 1
ReturnBitfield$_2$	`41`	*Symbol, Capacity*
ReturnBitfield$_3$	`05`	*Account, ClearingAccount*
ParamGroupLength	`0B 00`	11 bytes for this parameter group
ParamGroupType	`81`	`0x81` = Return Bitfields
MessageType	`2C`	`0x2C` = `Order Execution`
NumberOfReturn Bitfields	`06`	6 bitfields to follow
ReturnBitfield$_1$	`00`	No bitfields from byte 1
ReturnBitfield$_2$	`41`	*Symbol, Capacity*
ReturnBitfield$_3$	`07`	*Account, ClearingFirm, ClearingAccount*
ReturnBitfield$_4$	`00`	No bitfields from byte 4
ReturnBitfield$_5$	`40`	*BaseLiquidityIndicator*
ReturnBitfield$_6$	`00`	No bitfields from byte 6

3.1.2 Logout Request

To end the session, the Member should send a `Logout Request` message. Cboe will finish sending any queued data and finally respond with a `Logout` message and close the connection.

A Member may simply close the connection without logging out, but may lose any queued messages by doing so.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x02`
MatchingUnit	5	1	Binary	Always 0 for inbound (Member to Cboe) messages.
SequenceNumber	6	4	Binary	Always 0 for session level messages.

Example Logout Request Message:

Field Name	Hexadecimal	Notes
StartOfMessage	`BA BA`	Start of message bytes.
MessageLength	`08 00`	8 bytes
MessageType	`02`	`Logout Request`
MatchingUnit	`00`	Always 0 for inbound messages
SequenceNumber	`00 00 00 00`	Always 0 for session level messages

3.1.3 Client Heartbeat

See 'Section 2.4 – Heartbeats' for more information about heartbeats and the session level protocol.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x03`
MatchingUnit	5	1	Binary	Always 0 for inbound (Member to Cboe) messages.
SequenceNumber	6	4	Binary	Always 0 for session level messages.

Example Client Heartbeat Message:

Field Name	Hexadecimal	Notes
StartOfMessage	`BA BA`	Start of message bytes.
MessageLength	`08 00`	8 bytes
MessageType	`03`	`Client Heartbeat`
MatchingUnit	`00`	Always 0 for inbound messages
SequenceNumber	`00 00 00 00`	Always 0 for session level messages

3.2 Cboe to Member

3.2.1 Login Response

A `Login Response` message is sent in response to a `Login Request` message. On a successful login, the *LoginResponseStatus* will be set to 'A'. On a failed login, *LoginResponseStatus* will be set to a value other than 'A', and *LoginResponseText* will be set to an appropriate failure description.

Cboe will verify Return Bitfields at login time. If the Return Bitfields in a Return Bitfields Parameter Group are invalid, *LoginResponseStatus* will be set to F, and *LoginResponseText* will include a description of which byte and bit are invalid. This is done to ensure that reserved fields are not used, and only options that apply to the local market are set. See 'Section 6 – Return Bitfields Per Message' for additional information.

Note that two sets of sequence numbers are available on the `Login Response`. The set of sequence numbers in the body are the actual Cboe to Member sequence numbers indicating the highest sequence numbers available per matching unit. If specified during login, the Unit Sequences Parameter Group will also be returned which is an echo of the sequence numbers the Member presented during login as the highest received. If these are different, it indicates a gap which will be filled by Cboe.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA.`
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x24`
MatchingUnit	5	1	Binary	Always 0 for session level messages.
SequenceNumber	6	4	Binary	Always 0 for session level messages.
LoginResponseStatus	10	1	Alphanumeric	Accepted, or the reason for the rejection. A = Login Accepted N = Not authorized (invalid sername/password) D = Session is disabled B = Session in use S = Invalid session Q = Sequence ahead in Login message I = Invalid unit given in Login message F = Invalid return bit field in login message M = Invalid Login Request message structure
LoginResponseText	11	60	Text	Human-readable text with additional information about the reason for rejection. ASCII NUL (0x00) filled on the right, if necessary.
NoUnspecified UnitReplay	71	1	Binary	Echoed back from the original `Login Request` message.
LastReceived SequenceNumber	72	4	Binary	Last inbound (Member to Cboe) message sequence number processed by Cboe.
NumberOfUnits	76	1	Binary	A number, n, of unit/sequence pairs to follow, one per unit. A pair for every unit will be sent, even if no messages have been sent to this port today. For unsuccessful logins, this will be 0.
UnitNumber $_1$		1	Binary	A unit number.
UnitSequence$_1$		4	Binary	Highest available Cboe to Member sequence number for the unit.
…				
UnitNumber $_n$		1	Binary	A unit number.

UnitSequence$_n$		4	Binary	Highest available Cboe to Member sequence number for the unit.
NumberOfParam Groups		1	Binary	Echoed back from the original `Login Request` message.
ParamGroup$_1$				Echoed back from the original `Login Request message`.
…				
ParamGroup$_n$				Echoed back from the original `Login Request` message.

Example Login Response Message:

Field Name	**Hexadecimal**	**Notes**
StartOfMessage	`BA BA`	Start of message bytes.
MessageLength	`88 00`	136 bytes
MessageType	`24`	`Login Response`
MatchingUnit	`00`	Always 0 for session messages
SequenceNumber	`00 00 00 00`	Always 0 for session level messages
LoginResponseStatus	`41`	A = Login Accepted
LoginResponseText	`41 63 63 65 70 74 65 64 00 00`	`Accepted`
	`00 00 00 00 00 00 00 00 00 00`	(padding)
	`00 00 00 00 00 00 00 00 00 00`	(padding)
	`00 00 00 00 00 00 00 00 00 00`	(padding)
	`00 00 00 00 00 00 00 00 00 00`	(padding)
	`00 00 00 00 00 00 00 00 00 00`	(padding)
NoUnspecified UnitReplay	`01`	True (replay only specified units)
Last Received Sequence Number	`54 4A 02 00`	Last sequence Cboe received of 150,100
NumberOfUnits	`04`	Four unit/sequence pairs to follow;
UnitNumber 1	`01`	Unit 1
UnitSequence1	`4A BB 01 00`	Actual last sequence of 113,482
UnitNumber 2	`02`	Unit 2
UnitSequence2	`00 00 00 00`	Actual last sequence of 0
UnitNumber 3	`02`	Unit 3
UnitSequence3	`00 00 00 00`	Actual last sequence of 0
UnitNumber 4	`02`	Unit 4
UnitSequence4	`79 A1 00 00`	Actual last sequence of 41,337
NumberOfParam Groups	`03`	3 parameter groups
ParamGroupLength	`14 00`	20 bytes for this parameter group
ParamGroupType	`80`	`0x80` = Unit Sequences
NoUnspecified UnitReplay	`01`	True (replay unspecified units)
NumberOfUnits	`03`	Three unit/sequence pairs to follow;
UnitNumber 1	`01`	Unit 1
UnitSequence1	`4A BB 01 00`	Last received sequence of 113,482
UnitNumber 2	`02`	Unit 2
UnitSequence2	`00 00 00 00`	Last received sequence of 0
UnitNumber 3	`04`	Unit 4
UnitSequence3	`79 A1 00 00`	Last received sequence of 41,337
ParamGroupLength	`08 00`	8 bytes for this parameter group
ParamGroupType	`81`	0x81 = Return Bitfields

MessageType	25	0x25 = Order Acknowledgment
NumberOfReturn Bitfields	03	3 bitfields to follow
ReturnBitfield1	00	No bitfields from byte 1
ReturnBitfield2	41	*Symbol, Capacity*
ReturnBitfield3	05	*Account, ClearingAccount*
ParamGroupLength	0C 00	12 bytes for this parameter group
ParamGroupType	81	0x81 = Return Bitfields
MessageType	2C	0x2C = Order Execution
NumberOfReturn Bitfields	07	7 bitfields to follow
ReturnBitfield1	00	No bitfields from byte 1
ReturnBitfield2	41	*Symbol, Capacity*
ReturnBitfield3	07	*Account, ClearingFirm, ClearingAccount*
ReturnBitfield4	00	No bitfields from byte 4
ReturnBitfield5	40	*BaseLiquidityIndicator*
ReturnBitfield6	00	No bitfields from byte 6
ReturnBitfield7	01	*SubLiquidityIndicator*

3.2.2 Logout

A Logout is usually sent in response to a Logout Request. Any queued data is transmitted, a Logout is sent, and Cboe will close the connection. However, a Logout may also be sent if the Member violates the protocol specification (e.g., by moving backwards in sequence number).

The Logout contains the last transmitted sequence number for each unit, allowing the Member to check that their last received sequence number matches.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be 0xBA 0xBA.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	0x08
MatchingUnit	5	1	Binary	Always 0 for session level messages.
SequenceNumber	6	4	Binary	Always 0 for session level messages.
LogoutReason	10	1	Alphanumeric	The reason why the Logout message was sent. U = User Requested E = End of Day A = Administrative ! = Protocol Violation
LogoutReasonText	11	60	Text	Human-readable text with additional information about the reason for logout. Particularly useful if *LogoutReason* = ! (Protocol Violation).
LastReceived SequenceNumber	71	4	Binary	Last inbound (Member to Cboe) message sequence number processed by Cboe.
NumberOfUnits	75	1	Binary	A number, *n* (possibly 0), of unit/sequence pairs to follow, one per unit from which the client has received messages.
UnitNumber $_1$		1	Binary	A unit number.
UnitSequence $_1$		4	Binary	Highest available sequence number for the unit.
…				
UnitNumber $_n$		1	Binary	A unit number.
UnitSequence $_n$		4	Binary	Highest available sequence number for the unit.

Example Logout Response Message:

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes.
MessageLength	55 00	85 bytes
MessageType	08	Logout
MatchingUnit	00	Always 0 for session level messages
SequenceNumber	00 00 00 00	Always 0 for session level messages
LogoutReason	55	U = User Requested
LogoutReasonText	55 73 65 72 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	User
LastReceived SequenceNumber	54 5A 02 00	Last Cboe received sequence of 150,100
NumberOfUnits	02	Two unit/sequence pairs to follow;
UnitNumber $_1$	01	Unit 1
UnitSequence $_1$	4A BB 01 00	Last sent sequence of 113,482
UnitNumber $_2$	02	Unit 2
UnitSequence $_2$	00 00 00 00	Last sent sequence of 0

3.2.3 Server Heartbeat

See 'Section 2.4 – Heartbeats' for more information about heartbeats and the session level protocol.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be 0xBA 0xBA.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	0x09
MatchingUnit	5	1	Binary	Always 0 for session level messages.
SequenceNumber	6	4	Binary	Always 0 for session level messages.

Example Server Heartbeat Message:

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes.
MessageLength	08 00	8 bytes
MessageType	09	Server Heartbeat
MatchingUnit	00	Always 0 for inbound messages
SequenceNumber	00 00 00 00	Always 0 for session level messages

3.2.4 Replay Complete

See ‘Section 2.2 – Login, Replay and Sequencing’ for more information on Login, sequencing and replay.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be 0xBA 0xBA.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	0x13
MatchingUnit	5	1	Binary	Always 0 for session level messages.
SequenceNumber	6	4	Binary	Always 0 for session level messages.

Example Replay Complete Message:

Field Name	**Hexadecimal**	**Notes**
StartOfMessage	BA BA	Start of message bytes.
MessageLength	08 00	8 bytes
MessageType	13	Replay Complete
MatchingUnit	00	Always 0 for inbound messages
SequenceNumber	00 00 00 00	Always 0 for session level messages

4 Application Messages

4.1 Member to Cboe

4.1.1 New Order

A `New Order` message consists of a number of required fields followed by a number of optional fields. The optional fields used are specified by setting bits in the *NewOrderBitfields*. Fields must be appended at the end of the message, starting with the lowest order enabled bit in the first bit field first.

Permitted input optional fields are described in 'Section 5.1 – New Order'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x38`
MatchingUnit	5	1	Binary	Always 0 for inbound (Member to Cboe) messages.
SequenceNumber	6	4	Binary	The sequence number for this message.
ClOrdID	10	20	Text	Corresponds to *ClOrdID* (11) in Cboe FIX. ID chosen by the client. Characters in the ASCII range 33-126 are allowed, except for comma, semicolon, and pipe. If the *ClOrdID* matches a live order, the order will be rejected as duplicate. Note: Cboe only enforces uniqueness of *ClOrdID* values among currently live orders, which includes long-lived, persisting GTC/GTD orders. However, we strongly recommend that you keep your *ClOrdID* values unique.
Side	30	1	Alphanumeric	Corresponds to *Side* (54) in Cboe FIX. `1` = Buy `2` = Sell
OrderQty	31	4	Binary	Corresponds to *OrderQty* (38) in Cboe FIX. Order quantity. System limit is 999,999 contracts.
NumberOf NewOrder Bitfields	35	1	Binary	Bitfield identifying which bitfields are set. Field values must be appended to the end of the message.
NewOrderBitfield^1	36	1	Binary	Bitfield identifying fields to follow.
….				
NewOrderBitfield^n		1	Binary	Last bitfield.
Optional fields. . .				

Required Order Attributes:

The following are required to be sent on new orders:

- Some form of symbology (see **Symbology** below);
- *Price* (limit orders) or *Price* and/or *OrdType* (limit order market orders); and,
- *Capacity*;

All price fields (*Price, StopPx*) must be entered as non-negative values.

All other values have defaults. See the table in **List of Options Fields** for additional information about each optional field, including its default value.

Symbology:

For additional information, refer to the Cboe US Equity and Options Symbology Reference.

Example New Order Message:

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes.
MessageLength	59 00	89 bytes
MessageType	38	New Order
MatchingUnit	00	Always 0 for inbound messages
SequenceNumber	64 00 00 00	Sequence number 100
ClOrdID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123
Side	31	Buy
OrderQty	64 00 00 00	100 contracts
NumberOfNewOrder Bitfields	04	Four bitfields to follow
NewOrderBitfield1	04	*Price*
NewOrderBitfield2	C1	*Symbol, Capacity, RoutingInst*
NewOrderBitfield3	01	*Account*
NewOrderBitfield4	17	*MaturityDate, StrikePrice, PutOrCall, OpenClose*
Price	70 17 00 00 00 00 00 00	*0.60*
Symbol	4D 53 46 54 00 00 00 00	MSFT
Capacity	43	C = Customer
RoutingInst	52 00 00 00	R = Routable
Account	44 45 46 47 00 00 00 00 00 00 00 00 00 00 00 00	DEFG
MaturityDate	EF DB 32 01	2011-03-19
StrikePrice	98 AB 02 00 00 00 00 00	17.50
PutOrCall	31	1 = Call
OpenClose	4F	O = Open

4.1.2 New Order Cross (EDGX Only)

A New Order Cross message contains the details for both the agency (initiating) and contra side(s) of a cross order (such as a BAM order). The message consists of a number of required fields including *Symbol*, *Price*, *OrderQty*, and relevant clearing information for all parties, as well as a number of optional fields.

The first order in the list is the agency order, while the rest are contra side responses. There is a maximum of ten (10) contra-parties that can be supplied with the order, for a total of eleven (11) repeating groups, as described below.

In each repeating group, the *Side*, *AllocQty*, *ClOrdID*, *Capacity*, *OpenClose*, and *ClearingFirm* are always required. Beyond that, the bits in the *NewOrderCrossBitfields* control which fields are expected. Any fields that are specified in *NewOrderCrossBitfields* that appear in the repeating groups should not be supplied in the optional fields that come after the repeating groups.

Permitted input optional fields are described in 'Section 5.2 – New Order Cross'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x41`
MatchingUnit	5	1	Binary	Always 0 for inbound (Member to Cboe) messages.
SequenceNumber	6	4	Binary	The sequence number for this message.
CrossID	10	20	Text	Corresponds to *CrossID* (548) in Cboe FIX. Day-unique identier for the cross order chosen by the client. Characters in the ASCII range 33-126 are allowed, except for comma, semicolon, and pipe.
CrossType	30	1	Alphanumeric	Corresponds to *CrossType* (549) in Cboe FIX. Type of auction order being submitted. This indicates the type of auction that will be initiated upon order entry. 1 = Cboe Auction Mechanism 2 = Qualied Contingent Cross
CrossPrioritization	31	1	Alphanumeric	Corresponds to *CrossPrioritization* (550) in Cboe FIX. Indicates which side of the cross order will be prioritized for execution. This identies the Agency side. 1 = Buy 2 = Sell
Price	32	8	Binary Price	Corresponds to *Price* (44) in Cboe FIX. Auction Price. Must be non-negative.
OrderQty	40	4	Binary	Corresponds to *OrderQty* (38) in Cboe FIX. Order quantity. System limit is 999,999 contracts.
NumberOf NewOrderCross Bitfields	44	1	Binary	Bitfield identifying which bitfields are set
NewOrderCross Bitfield^1	45	1	Binary	Bitfield identifying fields to follow.
….				
NewOrderCross Bitfield^n		1	*Binary*	*Last bitfield.*
GroupCnt		2	Binary	Number of order allocations represented by repeating groups included in this cross order. Must be at least 2 (One agency and one contra), and no more than 11.
Repeating Groups of…				
Side		1	Alphanumeric	Corresponds to *Side* (54) in Cboe FIX. 1 = Buy 2 = Sell
AllocQty		4	Binary	Corresponds to AllocQty (80) in Cboe FIX. Number of contracts for this party.

ClOrdID		20	Text	Corresponds to *ClOrdID* (11) in Cboe FIX. Day-unique ID chosen by the client. Characters in the ASCII range 33-126 are allowed, except for comma, semicolon, and pipe. If the *ClOrdID* matches a live order, the order will be rejected as duplicate. **Note: Cboe only enforces uniqueness of *ClOrdID* values among currently live orders. However, we strongly recommend that you keep your *ClOrdID* values day-unique.**
Capacity		1	Alpha	Corresponds to *OrderCapacity* (47) in Cboe FIX. C = Customer M = Market Maker F = Firm U = Professional Customer N = Non-Cboe Market Maker B = Broker-Dealer J = Joint Back Office
OpenClose		1	Alphanumeric	Corresponds to *OpenClose* (77) in Cboe FIX. Indicates status of client position in the option. O = Open C = Close N = None* *Orders with an *OrderCapacity* of "M" or "N" will not be required to specify *OpenClose* on their orders or may specify a value of "N". A <blank> will be sent to OCC. Contracts which are limited to closing only transactions with an *OpenClose* value of O will be rejected unless the *Capacity* field is M (Market Maker) and *TimeInForce* is 3 (Immediate or Cancel).
GiveUpFirmID		4	Alpha	Corresponds to GiveUpFirmID (9946) in Cboe FIX. EFID that will clear the trade.
Account (Optional)		16	Text	See **List of Optional Fields**.
CMTANumber (Optional)		4	Binary	See **List of Optional Fields**.
ClearingAccount (Optional)		4	Text	See **List of Optional Fields**.
Optional fields. . .				Optional fields as set in the bitmap. Note, optional fields that occur in the repeating groups appear above, repeating per group, not within this block.

Required Order Attributes:

- Some form of symbology (see **Symbology** below)
- Agency order's *Side* must match the cross order's *CrossPrioritization*
- Each contra-party allocation must have the opposite *Side*
- Each side's cumulative *AllocQty* must equal the cross order's *OrderQty*

Symbology:

For additional information, refer to the Cboe US Equity and Options Symbology Reference.

Example New Order Cross Message:

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes.
MessageLength	B0 00	176 bytes
MessageType	41	New Order Cross
MatchingUnit	00	Always 0 for inbound messages
SequenceNumber	64 00 00 00	Sequence number 100
CrossID	4E 5A 31 56 37 42 4A 5F 41 63 63 65 70 74 42 75 79 00 00 00	NZ1V7BJ_AcceptBuy
CrossType	31	1 = BAM Order
CrossPrioritization	31	1 = Agency Buy
Price	20 4E 00 00 00 00 00 00	$2.00
OrderQty	64 00 00 00	100 contracts
NumberOfNewOrderCross Bitfields	02	Two bitfields to follow
NewOrderCrossBitfield1	41	*Symbol, TargetPartyID*
NewOrderCrossBitfield2	30	*CMTANumber, ClearingAccount*
GroupCnt	03 00	Three repeating groups to follow
Side	31	1 = Buy
AllocQty	64 00 00 00	100 contracts
ClOrdID	51 4C 37 53 5A 37 43 5F 61 67 65 6E 63 79 00 00 00 00 00 00	QL7SZ7C_agency
Capacity	43	C = Customer
OpenClose	43	C = Close
GiveUpFirmID	44 45 46 47	DEFG
CMTANumber	00 00 00 00	No *CMTANumber* for this order
ClearingAccount	00 00 00 00	No *ClearingAccount* for this order
Side	32	2 = Sell
AllocQty	28 00 00 00	40 contracts
ClOrdID	51 4C 39 4B 38 55 56 5F 63 6F 6E 74 72 61 31 00 00 00 00 00	QL9K8UV_contra1
Capacity	46	F = Firm
OpenClose	4F	O = Open
GiveUpFirmID	41 42 43 44	ABCD
CMTANumber	27 02 00 00	551
ClearingAccount	57 58 59 5A	WXYZ
Side	32	2 = Sell
AllocQty	3C 00 00 00	60 contracts
ClOrdID	51 4C 39 54 35 59 44 5F 63 6F 6E 74 72 61 32 00 00 00 00 00	QL9T5YD_contra2
Capacity	46	F = Firm
OpenClose	4F	O = Open
GiveUpFirmID	41 42 43 44	ABCD
CMTANumber	7B 00 00 00	123
ClearingAccount	57 58 59 5A	WXYZ
Symbol	30 30 51 30 6B 41 00 00	00Q0kA
Target Party ID	43 44 45 46	CDEF

4.1.3 New Complex Order (EDGX and C2 Only)

A `New Complex Order` message contains the details required to enter an order on a complex instrument created with previously entered `New Complex Instrument` request. The message is similar to a `New Order` with an additional repeating group of the positions for each leg. The positions must be in the order returned by the system in the `Complex Instrument Accepted` response message, not the order supplied in the `New Complex Instrument` request.

Permitted input optional fields are described in 'Section 5.3 – New Complex Order'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA.`
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x4B`
MatchingUnit	5	1	Binary	Always 0 for inbound (Member to Cboe) messages.
SequenceNumber	6	4	Binary	The sequence number for this message.
ClOrdID	10	20	Text	Corresponds to *ClOrdID* (11) in Cboe FIX. ID chosen by the client. Characters in the ASCII range 33-126 are allowed, except for comma, semicolon, and pipe. If the *ClOrdID* matches a live order, the order will be rejected as duplicate. Note: Cboe only enforces uniqueness of *ClOrdID* values among currently live orders, which includes long-lived, persisting GTC/GTD orders. However, we strongly recommend that you keep your *ClOrdID* values unique.
Side	30	1	Alphanumeric	Corresponds to *Side* (54) in Cboe FIX. 1 = Buy 2 = Sell
OrderQty	31	4	Binary	Corresponds to *OrderQty* (38) in Cboe FIX. Order quantity. System limit is 999,999 contracts.
NumberOf NewComplexOrder Bitfields	35	1	Binary	Bitfield identifying which bitfields are set. Field values must be appended to the end of the message.
NewComplexOrder Bitfield[1]	36	1	Binary	Bitfield identifying fields to follow.
….				
NewComplexOrder Bitfield[n]		1	Binary	Last bitfield.
NoLegs		1	Binary	Corresponds to *NoLegs* (555) in Cboe FIX. Indicates the number of repeating groups to follow. Must be a minimum of 2 and a maximum of 12.

Repeating Group *ComplexLegOrderInfo* must occur the number of times specified in *NoLegs*. Each field occurs in each group, in order as shown below. Optional fields occur only if corresponding bits in bitfields are set.

LegPositionEffect	1	Alphanumeric	Corresponds to *LegPositionEffect* (564) in Cboe FIX. Indicates status of client position in option for this leg. O = Open C = Close N = None* *Only Orders with an *OrderCapacity* of "M" or "N" will be allowed to specify "N" for *LegPositionEffect*. Contracts which are limited to closing only transactions with a *LegPositionEffect* value of O will be rejected unless the *Capacity* field is M (Market Maker) and *TimeInForce* is 3 (Immediate or Cancel).

.

Optional fields…				Optional fields as set in the bitmap. Note, optional fields that occur in the repeating groups appear above, repeating per group, not within this block.

Required Order Attributes:

The following are required to be sent:

- *Symbol*
- *Price* only (limit orders) or *Price* and/or *OrdType* (limit or market orders); and,
- *Capacity*
- *LegPositionEffect*

All other values have defaults. See the table in **List of Options Fields** for additional information about each optional field, including its default value.

See the Cboe US Equity and Options Symbology Reference for information on symbology.

Example New Complex Order Message:

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes.
MessageLength	4D 00	77 bytes
MessageType	4B	New Complex Order
MatchingUnit	00	Always 0 for inbound messages
SequenceNumber	64 00 00 00	Sequence number 100
ClOrdID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123
Side	31	Buy
OrderQty	64 00 00 00	100 contracts
NumberOfNewOrder Bitfields	02	Two bitfields to follow
NewOrderBitfield1	C4	*Price, Symbol, Capacity*
NewOrderBitfield2	03	*RoutingInst, Account*
NoLegs	03	*Three legs*
LegPositionEffect	4F	O = Open
LegPositionEffect	4F	O = Open
LegPositionEffect	4F	O = Open
Price	38 FF FF FF FF FF FF FF	-0.02
Symbol	00 00 00 00 00 43 31 00	0000C1

Capacity	43	C = Customer
RoutingInst	42 00 00 00	B = Book only, COA eligible
Account	44 45 46 47 00 00 00 00 00 00 00 00 00 00 00 00	DEFG

4.1.4 Cancel Order

Request to cancel either a single order or mass cancellation of a group of orders. Note that this does not apply to open orders across multiple sessions.

A single order cancellation references the *ClOrdID* from a previous order (*OrigClOrdID* field).

Order Cancel Request messages for GTC and GTD orders may continue to be issued anytime after the trading session ends at 4:00 PM ET (4:15 PM ET for select ETF's) and prior to the trading session disconnecting at 4:45 PM ET. All other order message types received after the market closes at 4:00 PM ET (4:15 PM ET for select ETF's) will be rejected.

Mass cancellation of a group of orders can be done with one of two methods, using either the *MassCancel* (legacy) or *MassCancelInst* optional fields. If both optional fields *MassCancel* and *MassCancelInst* are specified, the `Cancel Order` request will be rejected. **Members are encouraged to use the *MassCancelInst* method as the legacy *MassCancel* method will be deprecated in the future with notice.**

Legacy Mass Cancel method:

- Populate the *MassCancel* required field (and do not specify the *MassCancelInst* optional field)
- Specify the *ClearingFirm* field, optionally the *RiskRoot* field, and optionally *MassCancelId* if a single `Mass Cancel Acknowledgement` is requested.
- Specify the *MassCancelLockout* optional field to request subsequent rejection of new orders based on the level of *MassCancel* (i.e. Firm level, Risk Root level, or Custom Group Id level)

MassCancelInst method

- Specify the *MassCancelInst* optional field
- Specify the *ClearingFirm* field, optionally the *RiskRoot* field, and optionally *MassCancelId* if the Acknowledgement Style is set to S or B
- Risk lockout is optionally specified using the *MassCancelInst* field. As a result, the *MassCancelLockout* field will be ignored when *MassCancelInst* is present.

Effective August 15, 2018, the system limits the rate at which identical Mass Cancel requests can be submitted to the system. Requests are restricted to twenty (20) messages per second per port.

An identical Mass Cancel message is defined as a message having all of the same *CustomGroupID*, *Symbol*, *Clearing Firm*, *Lockout Instruction*, *Instrument Type Filter* and *GTC Order Filter* field values, as a previously received message.

Permitted input optional fields are described in 'Section 5.4 – Cancel Order'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be 0xBA 0xBA.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	0x39
MatchingUnit	5	1	Binary	Always 0 for inbound (Member to Cboe) messages.
SequenceNumber	6	4	Binary	The sequence number for this message.
OrigClOrdID	10	20	Text	Corresponds to *OrigClOrdID* (41) in Cboe FIX. *ClOrdID* of the order to cancel. For mass cancel requests, must be empty (all zeroes).
NumberOf CancelOrder Bitfields	30	1	Binary	Bitfield identifying bitfields which are set. May be 0. Field values must be appended to the end of the message.
CancelOrder Bitfield^1	31	1	Binary	Bitfield identifying fields to follow. Only present if *NumberOfCancelOrderBitfields* is non-zero.
…				
CancelOrder Bitfield^n		1	Binary	Last bitfield.
Optional fields. . .				

Example Cancel Order Message:

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes.
MessageLength	22 00	34 bytes
MessageType	39	Cancel Order
MatchingUnit	0	Always 0 for inbound messages
SequenceNumber	64 00 00 00	Sequence Number 100
OrigClOrdID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123
NumberOfCancel OrderBitfields	01	One bitfield to follow
CancelOrderBitfield1	01	*ClearingFirm*
ClearingFirm	54 45 53 54	TEST

Example Mass Cancel Order Message (legacy):

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes.
MessageLength	3F 00	63 bytes
MessageType	39	Cancel Order
MatchingUnit	00	Always 0 for inbound messages
SequenceNumber	64 00 00 00	Sequence Number 100
OrigClOrdID	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	(empty)
NumberOfCancel OrderBitfields	01	One bitfield to follow

CancelOrderBitfield1	1D	*ClearingFirm, MassCancel, RiskRoot, MassCancelID*
ClearingFirm	54 45 53 54	TEST
MassCancel	34	4 = Risk root, clearing firm match
RiskRoot	4D 53 46 54 00 00	MSFT
MassCancelId	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123

Example Mass Cancel Order Message:

Field Name	**Hexadecimal**	**Notes**
StartOfMessage	BA BA	Start of message bytes.
MessageLength	4F 00	79 bytes
MessageType	39	`Cancel Order`
MatchingUnit	00	Always 0 for inbound messages
SequenceNumber	64 00 00 00	Sequence Number 100
OrigClOrdID	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	(empty)
NumberOfCancel OrderBitfields	02	Two bitfields to follow
CancelOrderBitfield1	19	*ClearingFirm, RiskRoot, MassCancelId*
CancelOrderBitfield2	01	*MassCancelInst*
ClearingFirm	54 45 53 54	TEST
RiskRoot	4D 53 46 54 00 00	MSFT
MassCancelId	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123
MassCancelInst	46 53 4C 42 00 00 00 00 00 00 00 00 00 00 00 00	F = Cancel orders matching clearing firm TEST S = Single ack L = Lockout symbol MSFT B = Cancel simple and complex

4.1.5 Modify Order

Request to modify an order. The order attributes to be modified are selected using *NumberOfModifyBitfields* and some number of bitfields to follow. *Price, OrderQty, OrdType, MaxFloor* (BZX and C2 only) and *StopPx* may be adjusted. Modifies will result in a loss of time priority unless the modification involves a decrease in *OrderQty*, a change to *MaxFloor*, or a change to *StopPx*. *OrdType* may be adjusted from Limit to Market.

Changes in *OrderQty* result in an adjustment of the current order's *OrderQty*. The new *OrderQty* does not directly replace the current order's *LeavesQty*. Rather, a delta is computed from the current *OrderQty* and the replacement *OrderQty*. This delta is then applied to the current *LeavesQty*. If the resulting *LeavesQty* is less than or equal to zero, the order is cancelled. This results in safer behavior when the modification request overlaps partial fills for the current order, leaving the Member in total control of the share exposure of the order.

A `Modify Order` should not be issued until the `Order Acknowledgement` for the previous `New Order` or `Order Modified` message for the previous `Modify Order` has been received. The BOE handler will reject a new `Modify Order` if it has not been accepted or it has not seen the result of the prior modification from the Matching Engine. However, `Modify Order` requests that merely reduce *OrderQty* may be overlapped if the existing *ClOrdID* is reused, as long as the trading identifier has not been opted-in to daily limit trading risk controls. This is the only case where reuse of the *ClOrdID* is allowed.

***The OrderQty* and Price fields in the optional field block must be present on all `Modify Order` requests.** Messages sent without *OrderQty* or Price fields will be rejected.

Permitted input optional fields are described in ‘Section 5.5 – Modify Order’.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x3A`
MatchingUnit	5	1	Binary	Always 0 for inbound (Member to Cboe) messages.
SequenceNumber	6	4	Binary	The sequence number for this message.
ClOrdID	10	20	Text	New *ClOrdID* for this order.
OrigClOrdID	30	20	Text	Corresponds to *OrigClOrdID* (41) in Cboe FIX. *ClOrdID* of the order to replace. In the case of multiple changes to a single order, this will be the *ClOrdID* of the most recently accepted change.
NumberOf ModifyOrder Bitfields	50	1	Binary	Bitfield identifying bitfields which are set. May be 0. Field values must be appended to the end of the message.
ModifyOrder Bitfield^{1}	51	1	Binary	Bitfield identifying fields to follow.
…				
ModifyOrder Bitfield^{n}		1	Binary	Last bitfield.
Optional fields. . .				

Example Modify Order Message:

Field Name	Hexadecimal	Notes
StartOfMessage	`BA BA`	Start of message bytes
MessageLength	`3E 00`	82 bytes
MessageType	`3A`	`Modify Order`
MatchingUnit	`00`	Always 0 for inbound messages
SequenceNumber	`64 00 00 00`	Sequence Number 100
ClOrdID	`41 42 43 31 32 34 00 00 00 00 00 00 00 00 00 00 00 00 00 00`	ABC124
OrigClOrdID	`41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00`	ABC123
NumberOfModify OrderBitfields	`01`	One bitfield to follow
ModifyOrderBitfield1	`0C`	*OrderQty, Price*
OrderQty	`64 00 00 00`	100 contracts
Price	`08 E2 01 00 00 00 00 00`	12.34

4.1.6 Bulk Order

Request to place new orders and/or cancel existing orders pertaining to multiple series of a single OSI Root. The order attributes in common among all the orders are specifed once. Attributes that differ for each individual order are specified in an array at the end of the message. **The array must contain at least 1 and not more than 200 repeating groups.**

In each repeating group, the symbol (Cboe native format) is always required. Beyond that, the bits in the *BulkOrderBitfields* control which fields are expected. If a field is present in the repeating group for which there is a corresponding field in the non-repeating part of the message (e.g., *OrderQty*), the value in the repeating group is always used.

When sending a two-sided bulk order, one may select one side where nothing should be changed by sending a non-zero *Price* and a zero *OrderQty* for the desired side. This particular combination tells the system to do nothing to the existing quote on this side.

Note that for the same side or a given symbol, non-zero bulk orders behave like new orders or cancel/replace orders, depending on whether an earlier bulk order is currently active for that symbol.

ISO and routable bulk orders are not supported.

Any `Bulk Order` that contains the *EchoText* field will be rejected.

Bulk Order Ports do not support GTCs or GTDs that expire on a future date.

Bulk Port Order Acceptance Table

Message	Simple/Complex	Accepted over Bulk Port?	Other Conditions
Bulk Order	Simple	Yes	Must be marked Post Only with TIF of Day or GTD with same day expiration.
New Order	Simple	Yes	Must be marked Post Only with TIF of Day or GTD with same day expiration.
New Order Cross (BAM or QCC)	Simple	No	
New Order (Auction Response)	Simple	Yes	Must be marked Post Only with TIF of Day or GTD with same day expiration.
Bulk Order	Complex	Not Supported	
New Complex Order	Complex	No	
New Complex Order (COA Response)	Complex	No	

C2 and EDGX Options Bulk Order Usage

There are additional requirements for firms that wish to use the `Bulk Order` message.

- *RoutingInst* must be set to P (Post Only).
- *TimeInForce* must be set to 0 (Day) or (6) GTD with an *ExpireTime* of today's trading date.

Permitted input optional fields are described in 'Section 5.6 – Bulk Order'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x3B`
MatchingUnit	5	1	Binary	Always 0 for inbound (Member to Cboe) messages.
SequenceNumber	6	4	Binary	The sequence number for this message.

ClOrdIDBatch	10	20	Text	ID chosen by the client. Characters in the ASCII range 33-126 are allowed, except for comma, semicolon, and pipe. If the *ClOrdIDBatch* matches a live order, the order will be rejected as duplicate. Note: Cboe only enforces uniqueness of *ClOrdIDBatch* values among currently live orders, which includes long-lived, persisting GTC/GTD orders. However, we strongly recommend that you keep your *ClOrdIDBatch* values unique.
Symbol	30	6	Text	The underlying symbol.
OrderQty	36	4	Binary	The order quantity to apply to each new order if the corresponding *BidOrderQty* or *AskOrderQty* is not specified in the optional bitfields.
GroupCnt	40	2	Binary	Number of repeating groups included in this bulk order.
NumberOf NewOrder Bitfields	42	1	Binary	Bitfield identifying which bitfields are set. Field values must be appended to the end of the message.
NewOrderBitfield^1	43	1	Binary	Bitfield identifying fields to follow.
….				
NewOrderBitfield^n		1	Binary	Last bitfield.
NumberOfBulkOrder Bitfields		1	Binary	Bitfield identifying with bitfields are set. Field values must appear in each repeating group.
BulkOrderBitfield^1		1	Binary	Bitfield identifying fields to follow.
…				
BulkOrderBitfield^n		1	Binary	Last bitfield.
NewOrder optional fields…				
Repeating Groups of …				
Symbol (required)		6	Alphanumeric	Corresponds to *Symbol* (55) in Cboe FIX. Cboe native identifier.
OptionalBulkOrder GroupFields				

Each order in a repeated group must contain a Cboe symbol, *Capacity*, and at least one of *BidShortPrice* or *AskShortPrice*. Also, *BidOrderQty* and/or *AskOrderQty* may be sent to override the *OrderQty* sent in the message body.

A cancel may be effected by sending a *Price* and *OrderQty* of zero. In this case, any open order that exists because of an earlier `Bulk Order` message on that symbol/side is cancelled. Note that individual orders entered using a `New Order` message cannot be cancelled through use of a `Bulk Order` message.

All other values have defaults. See the table in **List of Optional Fields** for additional information about each optional field, including its default value.

For Cboe Symbology, please refer to the Cboe US Equity and Options Symbology Reference. Note that OSI symbology cannot be used in `Bulk Order` messages – only the Cboe native symbol is accepted.

Example Bulk Order Message:

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes.
MessageLength	61 00	97 bytes
MessageType	3B	Bulk Order
MatchingUnit	00	Always 0 for inbound messages
SequenceNumber	64 00 00 00	Sequence number 100
ClOrdIDBatch	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123
OsiRoot	41 42 43 00 00 00	ABC
OrderQty	00 00 00 00	Chosen to be zero; will be supplied on individual series/sides
GroupCnt	02 00	Two series
NumberOfNewOrder Bitfields	04	Four bitfields to follow
NewOrderBitfield1	00	No fields in byte 1
NewOrderBitfield2	40	*Capacity*
NewOrderBitfield3	01	*Account*
NewOrderBitfield4	30	*OpenClose, CMTANumber*
NumberOfBulkOrder Bitfields	01	*One bitfield to follow*
BulkOrderBitfield1	03	*BidShortPrice, BidOrderQty*
Capacity	46	F = Firm
Account	44 45 46 47 00 00 00 00 00 00 00 00 00 00 00 00	DEFG
OpenClose	4F	O = Open
CMTANumber	CF 07 00 00	1999
Symbol	30 30 36 69 70 41	006ipA
BidShortPrice	C8 32 00 00	1.30
BidOrderQty	64 00 00 00	100 contracts
Symbol	30 30 34 63 53 73	004cSs
BidShortPrice	AC 07 01 00	6.75
BidOrderQty	F4 01 00 00	500 contracts

4.1.7 Purge Orders

Request to cancel a group of orders across all the firm's sessions. This differs from a mass cancel request sent via a `Cancel Order` message as the purge request is applied across all of the firm's sessions, not just the session on which the `Cancel Order` was received.

A purge request requires populating the *MassCancel* required field (legacy) or specifying the *MassCancelInst* optional field. If the *MassCancelInst* optional field is specified, the *MassCancel* required field will be ignored. **Members are encouraged to use the *MassCancelInst* method as the legacy *MassCancel* method will be deprecated in the future with notice**.

In addtion, the `Purge Orders` message accepts a list of up to 10 *CustomGroupID* values as part of the order matching filter. If both *RiskRoot* and a list of *CustomGroupID* values are specified, the `Purge Orders` request will be rejected.

Legacy Mass Cancel method:

- Populate the *MassCancel* required field (and do not specify the *MassCancelInst* optional field)
- Specify the *ClearingFirm* field, optionally the *RiskRoot* field, and optionally *MassCancelId* if a single `Mass Cancel Acknowledgement` is requested.

- Specify the *MassCancelLockout* optional field to request subsequent rejection of new orders based on the level of *MassCancel* (i.e. Firm level, Risk Root level, or Custom Group Id level)

MassCancelInst method

- Specify the *MassCancelInst* optional field
- Specify the *ClearingFirm* field, optionally the *RiskRoot* field, and optionally *MassCancelId* if the Acknowledgement Style is set to S or B.
- Risk lockout is optionally specified using the *MassCancelInst* field. As a result, the *MassCancelLockout* field will be ignored when *MassCancelInst* is present.

Effective August 15, 2018, the system limits the rate at which identical Purge Orders requests can be submitted to the system. Requests are restricted to twenty (20) messages per second per port.

An identical Mass Cancel message is defined as a message having all of the same *CustomGroupID*, *Symbol*, *Clearing Firm*, *Lockout Instruction*, *Instrument Type Filter* and *GTC Order Filter* field values, as a previously received message. Permitted input optional fields are described in 'Section 5.7 – Purge Orders'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x47`
MatchingUnit	5	1	Binary	Always 0 for inbound (Member to Cboe) messages.
SequenceNumber	6	4	Binary	The sequence number for this message.
MassCancel	10	1	Alphanumeric	Corresponds to *MassCancel* (7693) in Cboe FIX. Indicates that a mass cancellation is being performed.
NumberOf PurgeOrders Bitfields	11	1	Binary	Bitfield identifying bitfields which are set. May be 0. Field values must be appended to the end of the message.
PurgeOrderBitfield[1]	12	1	Binary	Bitfield identifying fields to follow. Only present if *NumberOfPurgeOrdersBitfields* is non-zero.
CustomGroupIDCnt	13	1	Binary	Number of repeating *CustomGroupID* included in this message.
CustomGroupID[1]		2	Binary	First *CustomGroupID*. Only present if *CustomGroupIDCnt* is non-zero.
…				
CustomGroupID[n]		2	Binary	Last *CustomGroupID*.
Optional fields. . .				

Example Purge Orders Message (legacy) with CustomGroupID and Lockout:

Field Name	Hexadecimal	Notes
StartOfMessage	`BA BA`	Start of message bytes
MessageLength	`29 00`	41 bytes
MessageType	`47`	`Purge Orders`
MatchingUnit	`0`	Always 0 for inbound messages
SequenceNumber	`64 00 00 00`	Sequence number 100
MassCancel	`34`	4 = clearing firm match, single ack
NumberOfPurge OrderBitfields	`01`	One bitfield to follow

PurgeOrdersBitfield1	13	*ClearingFirm,MassCancelLockout, MassCancelID*
CustomGroupIDCnt	02	Two CustomGroupIDs to follow
CustomGroupID1	BF BE	First *CustomGroupID* of 48831
CustomGroupID2	C0 BE	Second *CustomGroupID* of 48832
ClearingFirm	54 45 53 54	TEST
MassCancelLockout	31	1 = lockout
MassCancelID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123

Example Purge Orders Message (legacy) with Product Level Filter and no Lockout:

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes
MessageLength	2B 00	43 bytes
MessageType	47	Purge Orders
MatchingUnit	00	Always 0 for inbound messages
SequenceNumber	64 00 00 00	Sequence number 100
MassCancel	34	4 = clearing firm match, single ack
NumberOfPurge OrderBitfields	01	1 bitfield to follow
PurgeOrdersBitfield1	1B	*ClearingFirm, MassCancelLockout, RiskRoot, MassCancelID*
CustomGroupIDCnt	00	No *CustomGroupID* to follow
ClearingFirm	54 45 53 54	TEST
MassCancelLockout	30	0 = no lockout
RiskRoot	41 42 43 00 00 00	ABC
MassCancelID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123

Example Purge Orders Message with CustomGroupID and Lockout:

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes
MessageLength	29 00	58 bytes
MessageType	47	Purge Orders
MatchingUnit	0	Always 0 for inbound messages
SequenceNumber	64 00 00 00	Sequence number 100
MassCancel	00	Not specified
NumberOfPurge OrderBitfields	01	One bitfield to follow
PurgeOrdersBitfield1	15	*ClearingFirm,MassCancelInst, MassCancelID*
CustomGroupIDCnt	02	Two CustomGroupIDs to follow
CustomGroupID1	BF BE	First *CustomGroupID* of 48831
CustomGroupID2	C0 BE	Second *CustomGroupID* of 48832
ClearingFirm	54 45 53 54	TEST
MassCancelInst	46 53 4C 42 00 00 00 00 00 00 00 00 00 00 00 00	F = Cancel orders matching clearing firm TEST S = Single ack L = Lockout both *CustomGroupIDs* B = Cancel simple and complex

MassCancelID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123

Example Purge Orders Message with Product Level Filter and no Lockout:

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes
MessageLength	3C 00	60 bytes
MessageType	47	Purge Orders
MatchingUnit	0	Always 0 for inbound messages
SequenceNumber	64 00 00 00	Sequence number 100
MassCancel	00	Not specified
NumberOfPurge OrderBitfields	01	One bitfield to follow
PurgeOrdersBitfield1	1D	*ClearingFirm,MassCancelInst, RiskRoot, MassCancelID*
CustomGroupIDCnt	00	No CustomGroupIDs to follow
ClearingFirm	54 45 53 54	TEST
MassCancelInst	46 53 4E 42 00 00 00 00 00 00 00 00 00 00 00 00	F = Cancel orders matching clearing firm TEST S = Single ack N = No lockout B = Cancel simple and complex
RiskRoot	41 42 43 00 00 00	ABC
MassCancelID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123

4.1.8 New Complex Instrument (EDGX and C2 Only)

A New Complex Instrument message is used to request that the system create a complex strategy. The resulting symbol (if accepted by the system) will be returned in a Complex Instrument Accepted message; a Complex Instrument Rejected message will be sent if it is not accepted. On C2, all legs must have the same underlying product which can be different OSI Roots (i.e. XYZ and XYZ1). **On EDGX Options, all legs must have the same underlying OSI root until 6/11/18 at which time EDGX Options will function like C2.**

A *ClearingFirm* must be sent on each New Complex Instrument message unless a Default Executing Firm ID is set at the port-level.

Permitted input optional fields are described in 'Section 5.8 – New Complex Instrument'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be 0xBA 0xBA.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	0x4C
MatchingUnit	5	1	Binary	Always 0 for inbound (Member to Cboe) messages.
SequenceNumber	6	4	Binary	The sequence number for this message.
ClOrdID	10	20	Text	Correcsponds to *ClOrdID* (11) in Cboe FIX. Day-unique ID chosen by the client. Characters in the ASCII range 33-126 are allowed, except for comma, semicolon, and pipe.

				If the *ClOrdID* matches a live order, the order will be rejected as duplicate. **Note: Cboe only enforces uniqueness of *ClOrdID* values among currently live orders. However, we strongly recommend that you keep your *ClOrdID* values day-unique.**
NumberOf NewComplex InstrumentBitfields	30	1	Binary	Bitfield identifying which bitfields are set. Field values must be appended to the end of the message.
NewComplex InstrumentBitfield^{1}	31	1	Binary	Bitfield identifying fields to follow.
….				
NewComplex InstrumentBitfield^{n}		1	Binary	Last bitfield.
NoLegs		1	Binary	Corresponds to *NoLegs* (555) in Cboe FIX. Indicates the number of repeating groups to follow. Must be a minimum of 2 and a maximum of 12.
Repeating Group *ComplexLeg* must occur the number of times specified in *NoLegs*. Each field occurs in each group, in order as shown below. Optional fields occur only if corresponding bits in bitfields are set.				
LegSymbol		8	Alphanumeric	Corresponds to *LegSymbol* (600) in Cboe FIX. Entire Cboe format symbol or OSI Root. **Must send *LegCFICode*, *LegMaturityDate*, and *LegStrikePrice* if using OSI format.**
LegCFICode (Optional)		6	Alphanumeric	Corresponds to *LegCFICode* (608) in Cboe FIX. CFI Code for leg. Required if *LegSymbol* is in OSI format. OP = Options Put OC = Options Call
LegMaturityDate (Optional)		4	Date	Corresponds to *LegMaturityDate* (611) in Cboe FIX. Required if *LegSymbol* is in OSI format.
LegStrikePrice (Optional)		8	Binary Price	Corresponds to *LegStrikePrice* (612) in Cboe FIX. Option strike price. System maximum is 99,999,999. Must be non-negative. Required if *LegSymbol* is in OSI format.
LegRatioQty		4	Binary	Corresponds to *LegRatioQty* (623) in cboe FIX. Ratio of number of contracts in this leg per order quantity. Must be between 1 and 99,999.
LegSide		1	Alphanumeric	Corresponds to *LegSide* (624) in Cboe FIX. 1 = Buy 2 = Sell
Optional fields…				Optional fields as set in the bitmap. Note, optional fields that occur in the repeating groups appear above, repeating per group, not within this block.

Example New Complex Instrument Message:

Field Name	**Hexadecimal**	**Notes**
StartOfMessage	BA BA	Start of message bytes.
MessageLength	61 00	97 bytes
MessageType	4C	New Complex Instrument
MatchingUnit	00	Always 0 for inbound messages
SequenceNumber	64 00 00 00	Sequence number 100
ClOrdID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123
NumberOfNewComplex InstrumentBitfields	01	One bitfield to follow
NewComplex InstrumentBitfield1	0F	*LegCFICode, LegMaturityDate, LegStrikePrice, ClearingFirm*
NoLegs	02	Two legs
LegSymbol	4D 53 46 54 00 00 00 00	MSFT
LegCFICode	4F 43 00 00 00 00	OC = Option Call
LegMaturityDate	EF DB 32 01	2011-03-19
LegStrikePrice	98 AB 02 00 00 00 00 00	17.50
LegRatioQty	02 00 00 00	Ratio of 2
LegSide	31	Buy
LegSymbol	4D 53 46 54 00 00 00 00	MSFT
LegCFICode	4F 50 00 00 00 00	OP = Option Put
LegMaturityDate	F6 DB 32 01	2011-03-26
LegStrikePrice	30 E6 02 00 00 00 00 00	19.00
LegRatioQty	01 00 00 00	Ratio of 1
LegSide	32	Sell
ClearingFirm	54 45 53 54	TEST

4.2 Cboe to Member

4.2.1 Order Acknowledgment

`Order Acknowledgment` messages are sent in response to `New Order` and `New Complex Order` messages. The message corresponds to a FIX Execution Report with *ExecType* (150) = 0 (New).

Per the instructions given in a Return Bitfields Parameter Group on the `Login Request` (Section 3.1.1 – Login Request), optional fields may be appended to echo back information provided in the original `New Order` message. Fields which have been requested to be echoed back but which were not filled in will still be sent, but filled with binary zero (`0x00`).

Permitted return optional fields are described in 'Section 6.1 – Order Acknowledgement'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x25`
MatchingUnit	5	1	Binary	The matching unit which created this message. Matching units in BOE correspond to matching units on Multicast PITCH.
SequenceNumber	6	4	Binary	The sequence number for this message. Distinct per matching unit.
TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).
ClOrdID	18	20	Text	Echoed back from the original order.
OrderID	38	8	Binary	Corresponds to *OrderID* (37) in Cboe FIX. Order identifier supplied by Cboe. This identifier corresponds to the identifiers used in Cboe market data products.
ReservedInternal	46	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	47	1	Binary	Number of bitfields to follow.
ReturnBitfield^1	48	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield^n		1	Binary	Last bitfield.
Optional fields. . .				

Example Order Acknowledgment Message:

Field Name	Hexadecimal	Notes
StartOfMessage	`BA BA`	Start of message bytes.
MessageLength	`4E 00`	78 bytes
MessageType	`25`	`Order Acknowledgment`
MatchingUnit	`03`	Matching Unit 3
SequenceNumber	`64 00 00 00`	Sequence number 100
TransactionTime	`E0 FA 20 F7 36 71 F8 11`	1,294,909,373,757,324,000
ClOrdID	`41 42 43 31 32 33 00 00 00 00` `00 00 00 00 00 00 00 00 00 00`	ABC123
OrderID	`05 10 1E B7 5E 39 2F 02`	171WC1000005 (base 36)
ReservedInternal	`00`	Ignore

NumberOfReturn Bitfields	03	Three bitfields to follow
ReturnBitfield1	00	No bitfields from byte 1
ReturnBitfield2	41	*Symbol, Capacity*
ReturnBitfield3	05	*Account, ClearingAccount*
Symbol	31 32 33 61 42 63 00 00	*123aBc*
Capacity	50	P = Principal
Account	41 42 43 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC
ClearingAccount	00 00 00 00	

Example Minimal Order Acknowledgment Message:

Field Name	**Hexadecimal**	**Notes**
StartOfMessage	BA BA	Start of message bytes.
MessageLength	2E 00	46 bytes
MessageType	25	`Order Acknowledgment`
MatchingUnit	03	Matching Unit 3
SequenceNumber	64 00 00 00	Sequence number 100
TransactionTime	E0 FA 20 F7 36 71 F8 11	1,294,909,373,757,324,000
ClOrdID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123
OrderID	05 10 1E B7 5E 39 2F 02	171WC1000005 (base 36)
ReservedInternal	00	Ignore
NumberOfReturn Bitfields	00	No bitfields to follow

4.2.2 Cross Order Acknowledgment (EDGX Only)

`Cross Order Acknowledgment` messages are sent in response to `New Order Cross` messages. The message corresponds to a FIX Execution Report with *ExecType* (150) = 0 (New). In FIX, multiple execution reports could be generated from one new cross order message.

Per the instructions given in a Return Bitfields Parameter Group on the `Login Request` (Section 3.1.1 – Login Request), optional fields may be appended to echo back information provided in the original `New Order Cross` message. Fields which have been requested to be echoed back but which were not filled in will still be sent, but filled with binary zero (`0x00`).

In each repeating group, the *ClOrdID* and *OrdId* are always returned. Beyond that, the bits specified in the optional return bitfields parameter group control which fields are returned. Any fields that appear in the repeating groups will not appear in the optional fields that come after the repeating groups.

Permitted return optional fields are described in 'Section 6.2 – Cross Order Acknowledgement'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x43`
MatchingUnit	5	1	Binary	The matching unit which created this message. Matching units in BOE correspond to matching units on Multicast PITCH.
SequenceNumber	6	4	Binary	The sequence number for this message. Distinct per matching unit.

TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).
CrossID	18	20	Text	Corresponds to *CrossID* (548) in Cboe FIX. Echoed back from the original order.
AuctionId	38	8	Binary	Corresponds to *AuctionId* (9370) in Cboe FIX. Auction order identifier supplied by Cboe. This identifier corresponds to the identifiers used in Cboe market data products.
ReservedInternal	46	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	47	1	Binary	Number of bitfields to follow.
ReturnBitfield^1	48	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield^n		1	Binary	Last bitfield.
GroupCnt		2	Binary	Number of order allocations represented by repeating groups included in this message.
Repeating Groups Of…				
ClOrdId		20	Text	Echoed back from the original order.
Side (Optional)		1	Alphanumeric	See **List of Optional Fields.**
AllocQty (Optional)		4	Binary	See **List of Optional Fields.**
Capacity (Optional)		1	Alpha	See **List of Optional Fields.**
OpenClose (Optional)		1	Alphanumeric	See **List of Optional Fields.**
GiveUpFirmID (Optional)		4	Alpha	See **List of Optional Fields.**
Account (Optional)		16	Text	See **List of Optional Fields.**
CMTANumber (Optional)		4	Binary	See **List of Optional Fields.**
ClearingAccount (Optional)		4	Text	See **List of Optional Fields.**
Optional fields. . .				Optional fields as set in the bitmap. Note, optional fields that occur in the repeating groups appear above, repeating per group, not within this block.

Example Cross Order Acknowledgment Message:

Field Name	**Hexadecimal**	**Notes**
StartOfMessage	BA BA	Start of message bytes.
MessageLength	91 00	145 bytes
MessageType	43	Cross Order Acknowledgment
MatchingUnit	02	Matching Unit 2
SequenceNumber	01 00 00 00	Sequence number 1
TransactionTime	E0 FA 20 F7 36 71 F8 11	1,294,909,373,757,324,000
CrossID	4E 5A 31 56 37 42 4A 5F 41 63 63 65 70 74 42 75 79 00 00 00	NZ1V7BJ_AcceptBuy
AuctionId	01 C0 91 A2 94 AB 78 04	2G4GYK000001 (base 36)

ReservedInternal	`00`	Ignore
NumberOfReturn Bitfields	`02`	Two bitfields to follow
ReturnBitfield1	`00`	No bitfields from byte 1
ReturnBitfield2	`41`	*Symbol, Capacity*
GroupCnt	`03 00`	Three repeating groups to follow
ClOrdID	`4E 5A 31 56 37 47 4E 5F 61 67 65 6E 63 79 00 00 00 00 00 00`	NZ1V7GN_agency
OrderID	`02 C0 91 A2 94 AB 78 04`	2G4GYK000002 (base 36)
Capacity	`43`	C = Customer
ClOrdID	`4E 5A 31 56 37 4B 46 5F 63 6F 6E 74 72 61 31 00 00 00 00 00`	NZ1V7KF_contra1
OrderID	`03 C0 91 A2 94 AB 78 04`	2G4GYK000003 (base 36)
Capacity	`46`	F = Firm
ClOrdID	`4E 5A 31 56 37 4E 48 5F 63 6F 6E 74 72 61 32 00 00 00 00 00`	NZ1V7NH_contra2
OrderID	`04 C0 91 A2 94 AB 78 04`	2G4GYK000004 (base 36)
Capacity	`46`	F = Firm
Symbol	`30 30 51 30 6B 41 00 00`	00Q0kA

4.2.3 Bulk Order Acknowledgment

`Bulk Order Acknowledgment` messages are sent in response to a `Bulk Order` message. Each `Bulk Order` message generates exactly one `Bulk Order Acknowledgment`, with the possibility of one or more `Order Rejected` or `Cancel Rejected` messages relating to the bulk order in between, depending on the return bits enabled in the `Login Request`. Note that other Cboe to Member messages may be interspersed with these (i.e., the `Bulk Order` to `Bulk Order Acknowledgment` sequence is not atomic).

Per the instructions given in the `Login Request`, optional fields may be appended to echo back groups of order IDs and reject reasons for the individual orders specified in the generated `Bulk Order` message. If the *BulkOrderIDs* bit has been set in the `Login Request`, a number of *BidOrderID* and/or *AskOrderID* values will be returned as necessary. If the *BulkOrderIDs* bit has not been set, then no order IDs will be returned.

If the *BulkRejectReasons* bit has been set in the `Login Request`, reject reason (*AskRejectReason* or *BidRejectReason*) will be returned for each order that has been rejected. If the *BulkRejectReasons* bit has not been set, then the reject reasons will not be aggregated and returned via the `Bulk Order Acknowledgment` message. Instead, `Order Rejected` or `Cancel Rejected` messages will be returned to the Member for each individual order as appropriate.

The ordering of each group of order IDs and reject reasons in a `Bulk Order Acknowledgment` message directly corresponds with the ordering of each group of individual orders specified in the `Bulk Order` message.

Fields which have been requested to be echoed back, but which were not filled in, will still be sent and will be filled with their empty value.

Permitted return optional fields are described in 'Section 6.3 – Bulk Order Acknowledgement'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x2F`
MatchingUnit	5	1	Binary	Unsequenced application message. Matching unit will be set to 0.

SequenceNumber	6	4	Binary	Unsequenced application message. Sequence number will be set to 0.
TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).
ClOrdIDBatch	18	20	Text	Echoed back from the original `Bulk Order` message.
GroupCnt	38	2	Binary	Number of repeating groups of order IDs and/or reject reasons appended.
AcceptedCount	40	2	Binary	Number of accepted orders (with either new or cancel/replace semantics) from the original `Bulk Order` message.
RejectedCount	42	2	Binary	Number of rejected orders from the original `Bulk Order` message. Note that if *GroupCnt*, *RejectedCount*, and *AcceptedCount* fields are all zero, this indicates a batch-level reject of the entire `Bulk Order` message (no individual `Order Rejected` messages will be sent), in which case the *OrderRejectReason* and *Text* fields will be populated.
BulkOrderReject Reason	44	1	Text	Reason for rejection of an entire `Bulk Order` message. See **Reason Codes** for a list of possible reasons.
Text	45	60	Text	Human readable text with more information about the reject reason.
ReservedInternal	105	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	106	1	Binary	Number of bitfields to follow.
ReturnBitfield¹	107	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield^n		1	Binary	Last bitfield.
Repeating Groups Of…				
BidOrderID (Optional)		8	Binary	Corresponds to *OrderID* (37) in Cboe FIX. A kind of *BulkOrderID*. Order identifier supplied by Cboe. This identifier corresponds to the identifiers used in Cboe market data products.
BidRejectReason (Optional)		1	Text	Reason for the individual order rejection. See **Reason Codes** for a list of possible reasons.
AskOrderID (Optional)		8	Binary	Corresponds to *OrderID* (37) in Cboe FIX. A kind of *BulkOrderID*. Order identifier supplied by Cboe. This identifier corresponds to the identifiers used in Cboe market data products.
AskRejectReason (Optional)		1	Text	Reason for the individual order rejection. See **Reason Codes** for a list of possible reasons.

Example Bulk Order Acknowledgment Message:

Field Name	Hexadecimal	Notes
StartOfMessage	`BA BA`	Start of message bytes.
MessageLength	`93 00`	147 bytes
MessageType	`2F`	`Bulk Order Acknowledgment`
MatchingUnit	`00`	Unsequenced message, unit = 0
SequenceNumber	`00 00 00 00`	Unsequenced message, sequence = 0
TransactionTime	`E0 FA 20 F7 36 71 F8 11`	1,294,909,373,757,324,000
ClOrdID	`41 42 43 31 32 33 00 00 00 00` `00 00 00 00 00 00 00 00 00 00`	ABC123
GroupCnt	`02 00`	Two repeating groups
AcceptedCount	`03 00`	Three accepted orders
RejectedCount	`01 00`	One rejected order
BulkOrderRejectReason	`00`	Batch not rejected
Text	`00 00 00 00 00 00 00 00 00 00` `00 00 00 00 00 00 00 00 00 00` `00 00 00 00 00 00 00 00 00 00` `00 00 00 00 00 00 00 00 00 00` `00 00 00 00 00 00 00 00 00 00` `00 00 00 00 00 00 00 00 00 00`	(empty)
ReservedInternal	`00`	Ignore
NumberOfReturn Bitfields	`06`	Six bitfields to follow
ReturnBitfield1	`00`	No bitfields from byte 1
ReturnBitfield2	`00`	No bitfields from byte 2
ReturnBitfield3	`00`	No bitfields from byte 3
ReturnBitfield4	`00`	No bitfields from byte 4
ReturnBitfield5	`00`	No bitfields from byte 5
ReturnBitfield6	`00`	*BulkOrderIDs, BulkRejectReasons*
BidOrderID	`00 00 00 00 00 00 00 00`	(empty)
BidRejectReason	`41`	A = Admin
AskOrderID	`05 10 1E B7 5E 39 2F 02`	171WC1000005 (base 36)
AskRejectReason	`00`	Not rejected
BidOrderID	`06 10 1E B7 5E 39 2F 02`	171WC1000006 (base 36)
BidRejectReason	`00`	Not rejected
AskOrderID	`09 10 1E B7 5E 39 2F 02`	171WC1000009 (base 36)
AskRejectReason	`00`	Not rejected

4.2.4 Order Rejected

`Order Rejected` messages are sent in response to a `New Order` which must be rejected. This message corresponds to a FIX Execution Report with *ExecType* (150) = 8 (Rejected). `Order Rejected` messages are unsequenced.

Permitted return optional fields are described in 'Section 6.4 – Order Rejected'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0x`BA `0x`BA.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x26`

MatchingUnit	5	1	Binary	Unsequenced application message. Matching unit will be set to 0.
SequenceNumber	6	4	Binary	Unsequenced application message. Sequence number will be set to 0.
TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).
ClOrdID	18	20	Text	Echoed back from the original order.
OrderRejectReason	38	1	Text	Reason for an order rejection. See **Reason Codes** for a list of possible reasons.
Text	39	60	Text	Human readable text with more information about the reject reason.
ReservedInternal	99	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	100	1	Binary	Number of bitfields to follow.
ReturnBitfield^{1}	101	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield^{n}		1	Binary	Last bitfield.
Optional fields. . .				

Example Order Rejected Message:

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes
MessageLength	85 00	133 bytes
MessageType	26	Order Rejected
MatchingUnit	0	Unsequenced message, unit = 0
SequenceNumber	00 00 00 00	Unsequenced message, sequence = 0
TransactionTime	E0 FA 20 F7 36 71 F8 11	1,294,909,373,757,324,000
ClOrdID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123
OrderRejectReason	44	D
Text	44 75 70 6C 69 63 61 74 65 20 43 6C 4F 72 64 49 44 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Duplicate ClOrdID
ReservedInternal	00	Ignore
NumberOfReturn Bitfields	04	Four bitfields to follow
ReturnBitfield1	00	No bitfields from byte 1
ReturnBitfield2	01	*Symbol*
ReturnBitfield3	06	*ClearingFirm, ClearingAccount*
ReturnBitfield4	0F	*MaturityDate, StrikePrice, PutOrCall, OpenClose*
Symbol	54 4E 44 4D 00 00 00 00	TNDM
ClearingFirm	54 45 53 54	TEST
ClearingAccount	00 00 00 00	(empty)
MaturityDate	EF DB 32 01	2011-03-19

StrikePrice	`98 AB 02 00 00 00 00 00`	17.50
PutOrCall	`31`	1 = Call
OpenClose	`4F`	O = Open

4.2.5 Cross Order Rejected (EDGX Only)

`Cross Order Rejected` messages are sent in response to a `New Order Cross` which must be rejected. This message corresponds to a FIX Execution Report with *ExecType* (150) = 8 (Rejected). `Order Rejected` messages are unsequenced.

Permitted return optional fields are described in 'Section 6.5 – Cross Order Rejected'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x44`
MatchingUnit	5	1	Binary	Unsequenced application message. Matching unit will be set to 0.
SequenceNumber	6	4	Binary	Unsequenced application message. Sequence number will be set to 0.
TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).
CrossID	18	20	Text	Echoed back from the original order.
OrderRejectReason	38	1	Text	Reason for an order rejection. See **Reason Codes** for a list of possible reasons.
Text	39	60	Text	Human readable text with more information about the reject reason.
ReservedInternal	99	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	100	1	Binary	Number of bitfields to follow.
ReturnBitfield[1]	101	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield[n]		1	Binary	Last bitfield.
Optional fields. . .				

Example Cross Order Rejected Message:

Field Name	**Hexadecimal**	**Notes**
StartOfMessage	`BA BA`	Start of message bytes
MessageLength	`59 00`	89 bytes
MessageType	`26`	`Cross Order Rejected`
MatchingUnit	`0`	Unsequenced message, unit = 0
SequenceNumber	`00 00 00 00`	Unsequenced message, sequence = 0
TransactionTime	`E0 FA 20 F7 36 71 F8 11`	1,294,909,373,757,324,000
ClOrdID	`41 42 43 31 32 33 00 00 00 00` `00 00 00 00 00 00 00 00 00 00`	ABC123
OrderRejectReason	`41`	A

Text	53 65 72 69 65 73 20 6E 6F 74 20 63 75 72 72 65 6E 74 6C 79 20 74 72 61 64 69 6E 67 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Series not currently trading
ReservedInternal	00	Ignore
NumberOfReturn Bitfields	02	Two bitfields to follow
ReturnBitfield1	00	No bitfields from byte 1
ReturnBitfield2	01	*Symbol*
Symbol	30 30 51 30 6B 41 00 00	00Q0kA

4.2.6 Order Modified

`Order Modified` messages are sent in response to a `Modify Request` to indicate that the order has been successfully modified.

Note: You must opt-in to receiving *LeavesQty* in `Order Modified` messages. In some cases, the last message to be received on an order's lifecycle will be an `Order Modified` message. The way to know the order is no longer live is to inspect *LeavesQty*. An example of this would be modification of an order whilst an execution is being generated, resulting in the order being reduced to zero outstanding quantity.

Permitted return optional fields are described in 'Section 6.6 – Order Modified'.

Field	**Offset**	**Length**	**Data Type**	**Description**
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x27`
MatchingUnit	5	1	Binary	The Matching Unit which created this message. Matching units in BOE correspond to Matching Units on Multicast PITCH.
SequenceNumber	6	4	Binary	The sequence number for this message. Distinct per Matching Unit.
TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).
ClOrdID	18	20	Text	Client order ID. This is the *ClOrdID* from the Modify Order message.
OrderID	38	8	Binary	Corresponds to *OrderID* (37) in Cboe FIX. The unique *OrderID*. Modifications do *not* change the *OrderID*.
ReservedInternal	46	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	47	1	Binary	Number of bitfields to follow.
ReturnBitfield^1	48	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield^n		1	Binary	Last bitfield.
Optional fields. . .				

Example Order Modified Message:

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes.
MessageLength	35 00	63 bytes
MessageType	27	`Order Modified`
MatchingUnit	03	Matching Unit 3
SequenceNumber	64 00 00 00	Sequence number 100
TransactionTime	E0 FA 20 F7 36 71 F8 11	1,294,909,373,757,324,000
ClOrdID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123
OrderID	05 10 1E B7 5E 39 2F 02	171WC1000005 (base 36)
ReservedInternal	00	Ignore
NumberOfReturnBitfields	05	Five bitfields to follow
ReturnBitfield1	04	*Price*
ReturnBitfield2	00	No fields from byte 2
ReturnBitfield3	00	No fields from byte 3
ReturnBitfield4	00	No fields from byte 4
ReturnBitfield5	02	*LeavesQty*
Price	08 E2 01 00 00 00 00 00	12.34
LeavesQty	00 00 00 00	0 (order done)

4.2.7 Order Restated

`Order Restated` messages are sent to inform the Member that an order has been asynchronously modified for some reason without an explicit `Modify Order` request having been sent. Some example (non-exhaustive) reasons for `Order Restated` messages being sent:

- A reserve (iceberg) order has been reloaded (BZX and C2 Only).
- An order's remaining quantity was decremented because of a prevented wash trade.
- A routed order has returned to rest on the book after matching liquidity on another market.

Members should be prepared to accept and apply `Order Restated` messages for any reason. The return bitfields indicate the characteristics of the order which have changed. Optional fields will be present at the end of the message with the new values.

Note: You must opt-in to receiving *LeavesQty* in `Order Restated` messages. In some cases, the last message to be received on an order's lifecycle will be an `Order Restated` message. The way to know the order is no longer live is to inspect *LeavesQty*. An example of this would be restatement of an order in some cases due to *PreventMatch* being set to d.

Permitted return optional fields are described in 'Section 6.7 – Order Restated'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x28`
MatchingUnit	5	1	Binary	The Matching Unit which created this message. Matching units in BOE correspond to Matching Units on Multicast PITCH.
SequenceNumber	6	4	Binary	The sequence number for this message. Distinct per Matching Unit.
TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).

ClOrdID	18	20	Text	The *ClOrdID* is the identifier from the open order.
OrderID	38	8	Binary	Corresponds to *OrderID* (37) in Cboe FIX. The unique *OrderID*. For informational purposes only. Restatements do *not* change the *OrderID*.
RestatementReason	46	1	Alphanumeric	The reason for this Order Restated message. L = Reload P = Peg or Price Sliding Reprice Q = Liquidity Updated R = Reroute S = Ship and Post (SWP) W = Wash Cboe reserves the right to add new values as necessary without prior notice.
ReservedInternal	47	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	48	1	Binary	Number of bitfields to follow.
ReturnBitfield^1	49	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield^n		1	Binary	Last bitfield.
Optional fields. . .				

Example Order Restated Message for a reserve (iceberg) reload:

Field Name	**Hexadecimal**	**Notes**
StartOfMessage	BA BA	Start of message bytes.
MessageLength	41 00	65 bytes
MessageType	27	Order Restated
MatchingUnit	03	Matching Unit 3
SequenceNumber	64 00 00 00	Sequence number 100
TransactionTime	E0 FA 20 F7 36 71 F8 11	1,294,909,373,757,324,000
ClOrdID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123
OrderID	05 10 1E B7 5E 39 2F 02	171WC1000005 (base 36)
RestatementReason	4C	L = Reload
ReservedInternal	00	Ignore
NumberOfReturn Bitfields	06	Six bitfields to follow
ReturnBitfield1	00	No fields from byte 1
ReturnBitfield2	00	No fields from byte 2
ReturnBitfield3	00	No fields from byte 3
ReturnBitfield4	00	No fields from byte 4
ReturnBitfield5	02	*LeavesQty*
ReturnBitfield6	01	*SecondaryOrderID*
LeavesQty	64 00 00 00	100 contracts
SecondaryOrderID	0A 10 1E B7 5E 39 2F 02	171WC100000A (base 36)

4.2.8 User Modify Rejected

`User Modify Rejected` messages are sent in response to a `Modify Order` for an order which cannot be modified. `User Modify Rejected` messages are unsequenced.

This message corresponds to a FIX Execution Report with *MsgType* (35) = 9 (Order Cancel Reject) and *CxlRejResponseTo* (434) = 2 (Order Cancel/Replace Request).

Permitted return optional fields are described in 'Section 6.8 – User Modify Rejected'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x29`
MatchingUnit	5	1	Binary	Unsequenced application message. Matching unit will be set to 0.
SequenceNumber	6	4	Binary	Unsequenced application message. Sequence number will be set to 0.
TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).
ClOrdID	18	20	Text	The *ClOrdID* of the modify request which was rejected.
ModifyReject Reason	38	1	Text	Reason for a modify rejection. See **Reason Codes** for a list of possible reasons.
Text	39	60	Text	Human readable text with more information about the reject reason.
ReservedInternal	99	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	100	1	Binary	Number of bitfields to follow.
ReturnBitfield^1	101	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield^n		1	Binary	Last bitfield.
Optional fields. . .				

Example User Modify Rejected Message:

Field Name	Hexadecimal	Notes
StartOfMessage	`BA BA`	Start of message bytes.
MessageLength	`63 00`	99 bytes
MessageType	`29`	`User Modify Rejected`
MatchingUnit	`00`	Unsequenced Message, unit = 0
SequenceNumber	`00 00 00 00`	Unsequenced Message, sequence = 0
TransactionTime	`E0 FA 20 F7 36 71 F8 11`	1,294,909,373,757,324,000
ClOrdID	`41 42 43 31 32 33 00 00 00 00`	ABC123
	`00 00 00 00 00 00 00 00 00 00`	
ModifyRejectReason	`50`	Pending Fill
Text	`50 65 6E 64 69 6E 67 00 00 00`	Pending
	`00 00 00 00 00 00 00 00 00 00`	
	`00 00 00 00 00 00 00 00 00 00`	
	`00 00 00 00 00 00 00 00 00 00`	
	`00 00 00 00 00 00 00 00 00 00`	
	`00 00 00 00 00 00 00 00 00 00`	
ReservedInternal	`00`	Ignore

NumberOfReturn Bitfields	00	No optional fields

4.2.9 Order Cancelled

An order has been cancelled. Permitted return optional fields are described in 'Section 6.9 – Order Cancelled'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x2A`
MatchingUnit	5	1	Binary	The matching unit which created this message. Matching units in BOE correspond to matching units on Multicast PITCH.
SequenceNumber	6	4	Binary	The sequence number for this message. Distinct per matching unit.
TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).
ClOrdID	18	20	Text	The order which was cancelled.
CancelReason	38	1	Text	Reason for the order cancellation. See **Reason Codes** for a list of possible reasons.
ReservedInternal	39	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	40	1	Binary	Number of bitfields to follow.
ReturnBitfield[1]	41	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield[n]		1	Binary	Last bitfield.
Optional fields. . .				

Example Order Cancelled Message:

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes
MessageLength	48 00	72 bytes
MessageType	2A	`Order Cancelled`
MatchingUnit	03	Matching Unit 3
SequenceNumber	64 00 00 00	Sequence number 100
TransactionTime	E0 FA 20 F7 36 71 F8 11	1,294,909,373,757,324,000
ClOrdID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123
CancelReason	55	U = User Requested
ReservedInternal	00	Ignore
NumberOfReturn Bitfields	05	Five bitfields to follow
ReturnBitfield1	00	No fields from byte 1
ReturnBitfield2	00	No fields from byte 2
ReturnBitfield3	06	*ClearingFirm*, *ClearingAccount*
ReturnBitfield4	00	No fields from byte 4
ReturnBitfield5	01	*OrigClOrdID*
ClearingFirm	54 45 53 54	TEST

ClearingAccount	`31 32 33 34`	1234
OrigClOrdID	`41 42 43 31 32 31 00 00 00 00`	ABC121
	`00 00 00 00 00 00 00 00 00 00`	

4.2.10 Cross Order Cancelled (EDGX Only)

A `New Order Cross` has been cancelled. Individual order allocations from the original `New Order Cross` message will be echoed back in the repeating groups.

In each repeating group, the *ClOrdID* and *OrderId* are always returned. Beyond that, the bits specified in the optional return bitfields parameter group control which fields are returned. Any fields that appear in the repeating groups will not appear in the optional fields that come after the repeating groups.

Permitted return optional fields are described in 'Section 6.10 – Cross Order Cancelled'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x46`
MatchingUnit	5	1	Binary	The matching unit which created this message. Matching units in BOE correspond to matching units on Multicast PITCH.
SequenceNumber	6	4	Binary	The sequence number for this message. Distinct per matching unit.
TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).
CrossID	18	20	Text	The cross order which was cancelled.
CancelReason	38	1	Text	Reason for the order cancellation. See **Reason Codes** for a list of possible reasons.
ReservedInternal	39	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	40	1	Binary	Number of bitfields to follow.
ReturnBitfield^1	41	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield^n		1	Binary	Last bitfield.
GroupCnt		2	Binary	Number of order allocations represented by repeating groups included in this message.
Repeating Groups Of…				
ClOrdID		20	Text	Copied from original cross order.
OrderID		8	Binary	The order id of the cross order that was cancelled.
Side (Optional)		1	Alphanumeric	See **List of Optional Fields**.
AllocQty (Optional)		4	Binary	See **List of Optional Fields**.
Capacity (Optional)		1	Alpha	See **List of Optional Fields**.
OpenClose		1	Alphanumeric	See **List of Optional Fields**.

(Optional)				
GiveUpFirmID (Optional)		4	Alpha	See **List of Optional Fields**.
Account (Optional)		16	Text	See **List of Optional Fields**.
CMTANumber (Optional)		4	Binary	See **List of Optional Fields**.
ClearingAccount (Optional)		4	Text	See **List of Optional Fields**.
Optional fields. . .				Optional fields as set in the bitmap. Note, optional fields that occur in the repeating groups appear above, repeating per group, not within this block.

Example Cross Order Cancelled Message:

Field Name	**Hexadecimal**	**Notes**
StartOfMessage	`BA BA`	Start of message bytes
MessageLength	`8A 00`	138 bytes
MessageType	`46`	`Cross Order Cancelled`
MatchingUnit	`02`	Matching Unit 2
SequenceNumber	`01 00 00 00`	Sequence number 1
TransactionTime	`E0 FA 20 F7 36 71 F8 11`	1,294,909,373,757,324,000
ClOrdID	`4E 5A 31 56 37 42 4A 5F 41 63 63 65 70 74 42 75 79 00 00 00`	NZ1V7BJ_AcceptBuy
CancelReason	`55`	U = User Requested
ReservedInternal	`00`	Ignore
NumberOfReturn Bitfields	`02`	Two bitfields to follow
ReturnBitfield1	`00`	No fields from byte 1
ReturnBitfield2	`41`	*Symbol, Capacity*
GroupCnt	`03 00`	Two repeating groups to follow
ClOrdID	`4E 5A 31 56 37 47 4E 5F 61 67 65 6E 63 79 00 00 00 00 00 00`	NZ1V7GN_agency
OrderID	`02 C0 91 A2 94 AB 78 04`	2G4GYK000002 (base 36)
Capacity	`43`	C = Customer
ClOrdID	`4E 5A 31 56 37 4B 46 5F 63 6F 6E 74 72 61 31 00 00 00 00 00`	NZ1V7KF_contra1
OrderID	`03 C0 91 A2 94 AB 78 04`	2G4GYK000003 (base 36)
Capacity	`46`	F = Firm
ClOrderID	`4E 5A 31 56 37 4E 48 5F 63 6F 6E 74 72 61 32 00 00 00 00 00`	NZ1V7NH_contra2
OrderID	`04 C0 91 A2 94 AB 78 04`	2G4GYK000004 (base 36)
Capacity	`46`	F = Firm
Symbol	`30 30 51 30 6B 41 00 00`	00Q0kA

4.2.11 Cancel Rejected

A `Cancel Rejected` message is sent in response to a `Cancel Order` message to indicate that the cancellation cannot occur. `Cancel Rejected` messages are unsequenced.

Permitted return bitfields are described in 'Section 6.11 – Cancel Rejected'.

Field	**Offset**	**Length**	**Data Type**	**Description**
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.

MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	0x2B
MatchingUnit	5	1	Binary	Unsequenced application message. Matching unit will be set to 0.
SequenceNumber	6	4	Binary	Unsequenced application message. Sequence number will be set to 0.
TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).
ClOrdID	18	20	Text	The order whose cancel was rejected.
CancelRejectReason	38	1	Text	Reason for the order cancellation. See **Reason Codes** for a list of possible reasons.
Text	39	60	Text	Human readable text with more information about the reject reason.
ReservedInternal	99	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	100	1	Binary	Number of bitfields to follow.
ReturnBitfield^1	101	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield^n		1	Binary	Last bitfield.
Optional fields. . .				

Example Cancel Rejected Message:

Field Name	Hexadecimal	Notes
StartOfMessage	BA BA	Start of message bytes
MessageLength	63 00	99 bytes
MessageType	2B	Cancel Rejected
MatchingUnit	00	Unsequenced Message, unit = 0
SequenceNumber	00 00 00 00	Unsequenced Message, sequence = 0
TransactionTime	E0 FA 20 F7 36 71 F8 11	1,294,909,373,757,324,000
ClOrdID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123
CancelRejectReason	4A	J
Text	54 4F 4F 20 4C 41 54 45 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	TOO LATE
ReservedInternal	00	Ignore
NumberOfReturn Bitfields	00	No optional fields

4.2.12 Order Execution

An `Order Execution` is sent for each fill on an order.

Rather than returning a monetary value indicating the rebate or charge for an execution, the *FeeCode* is an indication of a fee classification corresponding to an item on the venue's fee schedule.

For executions involving complex orders (EDGX or C2 only), an `Order Execution` message will be generated for the complex order, with *MultilegReportingType* = 3, followed by `Order Execution` messages for each leg, with *MultilegReportingType* = 2. You must opt-in to receiving this optional field on Order Execution messages at login in order to receive this field.

The symbology used on executions for complex orders, including the legs, will **always** be Cboe symbology.

Permitted return bitfields are described in 'Section 6.12 – Order Execution'.

<table>
<tr><th>Field</th><th>Offset</th><th>Length</th><th>Data Type</th><th>Description</th></tr>
<tr><td>StartOfMessage</td><td>0</td><td>2</td><td>Binary</td><td>Must be <code>0xBA 0xBA</code>.</td></tr>
<tr><td>MessageLength</td><td>2</td><td>2</td><td>Binary</td><td>Number of bytes for the message, including this field but not including the two bytes for the StartOfMessage field.</td></tr>
<tr><td>MessageType</td><td>4</td><td>1</td><td>Binary</td><td><code>0x2C</code></td></tr>
<tr><td>MatchingUnit</td><td>5</td><td>1</td><td>Binary</td><td>The matching unit which created this message. Matching units in BOE correspond to matching units on Multicast PITCH.</td></tr>
<tr><td>SequenceNumber</td><td>6</td><td>4</td><td>Binary</td><td>The sequence number for this message. Distinct per matching unit.</td></tr>
<tr><td>TransactionTime</td><td>10</td><td>8</td><td>DateTime</td><td>The time the event occurred in the Cboe Matching Engine (not the time the message was sent).</td></tr>
<tr><td>ClOrdID</td><td>18</td><td>20</td><td>Text</td><td>Order receiving the execution.</td></tr>
<tr><td>ExecID</td><td>38</td><td>8</td><td>Binary</td><td>Corresponds to ExecID (17) in Cboe FIX.

Execution ID. Unique across all matching units on a given day. Note: ExecIDs will be represented on ODROP and FIXDROP ports as nine character, base 36 ASCII. Leading zeros should be added if the converted base 36 value is shorter than nine characters.

Example conversion:
<table>
<tr><th>Decimal</th><th>Base 36</th></tr>
<tr><td>28294005440239</td><td>A1234B567</td></tr>
<tr><td>76335905726621</td><td>R248BC23H</td></tr>
<tr><td>728557228187</td><td>09AP05V2Z</td></tr>
</table></td></tr>
<tr><td>LastShares</td><td>46</td><td>4</td><td>Binary</td><td>Corresponds to LastShares (32) in Cboe FIX.

Executed share quantity.</td></tr>
<tr><td>LastPx</td><td>50</td><td>8</td><td>Binary Price</td><td>Corresponds to LastPx (31) in Cboe FIX.

Price of this fill. Note the use of Binary Price type to represent positive and negative prices, which can occur with complex instruments.</td></tr>
<tr><td>LeavesQty</td><td>58</td><td>4</td><td>Binary</td><td>Corresponds to LeavesQty (151) in Cboe FIX.

Quantity still open for further execution. If zero, the order is complete.</td></tr>
<tr><td>BaseLiquidity Indicator</td><td>62</td><td>1</td><td>Alphanumeric</td><td>Indicates whether the trade added or removed liquidity.

A = Added Liquidity
R = Removed Liquidity
X = Routed to Another Market
C = Auction/Uncrossing</td></tr>
<tr><td>SubLiquidityIndicator</td><td>63</td><td>1</td><td>Alphanumeric</td><td>Cboe may add additional values without notice. Members must gracefully ignore unknown values.

ASCII NUL (<code>0x00</code>) = No additional information</td></tr>
</table>

				S = Execution from order that set the NBBO B = Step Up Mechanism (EDGX Only) b = Bats Auction Mechanism (EDGX Only)
ContraBroker	64	4	Alphanumeric	Corresponds to *ContraBroker* (375) in Cboe FIX. Internally matched executions will identify the OCC clearing number on the execution. All externally matched (routed) executions will identify the away exchange. `AMEX` = Routed to NYSE American `ARCA` = Routed to NYSE Arca `BATS` = Routed to Cboe BZX Exchange* `BOX` = Routed to BOX `CBOE` = Routed to CBOE `CTWO` = Routed to C2 `EDGX` = Routed to Cboe EDGX Exchange* `GMNI` = Routed to Nasdaq GEMX `ISE` = Routed to Nasdaq ISE `MERC` = Routed to Nasdaq MRX `MIAX` = Routed to MIAX Options Exchange `NOMX` = Routed to Nasdaq `NOBX` = Routed to Nasdaq BX `PERL` = Routed to MIAX PEARL `PHLX` = Routed to Nasdaq PHLX
ReservedInternal	68	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	69	1	Binary	Number of bitfields to follow.
ReturnBitfield[1]	70	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield^n		1	Binary	Last bitfield.
Optional fields…				

Example Order Execution Message:

Field Name	**Hexadecimal**	**Notes**
StartOfMessage	`BA BA`	Start of message bytes
MessageLength	`53 00`	83 bytes
MessageType	`2C`	`Order Execution`
MatchingUnit	`03`	Matching Unit 3
SequenceNumber	`64 00 00 00`	Sequence number 100
TransactionTime	`E0 FA 20 F7 36 71 F8 11`	1,294,909,373,757,324,000
ClOrdID	`41 42 43 31 32 33 00 00 00 00` `00 00 00 00 00 00 00 00 00 00`	ABC123
ExecID	`01 F0 B7 D9 71 21 00 00`	D19800001 (base 36)
LastShares	`64 00 00 00`	100 contracts
LastPx	`08 E2 01 00 00 00 00 00`	12.34
LeavesQty	`14 00 00 00`	20 contracts
BaseLiquidityIndicator	`41`	A = Added
SubLiquidityIndicator	`00`	(unset)
ContraBroker	`43 46 45 00`	BATS
ReservedInternal	`00`	Ignore
NumberOfReturn Bitfields	`03`	Three bitfields to follow

ReturnBitfield1	`00`	No bitfields from byte 1
ReturnBitfield2	`00`	No bitfields from byte 2
ReturnBitfield3	`46`	*ClearingFirm, ClearingAccount, OrderQty*
ClearingFirm	`54 45 53 54`	TEST
ClearingAccount	`31 32 33 43`	1234
OrderQty	`78 00 00 00`	120 contracts

4.2.13 Trade Cancel or Correct

Used to relay a trade which has been cancelled (busted) or corrected (price or size change only). The *CorrectedPrice* and optional *CorrectedSize* fields will be set to 0 for cancelled trades and to the new trade price and/or size for corrected trades. `Trade Cancel or Correct` can be sent for same day as well as previous day trades.

Trade cancels or corrections to complex instruments will result in individual `Trade Cancel or Correct` messages being sent for each leg. No cancels or corrections will be sent for complex instruments.

Permitted return bitfields are described in 'Section 6.13 – Trade Cancel or Correct'.

Field	**Offset**	**Length**	**Data Type**	**Description**
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x2D`
MatchingUnit	5	1	Binary	The matching unit which created this message. Matching units in BOE correspond to matching units on Multicast PITCH.
SequenceNumber	6	4	Binary	The sequence number for this message. Distinct per matching unit.
TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).
ClOrdID	18	20	Text	*ClOrdID* of the order whose fill is being cancelled or corrected.
OrderID	38	8	Binary	Corresponds to *OrderID* (37) in Cboe FIX. Order whose fill is being cancelled or corrected.
ExecRefID	46	8	Binary	Corresponds to *ExecRefID* (19) in Cboe FIX. Refers to the *ExecID* of the fill being cancelled or corrected.
Side	54	1	Alphanumeric	Side of the order.
BaseLiquidity Indicator	55	1	Alphanumeric	Indicates whether the trade added or removed liquidity. A = Added Liquidity R = Removed Liquidity X = Routed to Another Market C = Auction/Uncrossing
ClearingFirm	56	4	Alpha	Echoed back from the original order.
ClearingAccount	60	4	Text	Echoed back from the original order.
LastShares	64	4	Binary	Number of shares of the trade being cancelled.
LastPx	68	8	Binary Price	Price of the trade being cancelled. Note the use of *Binary Price* type to represent positive and negative prices, which can occur with complex instruments.

CorrectedPrice	76	8	Binary Price	For trade corrections, this is the new trade price. For trade breaks, this is set to 0.
OrigTime	84	8	DateTime	Corresponds to *OrigTime* (42). The date and time of the original trade, in GMT.
ReservedInternal	92	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	93	1	Binary	Number of bitfields to follow.
ReturnBitfield[1]	94	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield[n]		1	Binary	Last bitfield.
Optional fields. . .				

Example Trade Cancel or Correct Message:

Field Name	**Hexadecimal**	**Notes**
StartOfMessage	BA BA	Start of message bytes.
MessageLength	76 00	118 bytes
MessageType	2D	`Trade Cancel or Correct`
MatchingUnit	03	Matching Unit 3
SequenceNumber	64 00 00 00	Sequence number 100
TransactionTime	E0 FA 20 F7 36 71 F8 11	1,294,909,373,757,324,000
ClOrdID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123
OrderID	05 10 1E B7 5E 39 2F 02	171WC1000005 (base 36)
ExecRefID	01 F0 B7 D9 71 21 00 00	D19800001 (base 36)
Side	31	Buy
BaseLiquidity Indicator	41	A = Added
ClearingFirm	54 45 53 54	TEST
ClearingAccount	00 00 00 00	(empty)
LastShares	64 00 00 00	100 contracts
LastPx	70 17 00 00 00 00 00 00	0.60
CorrectedPrice	00 00 00 00 00 00 00 00	0 (cancelled)
OrigTime	E0 BA 75 95 15 4C EB 11	1,291,209,373,757,324,000
ReservedInternal	00	Ignore
NumberOfReturn Bitfields	04	Four bitfields to follow
ReturnBitfield1	00	No fields from byte 1
ReturnBitfield2	01	*Symbol*
ReturnBitfield3	00	No fields from byte 3
ReturnBitfield4	17	*MaturityDate, StrikePrice, PutOrCall, OpenClose*
Symbol	30 30 51 30 6B 41 00 00	00Q0kA
MaturityDate	EF DB 32 01	2011-03-19
StrikePrice	98 AB 02 00 00 00 00 00	17.50
PutOrCall	31	1 = Call
OpenClose	4F	O = Open

4.2.14 Purge Rejected

A `Purge Rejected` message is sent in response to a `Purge Orders` message to indicate that the mass cancellation cannot occur. `Purge Rejected` messages are unsequenced.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA` `0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x48`
MatchingUnit	5	1	Binary	Unsequenced application message. Matching unit will be set to 0.
SequenceNumber	6	4	Binary	Unsequenced application message. Sequence number will be set to 0.
TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).
PurgeRejectReason	18	1	Text	Reason for a purge rejection. See **Reason Codes** for a list of possible reasons.
Text	19	60	Text	Human readable text with more information about the reject reason.
ReservedInternal	79	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	80	1	Binary	Number of bitfields to follow.
ReturnBitfield$_1$	81	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield$_n$		1	Binary	Last bitfield.
Optional fields. . .				

Example Purge Rejected Message:

Field Name	Hexadecimal	Notes
StartOfMessage	`BA BA`	Start of message bytes.
MessageLength	`72 00`	114 bytes
MessageType	`48`	Purge Rejected
MatchingUnit	`00`	Unsequenced Message, unit = 0
SequenceNumber	`00 00 00 00`	Unsequenced Message, sequence = 0
TransactionTime	`E0 FA 20 F7 36 71 F8 11`	1,294,909,373,757,324,000
PurgeRejectReason	`41`	A

Text	`41 44 4D 49 4E 00 00 00 00 00`
	`00 00 00 00 00 00 00 00 00 00`
	`00 00 00 00 00 00 00 00 00 00`
	`00 00 00 00 00 00 00 00 00 00`
	`00 00 00 00 00 00 00 00 00 00`
	`00 00 00 00 00 00 00 00 00 00`
		ADMIN

ReservedInternal	`00`	Ignore
NumberOfReturn Bitfields	`0F`	15 bitfields to follow
ReturnBitfield1	`00`	No fields from byte 1
ReturnBitfield2	`00`	No fields from byte 2
ReturnBitfield3	`00`	No fields from byte 3
ReturnBitfield4	`00`	No fields from byte 4
ReturnBitfield5	`00`	No fields from byte 5

ReturnBitfield6	00	No fields from byte 6
ReturnBitfield7	00	No fields from byte 7
ReturnBitfield8	00	No fields from byte 8
ReturnBitfield9	00	No fields from byte 9
ReturnBitfield10	00	No fields from byte 10
ReturnBitfield11	00	No fields from byte 11
ReturnBitfield12	00	No fields from byte 12
ReturnBitfield13	00	No fields from byte 13
ReturnBitfield14	00	No fields from byte 14
ReturnBitfield15	08	*MassCancelID*
MassCancelID	54 45 53 54 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	TEST

4.2.15 Mass Cancel Acknowledgment

A `Mass Cancel Acknowledgment` is an unsequenced message sent when a `Cancel Order` or `Purge Orders` message requesting a mass cancellation has completed cancelling all individual orders.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x36`
MatchingUnit	5	1	Binary	Unsequenced application message. Matching unit will be set to 0.
SequenceNumber	6	4	Binary	Unsequenced application. Message. Sequence number will be set to 0.
TransactionTime	10	8	DateTime	The time in the order entry gateway when the final matching engine event was received to complete the mass cancel.
MassCancelID	18	20	Text	Copied from the *MassCancelID* passed on the original `Cancel Order` or `Purge Orders`. This field corresponds to *MassCancelID* (7695) in Cboe FIX.
CancelledOrder Count	38	4	Binary	Number of orders cancelled. This field corresponds to *CancelledOrderCount* (7696) in Cboe FIX.
ReservedInternal	42	1	Binary	Reserved for Cboe internal use.

Example Mass Cancel Acknowledgment Message:

Field Name	Hexadecimal	Notes
StartOfMessage	BA	Start of message bytes.
MessageLength	29 00	41 bytes
MessageType	36	`Mass Cancel Acknowledgment`
MatchingUnit	00	Unsequenced Message, unit = 0
SequenceNumber	00 00 00 00	Unsequenced Message, sequence = 0
TransactionTime	E0 FA 20 F7 36 71 F8 11	1,294,909,373,757,324,000
MassCancelID	41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00	ABC123
CancelledOrderCount	63 00 00 00	99 orders were cancelled
ReservedInternal	00	Ignore

4.2.16 Complex Instrument Accepted (EDGX and C2 Only)

The `Complex Instrument Accepted` is used to indicate acceptance of a complex strategy. The leg order sent back may differ from the originating request; *RevisedLegs* will indicate if the leg order has been altered from the original request.

Permitted return bitfields are described in 'Section 6.14 – Complex Instrument Accepted'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.
MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x4D`
MatchingUnit	5	1	Binary	The matching unit which created this message. Matching units in BOE correspond to matching units on Multicast PITCH.
SequenceNumber	6	4	Binary	The sequence number for this message. Distinct per matching unit.
TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).
ClOrdID	18	20	Text	Echoed back from the original request.
Symbol	38	8	Alphanumeric	The complex instrument id.
RevisedLegs	46	1	Alphanumeric	Indicates if the legs on the created complex strategy have been reordered from the original request. If the legs were reordered, the order of the Open-Close fields on a `New Complex Order` must be the order returned by the exchange, not the order from the original request. 1 = Legs were not reordered 2 = Legs were reordered
NoOfSecurities	47	4	Binary	Correspondes to *NoOfSecurities* (8641) in Cboe FIX. Indicates the number of securities created by the member in the trading session.
ReservedInternal	51	1	Binary	Reserved for Cboe internal use.
NumberOf ReturnBitfields	52	1	Binary	Number of bitfields to follow.
ReturnBitfield¹	53	1	Binary	Bitfield identifying fields to follow.
…				
ReturnBitfieldⁿ		1	Binary	Last bitfield.
NoLegs		1	Binary	Echoed back from the original request.

Repeating Group *ComplexLeg* must occur the number of times specified in *NoLegs*. Each field occurs in each group, in order as shown below. Optional fields occur only if corresponding bits in bitfields are set.

LegSymbol	8	Alphanumeric	Corresponds to *LegSymbol* (600) in Cboe FIX. Entire Cboe format symbol or OSI Root. **Must send *LegCFICode*, *LegMaturityDate*, and *LegStrikePrice* if using OSI format.**

LegCFICode	6	Alphanumeric	Corresponds to *LegCFICode* (608) in Cboe FIX. CFI Code for leg. Required if *LegSymbol* is in OSI format. OP = Options Put OC = Options Call
LegMaturityDate	4	Date	Corresponds to *LegMaturityDate* (611) in Cboe FIX. Required if *LegSymbol* is in OSI format.
LegStrikePrice	8	Binary Price	Corresponds to *LegStrikePrice* (612) in Cboe FIX. Option strike price. System maximum is 99,999,999. Must be non-negative. Required if *LegSymbol* is in OSI format.
LegRatioQty	4	Binary	Corresponds to *LegRatioQty* (623) in Cboe FIX. Ratio of number of contracts in this leg per order quantity. Must be between 1 and 99,999.
LegSide	1	Alphanumeric	Corresponds to *LegSide* (624) in Cboe FIX. 1 = Buy 2 = Sell

.

Optional fields…				Optional fields as set in the bitmap. Note, optional fields that occur in the repeating groups appear above, repeating per group, not within this block.

Example Complex Instrument Accepted Message:

Field Name	**Hexadecimal**	**Notes**
StartOfMessage	`BA BA`	Start of message bytes.
MessageLength	`7C 00`	124 bytes
MessageType	`4D`	`Complex Instrument Accepted`
MatchingUnit	`03`	Matching Unit 3
SequenceNumber	`64 00 00 00`	Sequence number 100
TransactionTime	`E0 FA 20 F7 36 71 F8 11`	1,294,909,373,757,324,000
ClOrdID	`41 42 43 31 32 33 00 00 00 00` `00 00 00 00 00 00 00 00 00 00`	ABC123
Symbol	`5A 4E 4B 38 46 43 00 00`	ZNK8FC
RevisedLegs	`30`	Legs accepted as sent
NoOfSecurities	`04 00 00 00`	Four complex strategies created by sender
NumberOfReturn Bitfields	`0D`	13 bitfields to follow
ReturnBitfield1	`00`	No fields from byte 1
ReturnBitfield2	`00`	No fields from byte 2
ReturnBitfield3	`00`	No fields from byte 3
ReturnBitfield4	`00`	No fields from byte 4
ReturnBitfield5	`00`	No fields from byte 5
ReturnBitfield6	`00`	No fields from byte 6
ReturnBitfield7	`00`	No fields from byte 7
ReturnBitfield8	`00`	No fields from byte 8
ReturnBitfield9	`00`	No fields from byte 9
ReturnBitfield10	`00`	No fields from byte 10

ReturnBitfield11	`00`	No fields from byte 11
ReturnBitfield12	`00`	No fields from byte 12
ReturnBitfield13	`06`	*LegCFICode, LegMaturityDate, LegStrikePrice*
NoLegs	`02`	Two legs
LegSymbol	`4D 53 46 54 00 00 00 00`	MSFT
LegCFICode	`4F 43 00 00 00 00`	OC = Option Call
LegMaturityDate	`EF DB 32 01`	2011-03-19
LegStrikePrice	`98 AB 02 00 00 00 00 00`	17.50
LegRatioQty	`02 00 00 00`	Ratio of 2
LegSide	`31`	Buy
LegSymbol	`4D 53 46 54 00 00 00 00`	MSFT
LegCFICode	`4F 50 00 00 00 00`	OP = Option Put
LegMaturityDate	`F6 DB 32 01`	2011-03-26
LegStrikePrice	`30 E6 02 00 00 00 00 00`	19.00
LegRatioQty	`01 00 00 00`	Ratio of 1
LegSide	`32`	Sell

Example Minimal Complex Instrument Accepted Message:

Field Name	Hexadecimal	Notes
StartOfMessage	`BA BA`	Start of message bytes.
MessageLength	`47 00`	71 bytes
MessageType	`4D`	`Complex Instrument Accepted`
MatchingUnit	`03`	Matching Unit 3
SequenceNumber	`64 00 00 00`	Sequence number 100
TransactionTime	`E0 FA 20 F7 36 71 F8 11`	1,294,909,373,757,324,000
ClOrdID	`41 42 43 31 32 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00`	ABC123
Symbol	`5A 4E 4B 38 46 43 00 00`	ZNK8FC
RevisedLegs	`30`	Legs accepted as sent
NoOfSecurities	`04 00 00 00`	Four complex strategies created by sender
NumberOfReturn Bitfields	`00`	No bitfields follow
NoLegs	`02`	Two legs
LegSymbol	`30 30 51 30 6B 41 00 00`	00Q0kA
LegRatioQty	`02 00 00 00`	Ratio of 2
LegSide	`31`	Buy
LegSymbol	`30 30 51 33 6B 43 00 00`	00Q3kC
LegRatioQty	`01 00 00 00`	Ratio of 1
LegSide	`32`	Sell

4.2.17 Complex Instrument Rejected (EDGX and C2 Only)

The `Complex Instrument Rejected` message is used to indicate that a requested complex strategy has been rejected. `Complex Instrument Rejected` messages are unsequenced.

Permitted return bitfields are described in 'Section 6.15 – Complex Instrument Rejected'.

Field	Offset	Length	Data Type	Description
StartOfMessage	0	2	Binary	Must be `0xBA 0xBA`.

MessageLength	2	2	Binary	Number of bytes for the message, including this field but not including the two bytes for the *StartOfMessage* field.
MessageType	4	1	Binary	`0x4E`
MatchingUnit	5	1	Binary	Unsequenced application message. Matching unit will be set to 0.
SequenceNumber	6	4	Binary	Unsequenced application message. Sequence number will be set to 0.
TransactionTime	10	8	DateTime	The time the event occurred in the Cboe Matching Engine (not the time the message was sent).
ClOrdID	18	20	Text	Echoed back from the original request.
OrderRejectReason	38	1	Text	Reason for an order rejection. See **Reason Codes** for a list of possible reasons.
Text	39	60	Text	Human readable text with more information about the reject reason.
NoOfSecurities	99	4	Binary	Indicates the number of securities created by the member in this trading session.
ReservedInternal	103	1	Binary	Reserved for Cboe internal use.
NumberOfReturn Bitfields	104	1	Binary	Number of bitfields to follow.
ReturnBitfield^1	105	1	Binary	Bitfield identifying fields to return.
…				
ReturnBitfield^n		1	Binary	Last bitfield.
Optional fields. . .				

Example Complex Instrument Rejected Message:

Field Name	**Hexadecimal**	**Notes**
StartOfMessage	`BA BA`	Start of message bytes
MessageLength	`67 00`	103 bytes
MessageType	`4E`	`Complex Instrument Rejected`
MatchingUnit	`0`	Unsequenced message, unit = 0
SequenceNumber	`00 00 00 00`	Unsequenced message, sequence = 0
TransactionTime	`E0 FA 20 F7 36 71 F8 11`	1,294,909,373,757,324,000
ClOrdID	`41 42 43 31 32 33 00 00 00 00` `00 00 00 00 00 00 00 00 00 00`	ABC123
OrderRejectReason	`44`	D

Text	`44 75 70 6C 69 63 61 74 65 20`
	`43 6C 4F 72 64 49 44 00 00 00`
	`00 00 00 00 00 00 00 00 00 00`
	`00 00 00 00 00 00 00 00 00 00`
	`00 00 00 00 00 00 00 00 00 00`
	`00 00 00 00 00 00 00 00 00 00`
		Duplicate ClOrdID

NoOfSecurities	`04 00 00 00`	Four complex strategies created by sender
ReservedInternal	`00`	Ignore
NumberOfReturn Bitfields	`00`	No bitfields follow

5 Input Bitfields Per Message

Legend:

- **R** Indicates that the field must be specified for a message
- ● Indicates that the field can be specified for a message
- – Indicates that the field cannot be requested for a message
- (Blank) Indicates that the field is not used by Cboe Options and cannot be specified for a message

Input messages that containing invalid fields (i.e., Blank) will be rejected. In the case of rejected input messages, the associated `Reject` message sent back to the customer will contain a 'RejectReason' code non-optional field (See Section 9 - Reason Codes) and a 'Text' non-optional field containing descriptive text.

5.1 New Order

Byte	Bit	Field	
1	1	*ClearingFirm*	●
	2	*ClearingAccount*	●
	4	*Price*	●
	8	*ExecInst*	●
	16	*OrdType*	●
	32	*TimeInForce*	●
	64	*MinQty*	●
	128	*MaxFloor*	●
2	1	*Symbol*	R
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	R
	128	*RoutingInst*	●
3	1	*Account*	●
	2	*DisplayIndicator*	●
	4	*MaxRemovePct*	●
	8	*DiscretionAmount*	
	16	*PegDifference*	
	32	*PreventMatch*	●
	64	*LocateReqd*	
	128	*ExpireTime*	●
4	1	*MaturityDate*	●
	2	*StrikePrice*	●
	4	*PutOrCall*	●
	8	*RiskReset*	●
	16	*OpenClose*	●
	32	*CMTANumber*	●
	64	*TargetPartyID*	●
	128	*(Reserved)*	

Byte	Bit	Field	
5	1	*(Reserved)*	
	2	*AttributedQuote*	●
	4	*BookingType*	
	8	*ExtExecInst*	
	16	*ClientID*	
	32	*InvestorID*	
	64	*ExecutorID*	
	128	*OrderOrigination*	
6	1	*DisplayRange*	●
	2	*StopPx*	●
	4	*RoutStrategy*	●
	8	*RouteDeliveryMethod*	●
	16	*ExDestination*	●
	32	*EchoText*	●
	64	*AuctionId*	●
	128	*RoutingFirmID*	●
7	1	*AlgorithmicIndicator*	
	2	*CustomGroupId*	●
	4	*ClientQualifiedRole*	
	8	*InvestorQualifiedRole*	
	16	*ExecutorQualifiedRole*	
	32	*CtiCode*	
	64	*ManualOrderIndicator*	
	128	*OperatorId*	

5.2 New Order Cross (EDGX Only)

Byte	Bit	Field	
1	1	*Symbol*	●
	2	*MaturityDate*	●
	4	*StrikePrice*	●
	8	*PutOrCall*	●
	16	*ExecInst*	●
	32	*AttributedQuote*	●
	64	*TargetPartyID*	●
	128	*PreventMatch*	●
2	1	*AutoMatch*	●
	2	*AutoMatchPrice*	●
	4	*LastPriority*	●
	8	*Account*	●
	16	*CMTANumber*	●
	32	*ClearingAccount*	●
	64	*RoutingFirmID*	●
	128	*(Reserved)*	

5.3 New Complex Order (EDGX and C2 Only)

Byte	Bit	Field	
1	1	*ClearingFIrm*	●
	2	*ClearingAccount*	●
	4	*Price*	●
	8	*OrdType*	●
	16	*TimeInForce*	●
	32	*Symbol*	●
	64	*Capacity*	●
	128	*RoutingInst*	●
2	1	*Account*	●
	2	*PreventMatch*	●
	4	*ExpireTime*	●
	8	*CMTANumber*	●
	16	*TargetPartyID*	●
	32	*AttributedQuote*	●
	64	*EchoText*	●
	128	*AuctionId*	●
3	1	*RoutingFirmID*	●
	2	*DrillThruProtection*	●
	4	*RiskReset*	●
	8	*CustomGroupId*	●
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

5.4 Cancel Order

Byte	Bit	Field	
1	1	*ClearingFirm*	●
	2	*MassCancelLockout*	●
	4	*MassCancel*	●
	8	*RiskRoot*	●
	16	*MassCancelID*	●
	32	*RoutingFirmID*	●
	64	*ManualOrderIndicator*	
	128	*OperatorId*	
2	1	*MassCancelInst*	●
	2	*(Reserved)*	
	4	*(Reserved)*	
	8	*(Reserved)*	
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

ClearingFirm is required for service bureau ports.

5.5 Modify Order

Byte	Bit	Field	
1	1	*ClearingFirm*	●
	2	*(Reserved)*	
	4	*OrderQty*	**R**
	8	*Price*	**R**
	16	*OrdType*	●
	32	*CancelOrigOnReject*	●
	64	*ExecInst*	●
	128	*Side*	–
2	1	*MaxFloor*	●
	2	*StopPx*	●
	4	*RoutingFirmID*	●
	8	*ManualOrderIndicator*	
	16	*OperatorId*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

(**R**) Both *OrderQty* and *Price* must be present on all `Modify Order` requests. Messages sent without both fields will be rejected.

ClearingFirm is required for service bureau ports.

5.6 Bulk Order

Byte	Bit	Field	
1	1	*BidShortPrice*	●
	2	*BidOrderQty*	●
	4	*(Reserved)*	
	8	*BidOpenClose*	●
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
2	1	*AskShortPrice*	●
	2	*AskOrderQty*	●
	4	*(Reserved)*	
	8	*AskOpenClose*	●
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

Note that *RoutingInst* in `Bulk Order` supports a limited set of values. See 'Section 7 - List of Optional Fields' for more information.

5.7 Purge Orders

Byte	Bit	Field	
1	1	*ClearingFirm*	●
	2	*MassCancelLockout*	●
	4	*MassCancelInst*	●
	8	*RiskRoot*	●
	16	*MassCancelID*	●
	32	*RoutingFirmID*	●
	64	*ManualOrderIndicator*	
	128	*OperatorId*	

ClearingFirm is required for service bureau ports.

5.8 New Complex Instrument (EDGX and C2 Only)

Byte	Bit	Field	
1	1	*LegCFICode*	●
	2	*LegMaturityDate*	●
	4	*LegStrikePrice*	●
	8	*ClearingFirm*	●
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6 Return Bitfields Per Message

Legend:

R	Indicates that the field must be specified for a message
●	Indicates that the field can be specified for a message
–	Indicates that the field cannot be requested for a message
(Blank)	Indicates that the field is not used by Cboe Options and cannot be specified for a message

Input messages that containing invalid fields (i.e., Blank) will be rejected. In the case of rejected input messages, the associated `Reject` message sent back to the customer will contain a 'RejectReason' code non-optional field (See Section 9 - Reason Codes) and a 'Text' non-optional field containing descriptive text.

6.1 Order Acknowledgment

Byte	Bit	Field	
1	1	*Side*	●
	2	*PegDifference*	
	4	*Price*	●
	8	*ExecInst*	●
	16	*OrdType*	●
	32	*TimeInForce*	●
	64	*MinQty*	●
	128	*MaxRemovePct*	●
2	1	*Symbol*	●
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	●
	128	*ContraTrader*	–
3	1	*Account*	●
	2	*ClearingFirm*	●
	4	*ClearingAccount*	●
	8	*DisplayIndicator*	●
	16	*MaxFloor*	●
	32	*DiscretionAmount*	
	64	*OrderQty*	●
	128	*PreventMatch*	●
4	1	*MaturityDate*	●
	2	*StrikePrice*	●
	4	*PutOrCall*	●
	8	*OpenClose*	●
	16	*ClOrdIdBatch*	●
	32	*CorrectedSize*	●
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	●
	2	*LeavesQty*	●
	4	*LastShares*	●
	8	*LastPx*	●
	16	*DisplayPrice*	●
	32	*WorkingPrice*	●
	64	*BaseLiquidityIndicator*	●
	128	*ExpireTime*	●

Byte	Bit	Field	
6	1	*SecondaryOrderID*	●
	2	*CCP*	
	4	*ContraCapacity*	●
	8	*AttributedQuote*	●
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	
7	1	*SubLiquidityIndicator*	●
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	●
	4	*StopPx*	●
	8	*RoutingInst*	●
	16	*RoutStrategy*	●
	32	*RouteDeliveryMethod*	●
	64	*ExDestination*	●
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	●
	2	*TargetPartyID*	●
	4	*AuctionId*	●
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	●
	64	*CrossType*	–
	128	*CrossPrioritization*	–
10	1	*CrossId*	●
	2	*AllocQty*	●
	4	*GiveUpFirmID*	●
	8	*RoutingFirmID*	●
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	●
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	

Byte	Bit	Field	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	●
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.2 Cross Order Acknowledgment (EDGX only)

Byte	Bit	Field	
1	1	*Side*	●
	2	*PegDifference*	
	4	*Price*	●
	8	*ExecInst*	●
	16	*OrdType*	–
	32	*TimeInForce*	–
	64	*MinQty*	–
	128	*MaxRemovePct*	–
2	1	*Symbol*	●
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	●
	128	*ContraTrader*	–
3	1	*Account*	●
	2	*ClearingFirm*	–
	4	*ClearingAccount*	●
	8	*DisplayIndicator*	–
	16	*MaxFloor*	–
	32	*DiscretionAmount*	
	64	*OrderQty*	●
	128	*PreventMatch*	●
4	1	*MaturityDate*	●
	2	*StrikePrice*	●
	4	*PutOrCall*	●
	8	*OpenClose*	●
	16	*ClOrdIdBatch*	–
	32	*CorrectedSize*	–
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdId*	–
	2	*LeavesQty*	–
	4	*LastShares*	–
	8	*LastPx*	–
	16	*DisplayPrice*	–
	32	*WorkingPrice*	–
	64	*BaseLiquidityIndicator*	–
	128	*ExpireTime*	–
6	1	*SecondaryOrderID*	–
	2	*CCP*	
	4	*ContraCapacity*	–
	8	*AttributedQuote*	●
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	

Byte	Bit	Field	
7	1	*SubLiquidityIndicator*	–
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	–
	4	*StopPx*	–
	8	*RoutingInst*	–
	16	*RoutStrategy*	–
	32	*RouteDeliveryMethod*	–
	64	*ExDestination*	–
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	–
	2	*TargetPartyID*	●
	4	*AuctionId*	●
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	●
	64	*CrossType*	●
	128	*CrossPrioritization*	●
10	1	*CrossId*	●
	2	*AllocQty*	●
	4	*GiveUpFirmID*	●
	8	*RoutingFirmID*	●
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	–
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	

Byte	Bit	Field	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	–
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.3 Bulk Order Acknowledgment

Byte	Bit	Field	
1	1	*Side*	–
	2	*PegDifference*	
	4	*Price*	–
	8	*ExecInst*	–
	16	*OrdType*	–
	32	*TimeInForce*	–
	64	*MinQty*	–
	128	*MaxRemovePct*	–
2	1	*Symbol*	–
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	–
	128	*ContraTrader*	–
3	1	*Account*	–
	2	*ClearingFirm*	–
	4	*ClearingAccount*	–
	8	*DisplayIndicator*	–
	16	*MaxFloor*	–
	32	*DiscretionAmount*	
	64	*OrderQty*	–
	128	*PreventMatch*	–
4	1	*MaturityDate*	–
	2	*StrikePrice*	–
	4	*PutOrCall*	–
	8	*OpenClose*	–
	16	*ClOrdIdBatch*	–
	32	*CorrectedSize*	–
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	–
	2	*LeavesQty*	–
	4	*LastShares*	–
	8	*LastPx*	–
	16	*DisplayPrice*	–
	32	*WorkingPrice*	–
	64	*BaseLiquidityIndicator*	–
	128	*ExpireTime*	–
6	1	*SecondaryOrderID*	–
	2	*CCP*	
	4	*ContraCapacity*	–
	8	*AttributedQuote*	–
	16	*ExtExecInst*	
	32	*BulkOrderIds*	●
	64	*BulkRejectReasons*	●
	128	*PartyRole*	

Byte	Bit	Field	
7	1	*SubLiquidityIndicator*	–
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	–
	4	*StopPx*	–
	8	*RoutingInst*	–
	16	*RoutStrategy*	–
	32	*RouteDeliveryMethod*	–
	64	*ExDestination*	–
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	–
	2	*TargetPartyID*	–
	4	*AuctionId*	–
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	–
	64	*CrossType*	–
	128	*CrossPrioritization*	–
10	1	*CrossId*	–
	2	*AllocQty*	–
	4	*GiveUpFirmID*	–
	8	*RoutingFirmID*	–
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	–
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	

Byte	Bit	Field	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	–
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.4 Order Rejected

Byte	Bit	Field	
1	1	*Side*	●
	2	*PegDifference*	
	4	*Price*	●
	8	*ExecInst*	●
	16	*OrdType*	●
	32	*TimeInForce*	●
	64	*MinQty*	●
	128	*MaxRemovePct*	●
2	1	*Symbol*	●
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	●
	128	*ContraTrader*	–
3	1	*Account*	●
	2	*ClearingFirm*	●
	4	*ClearingAccount*	●
	8	*DisplayIndicator*	●
	16	*MaxFloor*	●
	32	*DiscretionAmount*	
	64	*OrderQty*	●
	128	*PreventMatch*	●
4	1	*MaturityDate*	●
	2	*StrikePrice*	●
	4	*PutOrCall*	●
	8	*OpenClose*	●
	16	*ClOrdIdBatch*	●
	32	*CorrectedSize*	●
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	–
	2	*LeavesQty*	–
	4	*LastShares*	–
	8	*LastPx*	–
	16	*DisplayPrice*	–
	32	*WorkingPrice*	–
	64	*BaseLiquidityIndicator*	–
	128	*ExpireTime*	–
6	1	*SecondaryOrderID*	●
	2	*CCP*	
	4	*ContraCapacity*	●
	8	*AttributedQuote*	●
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	

Byte	Bit	Field	
7	1	*SubLiquidityIndicator*	–
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	●
	4	*StopPx*	●
	8	*RoutingInst*	●
	16	*RoutStrategy*	●
	32	*RouteDeliveryMethod*	●
	64	*ExDestination*	●
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	●
	2	*TargetPartyID*	●
	4	*AuctionId*	●
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	●
	64	*CrossType*	–
	128	*CrossPrioritization*	–
10	1	*CrossId*	●
	2	*AllocQty*	●
	4	*GiveUpFirmID*	●
	8	*RoutingFirmID*	●
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	●
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	

Byte	Bit	Field	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	–
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.5 Cross Order Rejected (EDGX Only)

Byte	Bit	Field	
1	1	*Side*	–
	2	*PegDifference*	
	4	*Price*	●
	8	*ExecInst*	●
	16	*OrdType*	–
	32	*TimeInForce*	–
	64	*MinQty*	–
	128	*MaxRemovePct*	–
2	1	*Symbol*	●
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	–
	128	*ContraTrader*	–
3	1	*Account*	–
	2	*ClearingFirm*	–
	4	*ClearingAccount*	–
	8	*DisplayIndicator*	–
	16	*MaxFloor*	–
	32	*DiscretionAmount*	
	64	*OrderQty*	●
	128	*PreventMatch*	●
4	1	*MaturityDate*	●
	2	*StrikePrice*	●
	4	*PutOrCall*	●
	8	*OpenClose*	–
	16	*ClOrdIdBatch*	–
	32	*CorrectedSize*	–
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	–
	2	*LeavesQty*	–
	4	*LastShares*	–
	8	*LastPx*	–
	16	*DisplayPrice*	–
	32	*WorkingPrice*	–
	64	*BaseLiquidityIndicator*	–
	128	*ExpireTime*	–
6	1	*SecondaryOrderID*	–
	2	*CCP*	
	4	*ContraCapacity*	–
	8	*AttributedQuote*	●
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	

Byte	Bit	Field	
7	1	*SubLiquidityIndicator*	–
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	–
	4	*StopPx*	–
	8	*RoutingInst*	–
	16	*RoutStrategy*	–
	32	*RouteDeliveryMethod*	–
	64	*ExDestination*	–
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	–
	2	*TargetPartyID*	●
	4	*AuctionId*	–
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	–
	64	*CrossType*	●
	128	*CrossPrioritization*	●
10	1	*CrossId*	●
	2	*AllocQty*	–
	4	*GiveUpFirmID*	–
	8	*RoutingFirmID*	●
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	–
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	

Byte	Bit	Field	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	–
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.6 Order Modified

Byte	Bit	Field	
1	1	*Side*	●
	2	*PegDifference*	
	4	*Price*	●
	8	*ExecInst*	●
	16	*OrdType*	●
	32	*TimeInForce*	●
	64	*MinQty*	●
	128	*MaxRemovePct*	●
2	1	*Symbol*	–
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	–
	128	*ContraTrader*	–
3	1	*Account*	●
	2	*ClearingFirm*	●
	4	*ClearingAccount*	●
	8	*DisplayIndicator*	●
	16	*MaxFloor*	●
	32	*DiscretionAmount*	
	64	*OrderQty*	●
	128	*PreventMatch*	●
4	1	*MaturityDate*	–
	2	*StrikePrice*	–
	4	*PutOrCall*	–
	8	*OpenClose*	–
	16	*ClOrdIdBatch*	–
	32	*CorrectedSize*	–
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	●
	2	*LeavesQty*	●
	4	*LastShares*	●
	8	*LastPx*	●
	16	*DisplayPrice*	●
	32	*WorkingPrice*	●
	64	*BaseLiquidityIndicator*	●
	128	*ExpireTime*	●
6	1	*SecondaryOrderID*	●
	2	*CCP*	
	4	*ContraCapacity*	●
	8	*AttributedQuote*	●
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	

Byte	Bit	Field	
7	1	*SubLiquidityIndicator*	–
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	●
	4	*StopPx*	●
	8	*RoutingInst*	●
	16	*RoutStrategy*	●
	32	*RouteDeliveryMethod*	●
	64	*ExDestination*	●
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	●
	2	*TargetPartyID*	●
	4	*AuctionId*	●
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	●
	64	*CrossType*	–
	128	*CrossPrioritization*	–
10	1	*CrossId*	●
	2	*AllocQty*	●
	4	*GiveUpFirmID*	●
	8	*RoutingFirmID*	●
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	●
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	

Byte	Bit	Field	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	–
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.7 Order Restated

Byte	Bit	Field	
1	1	*Side*	●
	2	*PegDifference*	
	4	*Price*	●
	8	*ExecInst*	●
	16	*OrdType*	●
	32	*TimeInForce*	●
	64	*MinQty*	●
	128	*MaxRemovePct*	●
2	1	*Symbol*	●
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	●
	128	*ContraTrader*	–
3	1	*Account*	●
	2	*ClearingFirm*	●
	4	*ClearingAccount*	●
	8	*DisplayIndicator*	●
	16	*MaxFloor*	●
	32	*DiscretionAmount*	
	64	*OrderQty*	●
	128	*PreventMatch*	●
4	1	*MaturityDate*	●
	2	*StrikePrice*	●
	4	*PutOrCall*	●
	8	*OpenClose*	●
	16	*ClOrdIdBatch*	●
	32	*CorrectedSize*	●
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	●
	2	*LeavesQty*	●
	4	*LastShares*	●
	8	*LastPx*	●
	16	*DisplayPrice*	●
	32	*WorkingPrice*	●
	64	*BaseLiquidityIndicator*	●
	128	*ExpireTime*	●
6	1	*SecondaryOrderID*	●
	2	*CCP*	
	4	*ContraCapacity*	●
	8	*AttributedQuote*	●
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	

Byte	Bit	Field	
7	1	*SubLiquidityIndicator*	–
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	●
	4	*StopPx*	●
	8	*RoutingInst*	●
	16	*RoutStrategy*	●
	32	*RouteDeliveryMethod*	●
	64	*ExDestination*	●
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	●
	2	*TargetPartyID*	●
	4	*AuctionId*	●
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	●
	64	*CrossType*	–
	128	*CrossPrioritization*	–
10	1	*CrossId*	●
	2	*AllocQty*	●
	4	*GiveUpFirmID*	●
	8	*RoutingFirmID*	●
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	●
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	

Byte	Bit	Field	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	–
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.8 User Modify Rejected

Byte	Bit	Field	
1	1	*Side*	–
	2	*PegDifference*	
	4	*Price*	–
	8	*ExecInst*	–
	16	*OrdType*	–
	32	*TimeInForce*	–
	64	*MinQty*	–
	128	*MaxRemovePct*	–
2	1	*Symbol*	–
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	–
	128	*ContraTrader*	–
3	1	*Account*	–
	2	*ClearingFirm*	–
	4	*ClearingAccount*	–
	8	*DisplayIndicator*	–
	16	*MaxFloor*	–
	32	*DiscretionAmount*	
	64	*OrderQty*	–
	128	*PreventMatch*	–
4	1	*MaturityDate*	–
	2	*StrikePrice*	–
	4	*PutOrCall*	–
	8	*OpenClose*	–
	16	*ClOrdIdBatch*	–
	32	*CorrectedSize*	–
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	–
	2	*LeavesQty*	–
	4	*LastShares*	–
	8	*LastPx*	–
	16	*DisplayPrice*	–
	32	*WorkingPrice*	–
	64	*BaseLiquidityIndicator*	–
	128	*ExpireTime*	–
6	1	*SecondaryOrderID*	–
	2	*CCP*	
	4	*ContraCapacity*	–
	8	*AttributedQuote*	–
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	
7	1	*SubLiquidityIndicator*	–
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	–
	4	*StopPx*	–
	8	*RoutingInst*	–
	16	*RoutStrategy*	–
	32	*RouteDeliveryMethod*	–
	64	*ExDestination*	–
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	–
	2	*TargetPartyID*	–
	4	*AuctionId*	–
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	–
	64	*CrossType*	–
	128	*CrossPrioritization*	–
10	1	*CrossId*	●
	2	*AllocQty*	●
	4	*GiveUpFirmID*	●
	8	*RoutingFirmID*	●
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	●
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	–
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.9 Order Cancelled

Byte	Bit	Field	
1	1	*Side*	●
	2	*PegDifference*	
	4	*Price*	●
	8	*ExecInst*	●
	16	*OrdType*	●
	32	*TimeInForce*	●
	64	*MinQty*	●
	128	*MaxRemovePct*	●
2	1	*Symbol*	●
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	●
	128	*ContraTrader*	–
3	1	*Account*	●
	2	*ClearingFirm*	●
	4	*ClearingAccount*	●
	8	*DisplayIndicator*	●
	16	*MaxFloor*	●
	32	*DiscretionAmount*	
	64	*OrderQty*	●
	128	*PreventMatch*	●
4	1	*MaturityDate*	●
	2	*StrikePrice*	●
	4	*PutOrCall*	●
	8	*OpenClose*	●
	16	*ClOrdIdBatch*	●
	32	*CorrectedSize*	●
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	●
	2	*LeavesQty*	●
	4	*LastShares*	●
	8	*LastPx*	●
	16	*DisplayPrice*	●
	32	*WorkingPrice*	●
	64	*BaseLiquidityIndicator*	●
	128	*ExpireTime*	●
6	1	*SecondaryOrderID*	●
	2	*CCP*	
	4	*ContraCapacity*	●
	8	*AttributedQuote*	●
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	

Byte	Bit	Field	
7	1	*SubLiquidityIndicator*	–
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	●
	4	*StopPx*	●
	8	*RoutingInst*	●
	16	*RoutStrategy*	●
	32	*RouteDeliveryMethod*	●
	64	*ExDestination*	●
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	●
	2	*TargetPartyID*	●
	4	*AuctionId*	●
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	●
	64	*CrossType*	–
	128	*CrossPrioritization*	–
10	1	*CrossId*	●
	2	*AllocQty*	●
	4	*GiveUpFirmID*	●
	8	*RoutingFirmID*	●
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	●
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	

Byte	Bit	Field	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	–
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.10 Cross Order Cancelled (EDGX Only)

Byte	Bit	Field	
1	1	*Side*	●
	2	*PegDifference*	
	4	*Price*	●
	8	*ExecInst*	●
	16	*OrdType*	–
	32	*TimeInForce*	–
	64	*MinQty*	–
	128	*MaxRemovePct*	–
2	1	*Symbol*	●
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	●
	128	*ContraTrader*	–
3	1	*Account*	●
	2	*ClearingFirm*	●
	4	*ClearingAccount*	–
	8	*DisplayIndicator*	–
	16	*MaxFloor*	–
	32	*DiscretionAmount*	
	64	*OrderQty*	●
	128	*PreventMatch*	●
4	1	*MaturityDate*	●
	2	*StrikePrice*	●
	4	*PutOrCall*	●
	8	*OpenClose*	●
	16	*ClOrdIdBatch*	–
	32	*CorrectedSize*	–
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	–
	2	*LeavesQty*	–
	4	*LastShares*	–
	8	*LastPx*	–
	16	*DisplayPrice*	–
	32	*WorkingPrice*	–
	64	*BaseLiquidityIndicator*	–
	128	*ExpireTime*	–
6	1	*SecondaryOrderID*	–
	2	*CCP*	
	4	*ContraCapacity*	–
	8	*AttributedQuote*	●
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	

Byte	Bit	Field	
7	1	*SubLiquidityIndicator*	–
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	–
	4	*StopPx*	–
	8	*RoutingInst*	–
	16	*RoutStrategy*	–
	32	*RouteDeliveryMethod*	–
	64	*ExDestination*	–
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	–
	2	*TargetPartyID*	●
	4	*AuctionId*	●
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	●
	64	*CrossType*	●
	128	*CrossPrioritization*	●
10	1	*CrossId*	●
	2	*AllocQty*	●
	4	*GiveUpFirmID*	●
	8	*RoutingFirmID*	●
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	–
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	

Byte	Bit	Field	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	–
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.11 Cancel Rejected

Byte	Bit	Field	
1	1	*Side*	●
	2	*PegDifference*	
	4	*Price*	●
	8	*ExecInst*	●
	16	*OrdType*	●
	32	*TimeInForce*	●
	64	*MinQty*	●
	128	*MaxRemovePct*	●
2	1	*Symbol*	●
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	●
	128	*ContraTrader*	–
3	1	*Account*	–
	2	*ClearingFirm*	–
	4	*ClearingAccount*	–
	8	*DisplayIndicator*	–
	16	*MaxFloor*	–
	32	*DiscretionAmount*	
	64	*OrderQty*	–
	128	*PreventMatch*	–
4	1	*MaturityDate*	●
	2	*StrikePrice*	●
	4	*PutOrCall*	●
	8	*OpenClose*	●
	16	*ClOrdIdBatch*	●
	32	*CorrectedSize*	●
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	–
	2	*LeavesQty*	–
	4	*LastShares*	–
	8	*LastPx*	–
	16	*DisplayPrice*	–
	32	*WorkingPrice*	–
	64	*BaseLiquidityIndicator*	–
	128	*ExpireTime*	–
6	1	*SecondaryOrderID*	–
	2	*CCP*	
	4	*ContraCapacity*	–
	8	*AttributedQuote*	–
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	

Byte	Bit	Field	
7	1	*SubLiquidityIndicator*	–
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	●
	4	*StopPx*	●
	8	*RoutingInst*	–
	16	*RoutStrategy*	–
	32	*RouteDeliveryMethod*	–
	64	*ExDestination*	–
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	●
	2	*TargetPartyID*	●
	4	*AuctionId*	●
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	●
	64	*CrossType*	–
	128	*CrossPrioritization*	–
10	1	*CrossId*	●
	2	*AllocQty*	●
	4	*GiveUpFirmID*	●
	8	*RoutingFirmID*	●
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	●
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	

Byte	Bit	Field	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	–
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.12 Order Execution

Byte	Bit	Field	
1	1	*Side*	●
	2	*PegDifference*	
	4	*Price*	●
	8	*ExecInst*	●
	16	*OrdType*	●
	32	*TimeInForce*	●
	64	*MinQty*	●
	128	*MaxRemovePct*	●
2	1	*Symbol*	●
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	●
	128	*ContraTrader*	●
3	1	*Account*	●
	2	*ClearingFirm*	●
	4	*ClearingAccount*	●
	8	*DisplayIndicator*	●
	16	*MaxFloor*	●
	32	*DiscretionAmount*	
	64	*OrderQty*	●
	128	*PreventMatch*	●
4	1	*MaturityDate*	●
	2	*StrikePrice*	●
	4	*PutOrCall*	●
	8	*OpenClose*	●
	16	*ClOrdIdBatch*	●
	32	*CorrectedSize*	●
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	–
	2	*LeavesQty*	–
	4	*LastShares*	–
	8	*LastPx*	–
	16	*DisplayPrice*	–
	32	*WorkingPrice*	–
	64	*BaseLiquidityIndicator*	–
	128	*ExpireTime*	–
6	1	*SecondaryOrderID*	–
	2	*CCP*	
	4	*ContraCapacity*	●
	8	*AttributedQuote*	●
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	

Byte	Bit	Field	
7	1	*SubLiquidityIndicator*	–
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	●
	2	*EchoText*	●
	4	*StopPx*	●
	8	*RoutingInst*	●
	16	*RoutStrategy*	●
	32	*RouteDeliveryMethod*	●
	64	*ExDestination*	●
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	●
	2	*TargetPartyID*	●
	4	*AuctionId*	●
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	●
	64	*CrossType*	●
	128	*CrossPrioritization*	●
10	1	*CrossId*	●
	2	*AllocQty*	●
	4	*GiveUpFirmID*	●
	8	*RoutingFirmID*	●
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	●
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	

Byte	Bit	Field	
13	1	*CumQty*	●
	2	*DayOrderQty*	●
	4	*DayCumQty*	●
	8	*AvgPx*	●
	16	*DayAvgPx*	●
	32	*PendingStatus*	
	64	*DrillThruProtection*	●
	128	*MultilegReportingType*	●
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	●
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.13 Trade Cancel or Correct

Byte	Bit	Field	
1	1	*Side*	–
	2	*PegDifference*	
	4	*Price*	–
	8	*ExecInst*	–
	16	*OrdType*	–
	32	*TimeInForce*	–
	64	*MinQty*	–
	128	*MaxRemovePct*	–
2	1	*Symbol*	●
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	●
	128	*ContraTrader*	–
3	1	*Account*	–
	2	*ClearingFirm*	–
	4	*ClearingAccount*	–
	8	*DisplayIndicator*	–
	16	*MaxFloor*	–
	32	*DiscretionAmount*	
	64	*OrderQty*	–
	128	*PreventMatch*	–
4	1	*MaturityDate*	●
	2	*StrikePrice*	●
	4	*PutOrCall*	●
	8	*OpenClose*	●
	16	*ClOrdIdBatch*	●
	32	*CorrectedSize*	●
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	–
	2	*LeavesQty*	–
	4	*LastShares*	–
	8	*LastPx*	–
	16	*DisplayPrice*	–
	32	*WorkingPrice*	–
	64	*BaseLiquidityIndicator*	–
	128	*ExpireTime*	–
6	1	*SecondaryOrderID*	–
	2	*CCP*	
	4	*ContraCapacity*	–
	8	*AttributedQuote*	–
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	

Byte	Bit	Field	
7	1	*SubLiquidityIndicator*	●
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	–
	4	*StopPx*	–
	8	*RoutingInst*	–
	16	*RoutStrategy*	–
	32	*RouteDeliveryMethod*	–
	64	*ExDestination*	–
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	●
	2	*TargetPartyID*	●
	4	*AuctionId*	●
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	●
	64	*CrossType*	–
	128	*CrossPrioritization*	–
10	1	*CrossId*	●
	2	*AllocQty*	–
	4	*GiveUpFirmID*	●
	8	*RoutingFirmID*	●
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	●
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	

Byte	Bit	Field	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	–
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.14 Purge Rejected

Byte	Bit	Field	
1	1	*Side*	–
	2	*PegDifference*	
	4	*Price*	–
	8	*ExecInst*	–
	16	*OrdType*	–
	32	*TimeInForce*	–
	64	*MinQty*	–
	128	*MaxRemovePct*	–
2	1	*Symbol*	–
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	–
	128	*ContraTrader*	–
3	1	*Account*	–
	2	*ClearingFirm*	–
	4	*ClearingAccount*	–
	8	*DisplayIndicator*	–
	16	*MaxFloor*	–
	32	*DiscretionAmount*	
	64	*OrderQty*	–
	128	*PreventMatch*	–
4	1	*MaturityDate*	–
	2	*StrikePrice*	–
	4	*PutOrCall*	–
	8	*OpenClose*	–
	16	*ClOrdIdBatch*	–
	32	*CorrectedSize*	–
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	–
	2	*LeavesQty*	–
	4	*LastShares*	–
	8	*LastPx*	–
	16	*DisplayPrice*	–
	32	*WorkingPrice*	–
	64	*BaseLiquidityIndicator*	–
	128	*ExpireTime*	–
6	1	*SecondaryOrderID*	–
	2	*CCP*	
	4	*ContraCapacity*	–
	8	*AttributedQuote*	–
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	

Byte	Bit	Field	
7	1	*SubLiquidityIndicator*	–
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	–
	4	*StopPx*	–
	8	*RoutingInst*	–
	16	*RoutStrategy*	–
	32	*RouteDeliveryMethod*	–
	64	*ExDestination*	–
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	–
	2	*TargetPartyID*	–
	4	*AuctionId*	–
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	–
	64	*CrossType*	–
	128	*CrossPrioritization*	–
10	1	*CrossId*	–
	2	*AllocQty*	–
	4	*GiveUpFirmID*	–
	8	*RoutingFirmID*	–
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	–
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	

Byte	Bit	Field	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	–
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	•
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.15 Complex Instrument Accepted (EDGX and C2 Only)

Byte	Bit	Field	
1	1	*Side*	–
	2	*PegDifference*	
	4	*Price*	–
	8	*ExecInst*	–
	16	*OrdType*	–
	32	*TimeInForce*	–
	64	*MinQty*	–
	128	*MaxRemovePct*	–
2	1	*Symbol*	–
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	–
	128	*ContraTrader*	–
3	1	*Account*	–
	2	*ClearingFirm*	–
	4	*ClearingAccount*	–
	8	*DisplayIndicator*	–
	16	*MaxFloor*	–
	32	*DiscretionAmount*	
	64	*OrderQty*	–
	128	*PreventMatch*	–
4	1	*MaturityDate*	–
	2	*StrikePrice*	–
	4	*PutOrCall*	–
	8	*OpenClose*	–
	16	*ClOrdIdBatch*	–
	32	*CorrectedSize*	–
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	–
	2	*LeavesQty*	–
	4	*LastShares*	–
	8	*LastPx*	–
	16	*DisplayPrice*	–
	32	*WorkingPrice*	–
	64	*BaseLiquidityIndicator*	–
	128	*ExpireTime*	–
6	1	*SecondaryOrderID*	–
	2	*CCP*	
	4	*ContraCapacity*	–
	8	*AttributedQuote*	–
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	

Byte	Bit	Field	
7	1	*SubLiquidityIndicator*	–
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	–
	4	*StopPx*	–
	8	*RoutingInst*	–
	16	*RoutStrategy*	–
	32	*RouteDeliveryMethod*	–
	64	*ExDestination*	–
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	–
	2	*TargetPartyID*	–
	4	*AuctionId*	–
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	–
	64	*CrossType*	–
	128	*CrossPrioritization*	–
10	1	*CrossId*	–
	2	*AllocQty*	–
	4	*GiveUpFirmID*	–
	8	*RoutingFirmID*	–
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	–
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	

Byte	Bit	Field	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	–
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	●
	2	*LegMaturityDate*	●
	4	*LegStrikePrice*	●
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

6.16 Complex Instrument Rejected (EDGX and C2 Only)

Byte	Bit	Field	
1	1	*Side*	–
	2	*PegDifference*	
	4	*Price*	–
	8	*ExecInst*	–
	16	*OrdType*	–
	32	*TimeInForce*	–
	64	*MinQty*	–
	128	*MaxRemovePct*	–
2	1	*Symbol*	–
	2	*SymbolSfx*	
	4	*Currency*	
	8	*IdSource*	
	16	*SecurityId*	
	32	*SecurityExchange*	
	64	*Capacity*	–
	128	*ContraTrader*	–
3	1	*Account*	–
	2	*ClearingFirm*	–
	4	*ClearingAccount*	–
	8	*DisplayIndicator*	–
	16	*MaxFloor*	–
	32	*DiscretionAmount*	
	64	*OrderQty*	–
	128	*PreventMatch*	–
4	1	*MaturityDate*	–
	2	*StrikePrice*	–
	4	*PutOrCall*	–
	8	*OpenClose*	–
	16	*ClOrdIdBatch*	–
	32	*CorrectedSize*	–
	64	*PartyID*	
	128	*AccessFee*	
5	1	*OrigClOrdID*	–
	2	*LeavesQty*	–
	4	*LastShares*	–
	8	*LastPx*	–
	16	*DisplayPrice*	–
	32	*WorkingPrice*	–
	64	*BaseLiquidityIndicator*	–
	128	*ExpireTime*	–
6	1	*SecondaryOrderID*	–
	2	*CCP*	
	4	*ContraCapacity*	–
	8	*AttributedQuote*	–
	16	*ExtExecInst*	
	32	*BulkOrderIds*	–
	64	*BulkRejectReasons*	–
	128	*PartyRole*	

Byte	Bit	Field	
7	1	*SubLiquidityIndicator*	–
	2	*TradeReportTypeReturn*	
	4	*TradePublishIndReturn*	
	8	*Text*	
	16	*Bid*	
	32	*Offer*	
	64	*LargeSize*	
	128	*LastMkt*	
8	1	*FeeCode*	–
	2	*EchoText*	–
	4	*StopPx*	–
	8	*RoutingInst*	–
	16	*RoutStrategy*	–
	32	*RouteDeliveryMethod*	–
	64	*ExDestination*	–
	128	*TradeReportRefID*	
9	1	*MarketingFeeCode*	–
	2	*TargetPartyID*	–
	4	*AuctionId*	–
	8	*OrderCategory*	
	16	*LiquidityProvision*	
	32	*CmtaNumber*	–
	64	*CrossType*	–
	128	*CrossPrioritization*	–
10	1	*CrossId*	–
	2	*AllocQty*	–
	4	*GiveUpFirmID*	–
	8	*RoutingFirmID*	–
	16	*WaiverType*	
	32	*CrossExclusionIndicator*	–
	64	*PriceFormation*	
	128	*ClientQualifiedRole*	
11	1	*ClientID*	
	2	*InvestorID*	
	4	*ExecutorID*	
	8	*OrderOrigination*	
	16	*Algo*	
	32	*DeferralReason*	
	64	*InvestorQualifiedRole*	
	128	*ExecutorQualifiedRole*	
12	1	*CtiCode*	
	2	*ManualOrderIndicator*	
	4	*OperatorId*	
	8	*TradeDate*	
	16	*ClearingPrice*	
	32	*ClearingSize*	
	64	*ClearingSymbol*	
	128	*(Reserved)*	

Byte	Bit	Field	
13	1	*CumQty*	–
	2	*DayOrderQty*	–
	4	*DayCumQty*	–
	8	*AvgPx*	–
	16	*DayAvgPx*	–
	32	*PendingStatus*	
	64	*DrillThruProtection*	–
	128	*MultilegReportingType*	–
14	1	*LegCFICode*	–
	2	*LegMaturityDate*	–
	4	*LegStrikePrice*	–
	8	*RoomId*	
	16	*SecondaryExecId*	–
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	
15	1	*(Reserved)*	
	2	*EquityPartyId*	
	4	*EquityNBBOProtect*	
	8	*MassCancelId*	–
	16	*(Reserved)*	
	32	*(Reserved)*	
	64	*(Reserved)*	
	128	*(Reserved)*	

7 List of Optional Fields

The following are descriptions of optional fields which may be sent or received.

Field	Length	Data Type	Description
Account	16	Text	Corresponds to *Account* (1) in Cboe FIX. Reflected back on execution reports associated with this order. May be made available in the Member's clearing file. Allowed characters are alphanumeric and colon.
AllocQty	4	Binary	Corresponds to *AllocQty* (80) in Cboe FIX. Number of contracts for this party. EDGX only.
AskOpenClose	1	Alphanumeric	Corresponds to *OpenClose* (77) in Cboe FIX. Offer side open/close. See *OpenClose* for allowed values.
AskOrderID	8	Binary	Corresponds to *OrderID* (37) in Cboe FIX. A kind of *BulkOrderID*. Order identifier supplied by Cboe. This identifier corresponds to the identifiers used in Cboe market data products.
AskOrderQty	4	Binary	Corresponds to *OrderQty* (38) in Cboe FIX. Number of contracts for the offer. System limit is 999,999 contracts.
AskRejectReason	1	Text	Reason for the individual order rejection. See 'Section 8 – Reason Codes' for a list of possible reasons.
AskShortPrice	4	Short Binary Price	Corresponds to *Price* (44) in Cboe FIX. Offer limit price. Four implied decimal places. Must be non-negative.
AttributedQuote	1	Alphanumeric	Optional. Allows for an order to be attributed to a firm's Executing Broker ID in Cboe market data feeds. The order may also be included with attributed summary information displays related to quote/trade information on the Cboe website. Must opt-in to support through the Cboe Trade Desk. On a `New Order Cross`, this field is only applicable to the Agency order. N = Do not attribute firm Executing Broker ID to this order (Default) Y = Attribute firm Executing Broker ID to this order
AuctionId	8	Binary	Corresponds to *AuctionId* (9370) in Cboe FIX. Auction order identifier supplied by Cboe. This identifier corresponds to the identifiers used in Cboe market data products. EDGX and C2 only.

AutoMatch	1	Alphanumeric	Corresponds to *AutoMatch* (9040) in Cboe FIX. Better-priced responses will be matched by the Contra side. Indicates the type of Auto Match the Contra Order will use. Mutually exclusive with *LastPriority*. Limit type Auto Match orders require *AutoMatchPrice* to be supplied. 0 = Disabled (Default) 1 = Market 2 = Limit EDGX only.
AutoMatchPrice	8	Binary Price	Corresponds to *AutoMatchPrice* (9044) in Cboe FIX. Sets the limit price at which the Contra Order will Auto Match. Required if *AutoMatch* = 2 (Limit). Ignored otherwise. Must be non-negative. 1 = Buy 2 = Sell EDGX only.
AvgPx	8	Binary Price	Corresponds to *AvgPx* (6) in Cboe FIX. Average price of executions for this order weighted by trade size. Zero if *CumQty* field is zero or if *MultilegReportingType* = 2.
BaseLiquidityIndicator	1	Alphanumeric	Indicates whether the trade added or removed liquidity. A = Added Liquidity R = Removed Liquidity X = Routed to Another Market C = Auction/Uncrossing
BidOpenClose	1	Alphanumeric	Corresponds to *OpenClose* (77) in Cboe FIX. Bid side open/close. See *OpenClose* for allowed values.
BidOrderID	8	Binary	Corresponds to *OrderID* (37) in Cboe FIX. A kind of *BulkOrderID*. Order identifier supplied by Cboe. This identifier corresponds to the identifiers used in Cboe market data products.
BidOrderQty	4	Binary	Corresponds to *OrderQty* (38) in Cboe FIX. Number of contracts for the bid. System limit is 999,999 contracts.
BidRejectReason	1	Text	Reason for the individual order rejection. See 'Section 8 – Reason Codes' for a list of possible reasons.
BidShortPrice	4	Short Binary Price	Corresponds to *Price* (44) in Cboe FIX. Bid limit price. Four implied decimal places. Must be non-negative.
BulkOrderIDs	8	Binary	If this return bit is requested, an order ID will be returned for each accepted new and cancelled order. See also *AskOrderID* or *BidOrderID*.
BulkRejectReasons	1	Alphanumeric	If this return bit is requested, a reject reason will be returned for each rejected order. See also *AskRejectReason* textfor *BidRejectReason* text. See 'Section 8 – Reason Codes' for a list of possible reasons.

CancelOrigOnReject	1	Alpha	Corresponds to *CancelOrigOnReject* (9619) in Cboe FIX. Indicates handling of original order on failure to modify. N = Leave original order alone Y = Cancel original order if modification fails
Capacity	1	Alpha	Corresponds to *OrderCapacity* (47) in Cboe FIX. C = Customer M = Market Maker F = Firm U = Professional Customer N = Non-Cboe Market Maker B = Broker-Dealer J = Joint Back Office L = Non-Trading Permit Holder Affiliate (C2 only)
ClearingAccount	4	Text	Corresponds to *OnBehalfOfSubID* (116) and *ClearingAccount* (440) in Cboe FIX. Supplemental identifier. Recorded and made available in execution reports. Available via Drop feeds. When *Capacity* is set to a value of M or N for Market Maker, this field should be filled with the desired market maker ID. When using CMTA, this value is the Market Maker ID for the CMTA member instead of the Cboe member executing the trade. This field will be sent to the OCC. If *Capacity* is set to something besides Market Maker, this field can be blank or filled out with an optional string that is passed through to the OCC.
ClearingFirm	4	Alpha	Corresponds to *OnBehalfOfCompID* (115) Cboe FIX. EFID that will clear the trade. **Port attribute value of 'Default EFID' is used if not provided.**
ClOrdIDBatch	20	Text	ID chosen by the client. Characters in the ASCII range 33-126 are allowed, except for comma, semicolon, and pipe. If the *ClOrdIDBatch* matches a live order, the order will be rejected as duplicate. Note: Cboe only enforces uniqueness of *ClOrdIDBatch* values among currently live orders, which includes long-lived, persisting GTC/GTD orders. However, we strongly recommend that you keep your *ClOrdIDBatch* values unique.
CMTANumber	4	Binary	Corresponds to *CMTANumber* (439) in Cboe FIX. CMTA Number of the firm that will clear the trade. Must be specified for CMTA orders and left unspecified for non-CMTA orders.
ContraCapacity	1	Alphanumeric	Capacity of the contra for this execution. See *Capacity* for allowed values.
ContraTrader	4	Alphanumeric	Displays the EFID (*ClearingFirm*) of the contra side firm on all internally matched executions.
CorrectedSize	4	Binary	Corresponds to *CorrectedSize* (6655) in Cboe FIX. Number of shares after trade adjustment.

CrossExclusion Indicator	1	Alphanumeric	Corresponds to *CrossExclusionIndicator* (6438) in Cboe FIX. N = Contracts were executed in auction against Contra party or against a resting order when auction was initiated Y = Contracts were executed in auction against another party. EDGX only.
CrossId	20	Text	Corresponds to CrossID (548) in Cboe FIX. Day-unique identier for the cross order chosen by the client. Characters in the ASCII range 33-126 are allowed, except for comma, semicolon and pipe. EDGX only.
CrossType	1	Alphanumeric	Corresponds to *CrossType* (549) in Cboe FIX. Type of auction order being submitted. This indicates the type of auction that will be initiated upon order entry. 1 = Bats Auction Mechanism 2 = Qualified Contingent Cross EDGX only.
CrossPrioritization	1	Alphanumeric	Corresponds to *CrossPrioritization* (550) in Cboe FIX. Indicates which side of the cross order will be prioritized for execution. This identifies the Agency side. 1 = Buy 2 = Sell EDGX only.
CumQty	4	Binary	Corresponds to *CumQty* (14) in Cboe FIX Cumulative quanity of contracts executed for the order over the life of the order, which may be multiple business days in the case of persisting GTC/GTD orders.
CustomGroupID	2	Binary	Corresponds to *CustomGroupID* (7699) in Cboe FIX for `New Order` and `Purge Orders` messages. Used to group orders for use in `Purge Orders` where multiple orders can be cancelled by specifying a list of *CustomGroupIDs*.
DayAvgPx	8	Binary Price	Corresponds to *DayAvgPx* (426) in Cboe FIX. Applicable to persisting GTC/GTD orders only. Average price per contract of executions on current business date. Zero if *DayCumQty* is zero.
DayCumQty	4	Binary	Corresponds to *DayCumQty* (425) in Cboe FIX. Applicable to persisting GTC/GTD orders only. Cumulative quantity of contracts executed for the order during the current business day.
DayOrderQty	4	Binary	Corresponds to *DayOrderQty* (424) in Cboe FIX. Applicable to persisting GTC/GTD orders only. Contracts remaning to be filled for the order at the beginning of the current business day (i.e., *OrderQty* – *CumQty* at the end of the previous business day).

DisplayIndicator	1	Alphanumeric	Corresponds to *DisplayIndicator* (9479) in Cboe FIX. V = Default. As determined by port level setting (default to S) S = Display Price Sliding (this is to override a opt-out of Display Price Sliding at the port level (BZX only) L = Display Price Sliding, but reject if order crosses NBBO on entry (BZX only) M = Multiple Display Price Sliding (BZX only) P = Price Adjust m = Multiple Price Adjust R = Reject the order if it cannot be booked and displayed without adjustment. N = NoRescrapeAtLimit (BZX only) See 'Display Indicator Features' for more details on sliding options.
DisplayPrice	8	Binary Price	Only present when order is fully or partially booked. If the order has to be displayed at a less aggressive price for some reason, then that price will be reported here, otherwise equals *Price*.
DisplayRange	4	Binary	Corresponds to *DisplayRange* (8020) in Cboe FIX. Used for random replenishment of reserve orders. Random replenishment establishes a range of possible values for the order quantity that is to be displayed. For example, if MaxFloor = 2,000, and DisplayRange = 200, the displayed quantity will be selected from one of the following values: 1,800, 1,900, 2,000, 2,100, or 2,200. Must be specified in round lots. BZX and C2 only.
DrillThruProtection	8	Binary Price	Corresponds to *DrillThruProtection* (6253) in Cboe FIX. Amount sender is willing to trade through the SNBBO. A zero price provides full SNBBO protection. The price should be entered as a non-negative value. Exchange default values are 3% of the opposite of the SNBBO, with a minimum value of $0.02 and a maximum of $0.10 for the default value. Values provided on a `New Complex Order` message do not have a minimum or maximum. EDGX and C2 only.
EchoText	64	Text	Corresponds to *Text* (58) in Cboe FIX. Free format text string. May be echoed back on Cboe to Member messages.

ExDestination	1	Text	Corresponds to *ExDestination* (100) in Cboe FIX.
			Used to specify the designated away venue for RoutStrategy = DIRC.
			`A = NYSE ARCA`
			`E = NASDAQ ISE`
			`F = MIAX`
			`P = MIAX PEARL`
			`G = EDGX Options`
			`H = C2`
			`K = BOX`
			`N = NASDAQ`
			`S = NASDAQ BX`
			`U = NYSE AMERICAN`
			`W = CBOE`
			`X = Nasdaq PHLX`
			`Z = BZX Options`
			`g = Nasdaq GEMX`
			`m = Nasdaq MRX`

ExecInst	1	Text	Corresponds to *ExecInst* (18) in Cboe FIX. `f` = Intermarket Sweep (Directed or Cboe) `ASCII NUL (0x00)` = no special handling All other values are ignored.
ExpireTime	8	DateTime	Corresponds to *ExpireTime* (126) in Cboe FIX. Required for *TimeInForce* = 6 orders, specifies the date-time (in UTC) that the order expires.
FeeCode	2	Alphanumeric	Corresponds to *FeeCode* (9882) in Cboe FIX. Indicates fee associated with an execution. Fee codes are published in the pricing schedule. New fee codes may be sent with little or no notice. Members are encouraged to code their systems to accept unknown fee codes.
GiveUpFirmID	4	Alpha	Corresponds to *GiveupFirmID* (9946) in Cboe FIX. For the Agency Side, this field must equal the value of *ClearingFirm* (EFID). Each Contra allocation will use this field instead of *ClearingFirm* for clearing information. EDGX only.
LastPriority	1	Alphanumeric	Corresponds to *LastPriority* (9849) in Cboe FIX. When enabled, allocation will go to other participants' responses before requiring the Contra Order to satisfy remaining contracts of the Agency Order. Mutually exclusive with *AutoMatch*. `0` = Disabled (Default) `1` = Enabled EDGX only.
LastPx	8	Binary Price	Corresponds to *LastPx* (31) in Cboe FIX. Price of this fill.
LastShares	4	Binary	Corresponds to *LastShares* (32) in Cboe FIX. Executed share quantity.

LeavesQty	4	Binary	Corresponds to *LeavesQty* (151) in Cboe FIX. Quantity still open for further execution. If zero, the order is complete.
LegCFICode	6	Alphanumeric	Corresponds to *LegCFICode* (608) in Cboe FIX. CFI Code for leg. Required if *LegSymbol* is in OSI format. OP = Options Put OC = Options Call EDGX and C2 only.
LegMaturityDate	4	Date	Corresponds to *LegMaturityDate* (611) in Cboe FIX. Required if *LegSymbol* is in OSI format. EDGX and C2 only.
LegStrikePrice	8	Binary Price	Corresponds to *LegStrikePrice* (612) in Cboe FIX. Option strike price. System maximum is 999,999.99. Must be non-negative. Required if *LegSymbol* is in OSI format. EDGX and C2 only.
MarketingFeeCode	2	Alphanumeric	Corresponds to *MarketingFeeCode* (5937) in Cboe FIX. P = Penny Pilot N = Non-Penny Pilot X = Not Eligible for Marketing Fees EDGX only.
MassCancel *Legacy method to be deprecated at date TBD*	1	Alphanumeric	Corresponds to *MassCancel* (7693) in Cboe FIX. Indicates that a mass cancellation is being performed. `1 or 3` = Cancel all orders that match *RiskRoot* or *CustomGroupID*, regardless of *ClearingFirm*. `2 or 4` = Cancel all orders that match the given *RiskRoot* or *CustomGroupID* and *ClearingFirm*. Values 3 and 4 are similar to 1 and 2, respectively, but individual `Order Cancelled` messages will not be sent for each order cancelled. Instead, a `Mass Cancel Acknowledgement` message with *MassCancelID* and *CancelledOrderCount* will be sent once all cancels have been processed. For `Purge Orders` messages, the `Mass Cancel Acknowledgement` message may always be requested by sending a *MassCancelID* in the `Purge Order` message, regardless of the value of the *MassCancel* fied. *MassCancel* requests will not cancel initiating orders for BAM Auctions.
MassCancelID	20	Text	Corresponds to *MassCancelID* (7695) in Cboe FIX. Copied from the *MassCancelID* passed on the original `Cancel Order` or `Purge Order` message.
MassCancelInst	16	Text	Corresponds to *MassCancelInst* (7700) in Cboe FIX. Used for specification of `Purge Orders` functionality and optionally used for specification of Mass Cancel functionality associated with the `Cancel Order` message. At least one character must be provided (Clearing Firm Filter). Contiguous characters must be specified up to total length.

			Truncated/unspecified characters will default to values indicated (D) below. ***1st Character: Clearing Firm Filter*** A = No filtering by clearing firm relationship is performed. F = All orders that were sent under the clearing relationship specified in *ClearingFirm* optional field. If “F” specified and ClearingFirm not provided, the `Mass Cancel` or `Purge Orders` will be rejected. ***2nd Character: Acknowledgement Style*** M = (D) `Order Cancelled` messages are sent for each cancelled order. If “M” is set and the *MassCancelID* optional field is specified, the *MassCancelID* value is ignored. S = A single `Mass Cancel Acknowledgement` message is sent once all cancels have been processed. The *MassCancelID* optional field must be specified or the `Mass Cancel` or `Purge Orders` will be rejected. B = Both individual `Order Cancelled` and `Mass Cancel Acknowledgement` messages will be sent. Also requires *MassCancelID* optional filed to be specified or the `Mass Cancel` or `Purge Orders` will be rejected. ***3rd Character: Lockout Instruction*** N = (D) No lockout L = Lockout until corresponding *RiskReset* received. Lockout can be used only with Clearing Firm Filter set to ”F”, otherwise the `Mass Cancel or Purge Orders` will be rejected. Lockout will apply to all `New Order` and `Modify Order` messages for the *ClearingFirm* (and *ProductName* or *CustomGroupIDs*, if specified), regardless of other filtering in the `Purge Orders` or `Cancel Order` message. ***4th Character: Instrument Type Filter (C2 and EDGX Only)*** B = (D) Cancel both single leg and complex orders S = Cancel single leg orders only C = Cancel complex orders only ***5th Character: GTC Order Filter*** C = (D) Cancel GTC and GTD orders P = Don’t cancel (preserve) GTC and GTD orders If the *RiskReset* optional field is specified, it must contain a valid symbol (e.g., “MSFT”), in which case only orders associated with the specified *RiskRoot* will be cancelled. A self-imposed lockout can be released using the *RiskReset* field of the `New Order` or `New Complex Order` message. If *RiskReset* optional field is specified, a Risk Reset level reset is required, otherwise a Firm level reset is required to release a lockout. For more information, refer to the ‘Cboe Risk Management Specification’.
MassCancelLockout	1	Alphanumeric	Corresponds to *MassCancelLockout* (7697) in Cboe FIX. `0` = No Lockout `1` = Lockout Members may initiate a new self-imposed order lockout in conjunction with a mass cancel for all resting orders and inflight orders. The value of 1 is only applicable in conjunction

			with *MassCancel* values of 2 and 4; other usage results in a reject.
MaturityDate	4	Date	Corresponds to *MaturityMonth* (200) and *MaturityDay* (205) in Cboe FIX.
MaxFloor	4	Binary	Corresponds to *MaxFloor* (111) in Cboe FIX. Portion of *OrderQty* to display. The balance is reserve. 0 displays the entire quantity. The displayed quantity of each order at a price level is decremented rirst. When displayed quantity is fully decremented, it is reloaded up to *MaxFloor* from reserve. Default = 0 BZX and C2 only.
MaxRemovePct	1	Binary	Corresponds to *MaxRemovePct* (9618) in Cboe FIX. For Post Only At Limit (RoutingInst = Q), what percentage of the order quantity which remains after price improvement may be removed at the limit. Must be 0 for non-Post Only At Limit orders. 0 = Don't Remove any shares at limit price 100 = Remove any amount at limit price BZX only.
MinQty	4	Binary	Corresponds to *MinQty* (110) in Cboe FIX. Minimum fill quantity for IOC orders which only interact with liquidity on the target book. Ignored for other orders.
MultilegReportingType	1	Alphanumeric	Corresponds to *MultilegReportingType* (442) in Cboe FIX Indicates the type of `Order Execution` message. 1 = Single-leg instrument 2 = Individual leg of multi-leg instrument 3 = Entire multi-leg instrument package EDGX and C2 only.
NoOfSecurities	4	Binary	Corresponds to *NoOfSecurities* (8641) in Cboe FIX. Indicates the number of securities created by the member in this trading session. EDGX and C2 only.
OpenClose	1	Alphanumeric	Corresponds to *OpenClose* (77) in Cboe FIX. Indicates status of client position in the option. O = Open C = Close N = None* *Orders with a *Capacity* of M or N will not be required to specify *OpenClose* on their orders or may specify a value of N. A <blank> will be sent to the OCC. Contracts which are limited to closing only transactions with an *OpenClose* value of O will be rejected unless the *Capacity* field is M (Market Maker) and *TimeInForce* is 3 (Immediate or Cancel).
OrderQty	4	Binary	Corresponds to *OrderQty* (38) in Cboe FIX. Order quantity. System limit is 999,999 contracts.

OrdType	1	Alphanumeric	Corresponds to *OrdType* (40) in Cboe FIX. 1 = Market 2 = Limit (default) 3 = Stop 4 = Stop Limit Market implies *TimeInForce* of IOC (3). Stop/Stop Limit orders must be set to *TimeInForce* = “0” (DAY), “1” (GTC), or “6” (GTD).
OrigClOrdID	20	Text	Corresponds to *OrigClOrdID* (41) in Cboe FIX.
OrigCrossID	20	Text	Corresponds to *OrigCrossID* (551) in Cboe FIX.
OsiRoot	6	Text	Corresponds to *Symbol* (55) in Cboe FIX. The OSI root symbol.
PreventMatch	3	Alpha	Corresponds to *PreventMatch* (7928) in Cboe FIX. Three characters: ***1st character - MTP Modifier:*** N = Cancel Newest O = Cancel Oldest B = Cancel Both S = Cancel Smallest D = Decrement larger / Cancel Smaller d = Same as D above, but only decrement LeavesQty. Do not restate OrderQty. ***2nd character - Unique ID Level:*** F = Prevent Match at Firm(Member) Level M = Prevent Match at EFID Level ***3rd character - Trading Group ID (optional):*** Member specified alphanumeric value 0-9, A-Z, or a-z. The Unique ID level (character 2) of both orders must match to prevent a trade. If specified on both orders, Trading Group ID (character 3) must match to prevent a trade. The MTP Modifier (character 1) of the inbound order will be honored, except that if the inbound order specifies Decrement and the resting order does not, and the resting order is larger, then both orders will be cancelled. This exception is to protect the order entry software for the resting order from receiving an unexpected restatement message. If order entry software is prepared to handle unexpected restatement messages, this exception may be override at the port level by requesting “Allow MTP Decrement Override" functionality. Uses of MTP Modifier D or d and users of “Allow MTP Decrement Override” functionality must be prepared to receive an `Order Restated` message that decrements *LeavesQty* (and, for method D, *OrdQty* as well). On a `New Order Cross`, only N and O are supported for the MTP modifier. MTP instructions on BAM orders will be used to prevent executions against BAM responses only; they will permit executions against resting or unrelated orders. Responses may only employ N (Cancel Newest) in which case the response will be cancelled and the auction order will continue. On a `New Order Cross`, this field is only applicable to the Agency order.

Price	8	Binary Price	Corresponds to *Price* (44) in Cboe FIX. Limit price. Required for limit orders (*OrdType* = 2). If specified on market order (*OrdType* = 1), the order will be rejected. This field is also used to specify an optional cap price for pegged orders. For complex orders, net pricing of the strategy. Four implied decimal places. (EDGX and C2 only) *Buy orders:* • Positive value, Debit • Negative value, Credit • Even order, 0 (Zero) *Sell orders:* • Positive value, Credit • Negative value, Debit • Even order, 0 (Zero)
PutOrCall	1	Alphanumeric	Corresponds to *PutOrCall* (201) in Cboe FIX. `0` = Put `1` = Call
RevisedLegs	1	Alphanumeric	Indicates if the legs on the created complex strategy have been reordered from the original request. If the legs were reordered, the order of the *OpenClose* fields on a `New Complex Order` must be the order returned by the exchange, not the order from the original request. `1` = Legs were not reordered `2` = Legs were reordered EDGX and C2 only.

RiskReset	8	Text	Corresponds to *RiskReset* (7692) in Cboe FIX. For use by customers using Cboe's Risk Management tools to reset or release firm, Risk Root or Custom Group ID level lockout conditions resulting from risk profile trips or self-imposed lockouts issued via `Cancel Order` or `Purge Orders` messages. **Single Character Values:** S = Risk Root level risk/lockout reset F = Firm level risk/lockout reset C = CustomGroupID lockout reset Values may be combined together to allow for resets of multiple risk trips or self-imposed lockouts in a single message. For example, "FS", "SC", "FC", and "SFC" are all acceptable values. When a resting or inbound order is executed and a Risk Root level risk profile limit is reached, resting orders on the associated Risk Root will be cancelled and inbound orders on the Risk Root will be rejected until this field is filled with the value S on a subsequent `New Order` or `New Complex Order` message corresponding to a symbol on the same Risk Root. All active Risk Root level rules in the risk profile are reset at this time. Individual rules cannot be reset on their own. If a Firm level rule is tripped, this tag can be filled with the value F to reset all Firm level rules. While this will reset Firm level rules, it is possible that both Firm and Risk Root level rules are currently tripped. Setting this field to F will not clear Risk Root level rules and the order may still be rejected. To clear both Risk Root and Firm level rules, set this field to "SF" to reset all associated Risk Root and Firm level lockouts. If orders have been locked out at the *CustomGroupID* level, inbound orders for the locked *CustomGroupID* will be rejected until this field is filled with the value C on a `New Order` or `New Complex` order that uses the locked *CustomGroupID*. For more information, refer to the 'Cboe US Options Risk Management Specification'.
RouteDeliveryMethod	3	Text	Corresponds to *RouteDeliveryMethod* (9350) in Cboe FIX. RTI = Route to improve (default if not specified). Ability to receive price improvement will take priority over speed of execution. RTF = Route to Fill. Speed of execution will take priority over potential price improvement. Only applicable to *RoutStrategy* = ROUT
RoutingFirmID	4	Alpha	Corresponds to *RoutingFirmID* (7933) in Cboe FIX. Used to optionally convey the routing firm of the order. If supplied, value must be a valid member EFID. May be combined with *MassCancel* values 2 or 4, or *MassCancelInst* with Firm Filter set to "F" in a mass cancel request. EDGX and C2 only.

RoutingInst	4	Text	Corresponds to *RoutingInst* (9303) in Cboe FIX. ***1st character:*** B = Book Only (not routable, will remove from local book) P = Post Only (not routable) [1] Q = Post Only at Limit (removes liquidity that improves upon limit price and up to *MaxRemovePct* of remaining *OrdQty* at limit price) (BZX only) R = Routable S = Super Aggressive – Cross or Lock (order will be removed from the book and routed to any quote that is locking or crossing the order) X = Aggressive – Cross Only (order will be removed from the book and routed to any quote that is crossing the order) ***2nd character (EDGX only):*** L = Do Not Expose order via Step-Up Mechanism (SUM) S = Expose order via Step Up Mechanism (SUM)[2] For Bulk Orders, only P is permitted (EDGX and C2 only).
RoutingInst (Complex)	4	Text	Corresponds to *RoutingInst* (9303) in Cboe FIX. ***1st character:*** B = Book Only (will remove from local book), allowed to interact with both single-leg and other complex orders. D = Complex Book Only, allowed to interact with other complex orders only[3]. ***2nd character:*** L = Do Not Expose order via Complex Options Auction (COA) S = Expose order via Complex Options Auction (COA)[4] EDGX and C2 only.
RoutStrategy	6	Text	Corresponds to *RoutStrategy* (9400) in Cboe FIX. ***All exchanges:*** ROUT = Book + Street DIRC[5] = Book + Directed IOC or Directed ISO if ExecInst = f SWPA = (default) Book + Sweep Street

[1] Post Only orders on EDGX with DisplayIndicator (Fix Tag 9479) = R will be cancelled back even if they would be immediately executable with price improvement.

[2] Routable Orders identified with *RoutingInst* = R, RS, S, SS, X or XS, and *RoutStrategy* = ROUT, and *AuctionId* not supplied, or Non-Routable Orders identified with *RoutingInst* = BS and *ExecInst* not f and *TimeInForce* not 4 and *MinQty* not supplied will participate in the Step-Up Mechanism (SUM) before routing, booking, or cancelling back.

[3] Only valid with *TimeInForce* values of 0 (Day) or 3 (IOC), otherwise order will be rejected.

[4] All non-IOC Complex Orders will be eligible for Complex Options Auction (COA) unless otherwise specified.

[5] Field *ExDestination* must be populated with *RoutStrategy* = DIRC. Must be specified when sending non-book only ISO, otherwise the order will be rejected.

SecondaryExecID	8	Binary	Field indicates whether a fill or partial fill is a complex instrument fill or a single leg fill that comprises a complex execution. • If SecondaryExecID (527) is not present, the fill is a single leg fill only. • If SecondaryExecID (527) is present and is the same as the ExecID (17) the fill represents a complex execution for which associated single leg fills will follow. • Single leg fills associated with a complex execution will contain a SecondaryExecID (527) of the associated complex execution. EDGX and C2 only.
SecondaryOrderID	8	Binary	Corresponds to *SecondaryOrderID* (198) in Cboe FIX. Denotes an alternative *OrderID* which is present on Cboe market data feeds (for example, to hide that a reserve (iceberg) order has reloaded). Or, *OrderID* of the contra side of a prevented match.
Side	1	Alphanumeric	Corresponds to *Side* (54) in Cboe FIX. 1 = Buy 2 = Sell
StopPx	8	Binary Price	Corresponds to *StopPx* (99) in Cboe FIX. Stop price. Required if *OrdType* = 3 (Stop) or 4 (Stop Limit). Stop and Stop Limit orders will only be triggered off Last Sale Eligible trades.
StrikePrice	8	Binary Price	Corresponds to *StrikePrice* (202) in Cboe FIX. Strike Price for option, 0 – 999,999.99
SubLiquidityIndicator	1	Alphanumeric	Additional information about an execution. **Cboe may add additional values without notice. Members must gracefully ignore unknown values.** `ASCII NUL (0x00)` = No Additional Information S = Execution from order that set the NBBO B = Step Up Mechanism b = Bats Auction Mechanism C = Carried D = Done For Day
Symbol	8	Alphanumeric	Corresponds to *Symbol* (55) in Cboe FIX. Entire Cboe format symbol
TargetPartyID	4	Alpha	Corresponds to *TargetPartyID* (1462) in Cboe FIX. A valid Parent ID of the Directed Market Maker. Required for directed orders. On a `New Order Cross`, this field is only applicable to the Agency order. EDGX only.

TimeInForce	1	Alphanumeric	Corresponds to *TimeInForce* (59) in Cboe FIX. 0 = Day 1 = GTC* (Remains in system until executed, cancelled or option expires.) 2 = At the Open. 3 = IOC (Portion not filled immediately is cancelled. Market orders are implicitly IOC.) 4 = FOK (An IOC where the entire size must be filled, else the order will be cancelled back)[6] 6 = GTD* (Expires at specified *ExpireTime* for a specified day.) **Bulk Order Ports will only support TimeInForce values of Day or GTD with a same day expiration. EDGX Only.*
WorkingPrice	8	Binary Price	Corresponds to *WorkingPrice* (9690) in Cboe FIX. Only present when order is fully or partially booked. If price had to be adjusted to a less aggressive value for some reason, then the adjusted price will be reported here, otherwise equals price.

[6] Not supported for complex orders.

8 Reason Codes

The following is a list of all reason codes used by Cboe. These reason codes are used in a variety of contexts (order cancellations and order rejections). All reasons are not valid in all contexts. Cboe may add additional reason codes without notice. Members must gracefully ignore unknown values.

A = Admin

D = Duplicate identifier (e.g., ClOrdID)

H = Halted

I = Incorrect data center

J = Too late to cancel

K = Order rate threshold exceeded

L = Order would lock or Cross NBBO

M = Order size exceeded

N = Ran out of liquidity to execute against

O = *ClOrdID* doesn't match a known order

P = Can't modify an order that is pending fill

Q = Waiting for first trade

R = Routing Unavailable

T = Fill would trade through the NBBO

U = User requested

V = Would wash

W = Add liquidity only order would remove

X = Order expired

Y = Symbol not supported

Z = Unforeseen reason

c = Only Close transactions accepted

f = Risk management firm or Custom Group ID level

m = Market access risk limit exceeded

o = Max open orders count exceeded

r = Reserve reload

s = Risk management product level

w = Would remove on unslide

x = Crossed market

y = Order received by Cboe during replay

9 List of Message Types

9.1 Member to Cboe

Message Name	Level	Type	Sequenced
Login Request	Session	0x37	No
Logout Request	Session	0x02	No
Client Heartbeat	Session	0x03	No
New Order	Application	0x38	Yes
New Complex Order	Application	0x4B	Yes
New Order Cross	Application	0x41	Yes
Cancel Order	Application	0x39	Yes
Modify Order	Application	0x3A	Yes
Bulk Order	Application	0x3B	Yes
Purge Orders	Application	0x47	Yes
New Complex Instrumnet	Application	0x4C	Yes

9.2 Cboe to Member

Message Name	Level	Type	Sequenced
Login Response	Session	0x24	No
Logout	Session	0x08	No
Server Heartbeat	Session	0x09	No
Replay Complete	Session	0x13	No
Order Acknowledgment	Application	0x25	Yes
Cross Order Acknowledgment	Application	0x43	Yes
Order Rejected	Application	0x26	No
Cross Order Rejected	Application	0x44	No
Order Modified	Application	0x27	Yes
Order Restated	Application	0x28	Yes
User Modify Rejected	Application	0x29	No
Order Cancelled	Application	0x2A	Yes
Cross Order Cancelled	Application	0x46	Yes
Cancel Rejected	Application	0x2B	No
Order Execution	Application	0x2C	Yes
Trade Cancel or Correct	Application	0x2D	Yes
Purge Rejected	Application	0x48	No
Bulk Order Acknowledgment	Application	0x2F	No
Mass Cancel Acknowledgment	Application	0x36	No
Complex Instrument Accepted	Application	0x4D	Yes
Complex Instrument Rejected	Application	0x4E	No

10 Port Attributes

The table below lists BOE port attributes that are configurable on the port or firm level. Changes to these attributes can be made by contacting the Cboe Trade Desk.

Attribute	Default	Description
Allowed Clearing Executing Firm ID(s) *	All EFIDS	Executing Firm ID(s) allowed for trading on the port.
Allow Bulk Updates ^	No	Allow support for `Bulk Order` and `Bulk Order Acknowledgment` messages.
Default Executing Firm ID	None	Default Executing Firm ID to use if none is sent on a `New Order` or `New Complex Order`.
Allow Test Symbols Only	Disabled	Allow or disallow orders in non-test symbols
Allow ISO *	Yes	Allow or disallow ISO orders.
Allow Directed ISO *	Yes	Allow or disallow ISO orders directed to other market centers.
Default Routing Instruction +	9303=RS 9350=RTI 9400=SWPA	Specifies a default value for routing. Fields can be overridden at the order level. The defaults are *RoutingInst* = RS, *RouteDeliveryMethod* = RTI, and *RoutStrategy* = SWPA.
Maximum Order Size *	25,000	Maximum order quantity
Maximum Order Dollar Value *	Unlimited	Maximum dollar value per order.
Default Price Sliding	BZX = S EDGX/C2 = P	Default price sliding behavior. See *DisplayIndicator* for details.
Cancel on Disconnect	All	Cancels open orders upon order handler session disconnect; both graceful and ungraceful. If Cancel On Disconnect is set, open orders in Symbols that are not in Closed state at the time of the disconnect are cancelled. `All` = Cancel Day and GTC/GTD orders Day = Cancel only Day orders None = Disabled
Cancel on ME Disconnect	All	Controls whether orders are cancelled or preserved on a Matching Unit failover and provides for the ability to preserve GTC/GTD orders. In any event, if a failover takes longer than 5 minutes, all orders are cancelled (including GTC/GTD Orders). `All` = Cancel Day and GTC/GTD orders Day = Cancel only Day orders None = Disabled
Market Maker Reject if Cancel on Disconnect disabled	No	Rejection of Market Maker or Away-Market Maker orders if Cancel on Disconnect is not enabled. Non-Market Maker capacity order swill be unaffected with this confuration.
Send Trade Breaks ^	No	Enables sending of `Trade Cancel or Correct` messages.
Default MTP Value *^+	None	Specifies default value for *PreventMatch*.
Allow MTP Decrement Override *^	No	Overrides the exception that requires both the resting and inbound order to be marked as “Decrement”.

Allow Sponsored Participant MTP Control *^	No	Allow Sponsored Participant to override port default for match trade prevention by using *PreventMatch* on the order level.
Cancel on Reject +	No	Cancels an order upon a cancel or modify reject.
Cancel on Regulatory Halt	All	Cancels open orders upon receipt of a Regulatory Halt. `All` = Cancel Day and GTC/GTD orders Day = Cancel only Day orders None = Disabled
Fat Finger Protection *	BZX/EDGX = None C2 = See Web Portal Port Controls Specification for defaults	Orders entered through the NBBO by a specified percentage or dollar based limit price tolerance will be rejected. Limits may be different for different price ranges and price ranges may vary across markets. Please see the 'Web Portal Port Controls Specification' for complete details.
Reject Orders on DROP Port Disconnect *	No	If all associated Standard FIX DROP ports associated with an order entry session experience disconnection, new orders will be rejected until at least one Standard FIX DROP port session has been reestablished. Note this parameter does not apply to Order-By-Order drop ports (ODROP).
Reject Orders on DROP Port Timeout (seconds) *	30 seconds	Only applicable if "Reject Orders on DROP Port Disconnect" has been enabled. When the last Standard FIX DROP port associated with an order entry session has disconnected, begin rejecting orders on the order entry session if a Standard FIX DROP session has not been reestablished within this timeout. Minimum value allowed is 0 seconds.
Cancel Open Orders on DROP Port Disconnect *	None	Only applicable if "Reject Orders on DROP Port Disconnect" has been enabled. When the last Standard FIX DROP port associated with an order handler session has disconnected, open orders, associated with the session are cancelled. `All` = Cancel Day and GTC/GTD orders Day = Cancel only Day orders None = Disabled Note this parameter applies to Standard FIX DROP ports and not Order-By-Order DROP ports (ODROP).
Carried Order Restatements	No	If the Carried Order Restatements port attribute is set, unsolicited `Order Acknowledgement` messages representing GTC/GTD orders loaded by the system at startup will be sent after the Login Response message and before any other messages for each product. Note that Carried Orders are restated to customers using the `Order Acknowledgement` messages with *BaseLiquidityIndicator*=A and *SubLiquidityIndicator*=C.

Done For Day Restatements	No	If the Done For Day Restatements port attribute is set, unsolicited `Order Acknowledgement` messages representing GTC/GTD orders that will be carried into the next session will be sent after the end of the trading session and before the system is recycled. Note that Done For Day Restatements are restated to customers using the `Order Acknowledgement` messages with *BaseLiquidityIndicator*=A and *SubLiquidityIndicator*=D.
Notional Cutoff Aggregation Methods *	None	Gross exposure = CBB + CBO + CEB + CEO Net exposure = |(CEO + CBO) – (CEB + CBB)| On a given port, Cboe will calculate an track four values: CBB = Cumulative Notional Booked Bid Value *The sum of limit price x size for all booked sell limit orders.* CBO = Cumulative Notional Booked Offer Value *The sum of limit price x size for all booked sell limit orders.* CEB = Cumulative Notional Executed Bid Value *The sum of size x trade price for all executed buy orders* CEO = Cumulative Notional Executed Sell Value *The sum of size x trade price on all executed sell orders*
Gross Daily Risk Limit Order Notional Cutoff *	None	Results in rejects for **limit** orders when **gross** exposure of limit orders exceeds this value for this port. Maximum whole dollar value of $1 billion/port.
Gross Daily Risk Market Order Notional Cutoff *	None	Results in rejects for **market** orders when **gross** exposure of limit orders exceeds this value for this port. Maximum whole dollar value of $1 billion/port.
Net Daily Risk Limit Order Notional Cutoff *	None	Results in rejects for **limit** orders when **net** exposure of limit orders exceeds this value for this port. Maximum whole dollar value of $1 billion/port.
Net Daily Risk Market Order Notional Cutoff *	None	Results in rejects for **market** orders when **net**exposure of limit orders exceeds this value for this port. Maximum whole dollar value of $1 billion/port.
Default Attributed Quote *⁺	Never	Default value for *AttributedQuote*. May override at order level. `Yes` = Attribute No = Don't Attribute (may override at order level) `Never*` = Never Attribute *May only change this setting to "Yes" or "No" after executing Attribution Addendum to Exchange User Agreement.
Crossed Market Cancel / Reject	No	Reject new orders when the NBBO in the security is crossed. Routable orders will have any remaining quantity cancelled back when the order returns to the book. Order modifications which cause a loss in priority will result in a cancel of the original order if the NBBO is crossed upon receipt of the modify request.

Duplicative Order Protection Time Threshold	None	Time window, in seconds, for Duplicative Order Protection Check
Duplicative Order Protection Order Count Threshold	None	Number of orders with the same *ClearingFirm*, *Price*, *OrdQty*, and *Symbol* that must be seen within the Duplicative Order Time Threshold to initiate Duplicative Order Protection Action.
Duplicative Order Protection Action	1	Action taken when Duplicative Order Protection criteria is met: 1 = Not enabled. 2 = Reject new orders for the remainder of Duplicative Order Time Threshold. 3 = Disable port for *ClearingFirm*. Must call Cboe Trade Desk to reenable.
Firm Risk Reset	Disabled	Configures how risk may be reset after a risk trip. `Disabled` = (Default). Will require manually resetting all Firm Level Risk trips by contacting the Trade Desk. `Enabled` = Will allow Firm Level Risk resets using FIX or BOE RiskReset field. Refer to the Cboe Risk Management Specification.
Post Order Rate Threshold	5,000 msgs/s	The maximum allowed message rate on the session. When the first non-session level message is received, a one second window begins. During the second no more than 4,999 additional non-session level messages will be allowed within that window. If the rate is exceeded, all new orders in the time window are rejected, modifies are treated as cancels, and cancels are processed. Maximum value is 5,000 msgs/sec. For Bulk-enabled ports, the default threshold is unlimited.
Symbol Order Rate Threshold	5,000 msgs/s	Functions the same as the Port Order Rate Threshold, but is calculated at the symbol level. It is capped by the Port Order Rate Threshold. Maximum value is 5,000 msgs/sec. For Bulk-enabled ports, the default threshold is unlimited.

* Sponsored Participants require written approval from Sponsors to update these settings on ports associated with a Sponsor's MPID.

+ Port attribute can be overridden on an order-by-order basis.

^ Requires certification.

11 Support

Please email questions or comments regarding this specification to tradedesk@bats.com.

Revision History

Date	Description
June 16, 2014	*Version 2.0.2* First public release of US Options BOE Version 2 specication.
July 1, 2014	*Version 2.0.3* Added Hours of Operations section. Corrected Cancel on Disconnect options.
July 3, 2014	*Version 2.0.4* Added field descriptions for *FeeCode* and *EchoText*.
July 7, 2014	*Version 2.0.5* Removed all return bits from `User Modify Rejected` V2 messages. No optional return fields are allowed. Corrected a number of optional return bits. Added *RoutingInst*, *RoutStrategy*, *RouteDeliveryMethod*, and *ExDestination* as optional return bits (byte 8).
July 9, 2014	*Version 2.0.6* Corrected instances where *ContraCapacity* and *CorrectedSize* may be requested as optional return fields.
August 15, 2014	*Version 2.0.7* Added field descriptions for *RoutStrategy*, *ExDestination*, and *StopPx*.
August 22, 2014	*Version 2.0.8* Added Super Aggressive When Odd Lot *RoutingInst* value.
August 26, 2014	*Version 2.0.9* Added Reason Code of `w` (Would Remove on Unslide).
August 28, 2014	*Version 2.0.10* Corrected `Bulk Order V2` input biteld s.
September 3, 2014	*Version 2.0.11* Removed *SymbolSfx* from allowed fields for `New Order V2`. Removed *DiscretionAmount* and *PartyID* from allowed return bitfields for a number of messages. Corrected data type for *AcceptedCount* and *RejectedCount* to be Binary (not Text). Corrected data type for *BulkOrderRejectReasons* and *OrderRejectReason* to be Text (not Binary). Removed *AccessFee* from allowed return bitelds for `Order Restated V2`. Added clarification on *BulkOrderIDs*, *AskOrderID*, and *BidOrderID*. Added clarification on *BulkRejectReasons*, *AskRejectReason* and *BidRejectReason*.
September 8, 2014	*Version 2.0.12* Removed *ContraBroker* from List of Optional fields.
September 9, 2014	*Version 2.0.13* Removed *AccessFee* from `Order Execution V2` allowed return bitfields.
October 10, 2014	*Version 2.0.14* Claried ability to reuse *ClOrdId* with `Modify Orders` when daily limit trading risk controls are enabled.
November 13, 2014	*Version 2.0.15* Corrected `New Order V2` input bitelds to note that *DisplayIndicator* is permitted.

January 8, 2015	*Version 2.0.16* Corrected `Order Execution V2` return bitfields to note that *SubLiquidityIndicator* is not allowed – it's already available in the message body. Minor correction of *PreventMatch* text (no functional change).
February 19, 2015	*Version 2.0.17* Added new *Capacity* values of N, B, and J, effective June 1, 2015.
June 10, 2015	*Version 2.0.18* Added Reason Code value of T.
June 23, 2015	*Version 2.1.0* Updated for EDGX Options. Added new fields *TargetPartyID* and *MarketingFeeCode*. Updated descriptions to note which fields are BZX Options or EDGX Options specific.
June 23, 2015	*Version 2.1.1* Added Duplicative Order Protection port attributes.
October 26, 2015	*Version 2.1.2* Added reason code of T. Updated *DisplayIndicator* description to note that, per EDGX Options Exchange rules, Display Price Sliding may not be combined with the Post Only instruction.
October 27, 2015	*Version 2.1.3* Added EDGX as possible *ContraBroker* value.
October 31, 2015	*Version 2.1.4* Corrected values for *MarketingFeeCode*. Changed text to note that *TargetPartyID* is simply copied back on all response messages.
November 11, 2015	*Version 2.1.5* Updated Pre-Market Queuing Session time to 7:30am, beginning December 11, 2015, pending SEC approval.
December 24, 2015	*Version 2.1.6* Updated description of *TargetPartyID* and *Capacity* for revised directed order functionality. Added Firm Risk Reset port attribute. Updated description of *ClearingFirm*.
January 19, 2016	*Version 2.1.7* Added Mercury as possible *ExDestination* and *ContraBroker* value.
February 17, 2016	*Version 2.1.8* Updated for new branding.
February 25, 2016	*Version 2.1.9* Added new *RestatementReason* value of P.
March 23, 2016	*Version 2.1.10* Updated description of *RoutStrategy* to state that routable ISOs must be sent using DIRC. Updated the minimum value of “Reject Orders on DROP Port Timeout” to be 0 seconds.
May 16, 2016	*Version 2.1.11* Added new field *AuctionID* and added S as a possible second character for *RoutingInst*, along with information about the Step-Up Mechanism (SUM). *AuctionID* replaced *EffectiveTime* in `New Order V2` and all of the return bitfields.

June 10, 2016	*Version 2.1.12* Display Price Sliding support eliminated for EDGX Options effective July 11, 2016.
June 28, 2016	*Version 2.1.13* Added new *SubLiquidityIndicator* of B for Step Up Mechanism.
August 3, 2016	*Version 2.1.14* WAIT orders will be eliminated upon migration of BZX Options to its next generation matching engine. Refer to Release Notes on Bats' public web site for deployment schedule.
August 17, 2016	*Version 2.1.15* Corrected *ExDestination* value of EDGX Options to be G.
September 2, 2016	*Version 2.2.0* Add new message types and fields to support cross orders (EDGX Only). Includes `New Order Cross`, `Cross Order Acknowledgment`, `Cross Order Rejected`, `Cross Order Cancelled`, and supporting fields. Effective 11/11/2016.
October 4, 2016	*Version 2.2.1* Add *RoutingFirmID* as a valid field for single order messages.
November 11, 2016	*Version 2.2.2* Added new *SubLiquidityIndicator* of b for Bats Auction Mechanism. Updated Display Price Sliding to indicate it is BZX only. Added clarification that *ClearingAccount* is required when *Capacity* is M or N.
December 15, 2016	*Version 2.2.3* Removed *RoutingInst* value of C (Book Only WAIT order). Claried which *RoutingInst* values are allowed for `Bulk Orders`. Added port param for rejecting MM capacity orders if Cancel on Disconnect is disabled.
January 24, 2017	*Version 2.2.4* Added support for MIAX Pearl routing. Added 2 (Qualied Contingent Cross) as an acceptable *CrossType* for `New Order Cross` messages.
January 27, 2017	*Version 2.2.5* Added new message types and fields to support purge ports. Includes `Purge Orders V2`, `Purge Rejected V2`, and supporting fields. Modified `New Order V2` message input bitfields to include the optional *CustomGroupID* field. Effective Date March 1, 2017. Added *RoutingFirmID* to `Modify Order V2` and `Cancel Order V2` messages.
February 27, 2017	*Version 2.2.6* Correct *MassCancel* field description in `Purge Orders V2` message examples from lockout to single ack.
March 2, 2017	*Version 2.2.7* Add new field type *Date*.
March 22, 2017	*Version 2.2.8* Remove Suppress Cancels on Sessions Close port attribute.
March 22, 2017	*Version 2.2.9* Add descriptions of port attributes “Allow Test Symbols Only”, “Port Order Rate Threshold”, and “Symbol Order Rate Threshold”.

May 11, 2017	*Version 2.3.0* Add new message types and fields to support complex orders (EDGX Only). Includes `New Complex Order`, `New Complex Instrument`, `Complex Instrument Accepted`, `Complex Instrument Rejected`, and supporting fields. Effective 10/23/2017.
June 13, 2017	*Version 2.3.1* Removed support for *TimeInForce* value of 4 (Fill-or-Kill) on complex orders. Added clarification of valid *TimeInForce* values used with *RoutingInst* value of D on complex orders. Corrected options for port attribute “Cancel on Disconnect”.
July 7, 2017	*Version 2.3.2* Corrected field type and size of *RevisedLegs*. Fixed naming inconsistency of A*ttributedQuote* sometimes being called *AttributedOrder*. Claried symbology use on `Order Execution V2` messages for complex orders.
July 25, 2017	*Version 2.3.3* Added *SecondaryExecId* to `Order Execution V2`. Added new Mass Cancel/Purge Request specication style using *MassCancelInst* field Effective 10/23/2017.
July 28, 2017	*Version 2.3.4* Updated description of use of *MassCancelInst* field in `Purge Orders V2` message Effective 10/23/2017.
August 3, 2017	*Version 2.3.5* Added *RiskReset* and *CustomGroupId* to `New Complex Order` message.
August 7, 2017	*Version 2.3.6* Corrected size of *NoOfSecurities* field in message description and examples.
August 9, 2017	*Version 2.3.7* Added *ClearingFirm* optional field to `New Complex Instrument` message.
August 14, 2017	*Version 2.3.8* Corrected `Purge Orders` message biteld ordering and added *RoutingFirmID*.
September 1, 2017	*Version 2.4.0* Removed references to V2 as the V1 specification was deprecated. Added C2-specific references. Updated Cancel on Disconnect, Cancel on ME Disconnect, Cancel on DROP Port Disconnect and Cancel on Regulatory Halt to all provide GTC filtering.
September 15, 2017	*Version 2.4.1* Added support for Feature Pack 1. Available in Certification effective 9/15/17 and in Production effective 10/13/17.
October 5, 2017	*Version 2.4.2* Updated explanatory text for MassCancelInst lockout behavior. *TimeInForce* = 2 (At the open) is supported effective 10/23/17. Updated Feature Pack 1 effective date from 10/6/17 to 10/13/17. Removed introduction of ContraTrader and ContraBroker and deprication of ContraCapacity from Feature Pack 1 release. Removed Side and OrderQty from the New Complex Instrument example.
October 17, 2017	*Version 2.4.3* Updated *Symbol* in `Complex Instrument Accepted` message to indicate this is the complex instrument id. Cboe branding/logo changes.

November 7, 2017	*Version 2.4.4* Updated to indicate that `Bulk Order Acknowledgements` are unsequenced. Corrected various spelling erorrs, field name and case inconsistencies. Updated Return Order Bitfields for `Cross Order Acknowledgement`, `Cross Order Rejected` and `Cross Order Cancelled`. Added Feature Pack 2 enhancements for *ContraTrader* and *ContraBroker* values effective on 12/8/17.
December 6, 2017	*Version 2.4.5* Corrected `Cross Order Cancelled` message type to `0x46`. Updated effective date of Feature Pack 2 to 12/15/17.
December 15, 2017	*Version 2.4.6* Updated effective date of Feature Pack 2 to 01/05/18 Corrected length of *DrillThruProtection* field. It is eight bytes.
December 27, 2017	*Version 2.4.7* Added Done For Day Restatement functionality. Protocol feature section 1.6.2 added to describe the feature. Done For Day Restatements port attribute added to enable and disable feature, which defaults to disabled. Default for Carried Order Restatements changed from enabled to disabled. Updated `Modify Order` message to clarify when an order loses time priority.
January 12, 2018	*Version 2.4.8* Fixed incorrect *GroupCnt* and *MessageLength* in `Bulk Order` example. Added GTC/GTD persistence across trading sessions to BZX and EDGX (Effective in EDGX on 1/26/18 and BZX on 2/2/18).
January 24, 2018	*Version 2.4.9* Removed reference to EFID needing to be registered in the underlying and *Capacity* needing to be set to 'M' in order to send Bulk Orders for C2 in section 4.1.6. GTCs and GTDs that expire on a future date cannot be sent on Bulk Order Ports. Added 'L' reason code to the list of reason codes in Section 8.
January 30, 2018	*Version 2.4.10* Added Post Only restriction for `Bulk Order` message on EDGX Options effective 3/23/18.
February 20, 2018	*Version 2.5.0* Update GTC/GTD functionality to allow order cancelation after trading sessions ends.
March 21, 2018	*Version 2.5.1* Updated OSI Root to Underlying symbology for EDGX Options (effective 6/11/18) and BZX (effective 6/25/18) Options. Removed *AllocQty* as an available return bitfield on `Trade Cancel` or `Correct` message.
March 26, 2018	*Version 2.5.2* Updating *RoutStrategy* (9400) default behavior to 'SWPA' for EDGX on 04/13/18 and BZX on 04/19/18.
April 4, 2018	*Version 2.5.3* Removed Post Only as a valid RoutingInst for Complex Orders on C2. Changed Default Attributed Quote on EDGX to Never.
April 10, 2018	*Version 2.5.4* *CumQty* to be populated on leg fills related to complex executions (effective 4/27/18).

April 26, 2018	*Version 2.6.0* Added optional fields to the `Purge Rejected` message to accommodate optional return of the *MassCancelId* field from the associated `Purge Request` message (Effective 6/29/18). Added *RestatementReason* = S for Ship and Post restatements.
May 23, 2018	*Version 2.6.1* Defined *StrikePrice* in the List of Optional Fields. Corrected the defintion of *LegStrikePrice* to an eight byte, Binary Price field. Corrected OSI to Underlying Symbology effective dates. Additional clarification regarding valid *RoutingInst* values for BOE Bulk on EDGX and C2.
May 30, 2018	*Version 2.6.2* *MassCancelId* moved to bit 8 from bit 1 in byte 15 of the Return Bitfields for a `Purge Rejected` message.
June 29, 2018	*Version 2.6.3* Updated *MassCancelInst* to indicate that 4th character is applicable to both C2 and EDGX. Added detail for 5th character, which was missing from the BOE specification. Corrected example for `Purge Rejected` message.
August 7, 2018	*Version 2.6.4* Updated information about mass cancel message rate limitations (effective 08/15/18).

