

IEX BINARY OPTIONS PROTOCOL (IBOP) SPECIFICATION

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OVERVIEW

IEX Options LLC (“IEX Options”) is a wholly owned subsidiary of IEX Group, Inc. that operates an options exchange trading system (the “System”). The System is designed to offer an electronic limit order book for transacting listed options.

This document describes the format in which Users of the IEX Options System submit binary protocol business messages to the System, and the System disseminates messages to Users.

Messages sent to or received from a session are known as “business messages.” The System supports Binary Encoding (“SBE”) as a base protocol, with IEX-specific modifications detailed in this *Specification*. SBE is a binary message encoding protocol developed by the FIX Trading Community that is designed to optimize encoding and decoding processes and promote efficient bandwidth utilization. The SBE Specification describes SBE message structure and encoding/decoding processes.

Users use the session level protocol as defined in the *IEX Options Binary Session Protocol Specification* to establish and maintain a Gateway session used to convey business messages between the User and the IEX Options Gateway. Refer to the *IEX Options Binary Session Protocol Specification* for further details.

This document is offered for informational purposes at this time, and the contents are subject to change. As of February 5, 2026, IEX Options LLC is not yet an operating trading venue. Some of the functionality described may not have received regulatory approval.

Hours of Operation

Refer to the IEX Options website for the IEX holiday schedule.

IEX Options supports a Pre-Open State and a Continuous Trading Session, as described in the Investors Exchange Rulebook.

The System rejects orders received prior to the beginning of the Pre-Open State. Certain combinations of order type, handling instructions, and time-in-force parameters are only accepted during the Continuous Trading Session. Supported combinations of order parameters are described in Appendix A.

Upon the open of Continuous Trading, interest submitted during the Pre-Open State that did not trade in full during the Opening Process that is not then canceled or routed, as applicable, will be eligible for matching on the continuous book. Refer to the IEX Options Opening Process in Investors Exchange Rule 22.160 for more information. Orders are rejected if they are received outside of System hours, as described below. Open orders remaining at the conclusion of Continuous Trading are cancelled automatically.

Session	Start Time (ET)	End Time (ET)
Order Entry	8:00am	4:15pm*
Pre-Open State	8:00am	9:30am**
Continuous Trading	9:30am**	4:15pm*

*Order acceptance will be available until 4:00 p.m. ET, except for option contracts on Fund Shares, as defined in Investors Exchange Rule 20.120(i), which may close as of 4:15 p.m. Eastern Time.

**Transition from the end of the Pre-Open State to the start of Continuous Trading transition via the Opening Process is dependent on the opening of the underlying, the exact timing of which may vary. Please refer to the IEX Options Opening Process in Investors Exchange Rule 22.160 for more information.



Data Types

The data types used for individual fields within messages sent on IEX Binary Options Protocol (IBOP) sessions are as follows:

Primitive Types:

All integer fields are encoded in Little Endian byte order.

For more information on primitive type encoding, see the [SBE Specification](#).

Type	Length (bytes)	Description	Value Range	Null Value
STRING(<i>n</i>)	<i>n</i>	Array of <i>n</i> ASCII Characters	Array of [0(NUL) to 127(DEL)]	0 (for individual chars)
int8	1	Signed Integer	-127 to 127	-128
int16	2	Signed Integer	-32767 to 32767	-32768
int32	4	Signed Integer	$-2^{31} + 1$ to $2^{31} - 1$	-2^{31}
int64	8	Signed Integer	$-2^{63} + 1$ to $2^{63} - 1$	-2^{63}
uint8	1	Unsigned Integer	0 to 254	255
uint16	2	Unsigned Integer	0 to 65534	65535
uint32	4	Unsigned Integer	0 to $2^{32} - 2$	$2^{32} - 1$
uint64	8	Unsigned Integer	0 to $2^{63} - 1$	$2^{64} - 1$
float	4	IEEE 754-2019 binary32	See XML schema	See XML schema

Reserved Bits/Bytes: Users must ensure all units marked as 'reserved for future use' in this *Specification* are zero-initialized.

Message Streams

All messages on the IEX Options Gateway are classified as protocol messages or business messages.

Protocol messages are defined in the *IEX Binary Session Protocol Specification* and serve to establish and maintain a User session. Protocol messages are unsequenced, with a single exception: the **Sequenced Message**.

Business messages are used by Users to conduct their trading and market making operations. Business message definitions are found in this document. Business messages are conveyed between the IEX Options Gateway and the User using the **Sequenced Message** mentioned above and carry a sequence number that is incremented by one with each new message. Sequence number is validated across subsequent messages to detect gaps.

All inbound and outbound business messaging on the IEX Options Gateway is conducted over sub-sessions. Sub-sessions provide an independent flow of business messages in the User's IEX Options Gateway session and allow for separate flows by class of message. There are three types of sub-sessions.

Sub-session Type	Direction	Description
User-to-Gateway	Inbound	Write only. Used to send member business messages to the IEX Options Gateway



Gateway-to-User	Outbound	Read only. Used to receive business messages, except reference data, from the IEX Options Gateway
Reference-Data	Outbound	Read-only. Used to receive reference data from the IEX Options Gateway

Contact Us

IEX Options Market Operations can be contacted by emailing optionsmktops@iextrading.com or calling [646 343 2004](tel:6463432004).



TRADING FUNCTIONALITY

Self-Trade Prevention

An inbound order or quote to buy (sell) that is designated with an Anti-Internalization Qualifier ID (“AIQ ID”) and Optional Trade Group ID, as applicable, is prevented from trading with a resting order or quote to sell (buy) received from the same group.

The AIQ modifier on the Aggressing Order or Aggressing Quote controls the interaction between two orders or quotes that are marked with matching AIQ IDs.

For marketable orders, AIQ is evaluated whenever the order reaches a new price level. If a marketable order reaches a contra-side price level and matches the AIQ ID (and Optional Trade Group ID, as applicable) of **any** contra-side order/quote resting at that price level, AIQ will be triggered immediately. The System allows Users to append an “AIQ modifier” to orders and quotes submitted to IEX Options to specify a prescribed interaction behavior between AIQ-designated orders. The System supports the following AIQ modifiers:

- Cancel Newest – Incoming order is canceled back to the User.
- Cancel Oldest – Any resting order(s)/quote(s) belonging to the same group as the incoming order are canceled back to the User, and the incoming order is able to trade against remaining contra-side interest at that price level.
- Cancel Both – Both the incoming order and any resting order(s)/quote(s) belonging to the same group as the incoming order are canceled back to the User.
- Cancel Smallest – If the LeavesQty of the incoming order is smaller than or equal the LeavesQty of any resting order(s)/quote(s) belonging to the same group, the incoming order will be canceled. If the LeavesQty of the incoming order is greater than or equal to the LeavesQty of any resting order(s)/quote(s) belonging to the same group, the resting order(s)/quote(s) of smaller or equal size to the incoming order will be canceled.

Users can set a default AIQ modifier, AIQ ID, and Optional Trade Group ID by session, which are applied to all orders/quotes sent on that session. These values can be overwritten on an order-by-order basis by populating the “AIQ” field when submitting interest. When specifying the AIQ ID and modifier, Users must specify two chars, with the optional third char, as follows:

- Char 1: AIQ Modifier. Dictates Cancel Newest, Cancel Oldest, Cancel Both, or Cancel Smallest. Always required when using AIQ functionality.
- Char 2: AIQ ID. Dictates whether AIQ for this order is applied at the Firm (Member) or MPID level. AIQ can only be triggered if these values match. Always required when using AIQ functionality.
- Char 3: Optional Trade Group ID. Users can use this char to specify a more granular AIQ behavior than the Firm-wide or MPID-wide level. If provided on **both** orders and does **not** match, AIQ will not be triggered. If applied on **both** orders and **does** match (and Char 2 matches), AIQ is triggered. If applied on **only one** of the two orders, this char is disregarded, meaning that whether AIQ is triggered is determined by whether Char 2 matches alone.

To opt out of default AIQ functionality (mark an order/quote as “Free to Trade”) on an order-by-order-basis, User should populate the AIQ field with “---”.

Note that if AIQ is populated with NULL_VALUE or “---” and no default is configured, no AIQ behavior will be applied to the order.

Self-Trade Prevention will not be applicable during the Opening or Re-Opening Process.



Member Configurations

Per-Session Default Values on Inbound Messages

IEX Options allows default values for individual fields to be configured per-logical session, as described below. If a default value is configured via the IEX Options Binary Order Entry Port Request Form or through Market Operations and no value is supplied on an inbound message to IEX Options, the default value will be applied and reflected back on acknowledgements:

Default AIQ: Will be applied if a default value is configured and value is not populated on an inbound message.

Default CancelInsteadOfSlide: Will be applied if a default value is configured and field is populated with NULL_VALUE on an inbound message. If NULL_VALUE is populated and no default is configured, value of 0 (Slide) will automatically be applied.

Default AttributedQuote: Will be applied if a default value is configured and field is populated with NULL_VALUE on an inbound message. If NULL_VALUE is populated and no default is configured, value of 1 (SUM - Expose Order Info Only) will automatically be applied.

Default MPID: Will be applied if a default value is configured and field is populated with NULL_VALUE on an inbound message. If NULL_VALUE is populated and no default is configured, message will be rejected.

Per-Session Behavioral Configurations

IEX Options allows certain logical session behavior to be configured per-logical session, as described below. Elections for each of the below should be made when executing the applicable IEX Options Port Request Form to establish a new logical session.

Unsolicited Restatement Subscription: Determines whether IEX Options will send unsolicited Replaced/Repriced messages on this logical session.

Cancel on Disconnect: Determines whether, in the event of a logical disconnect, IEX Options will automatically cancel all resting orders/quotes sent from this logical session.

Trade Bust/Adjust Subscription: Determines whether IEX Options will send unsolicited Trade Bust / Correct messages on this logical session.

Routing Enablement: If disabled and an order with no ExecInst is received, IEX Options will implicitly treat the order as ExecInst = 2 (Do Not Route).

Purge Enablement: Only applicable to Market Maker Quoting sessions. Determines whether Purge Requests will be accepted via the Market Maker Quoting session.

Per-MPID Default Values on Inbound Messages

IEX Options allows default values for individual fields to be configured per-sending MPID, as described below. If a default value is configured via Member Onboarding or through Market Operations and no value is supplied on an inbound message to IEX Options, the default value will be applied and reflected back on acknowledgements:

Default Account: Will be applied if a default value is configured and field is populated with NULL_VALUE on an inbound message from the MPID for the message.

Default OptionalData: Will be applied if a default value is configured and field is populated with NULL_VALUE on an inbound message from the MPID for the message.

Default ClearingAccount: Will be applied if a default value is configured and field is populated with NULL_VALUE on an inbound message from the MPID for the message.



Per-MPID Behavioral Configurations

IEX Options allows certain logical session behavior to be configured per-MPID, as described below.

Allow Market Orders: Determines whether IEX Options accept or reject orders with OrdType = 1 (Market) sent under this MPID.

Allow ISO IOC Limit Order: Determines whether IEX Options accept or reject orders with TimeInForce = 1 (IOC) and Execlnst = 1 (ISO) sent under this MPID.

Allow ISO Day Limit Order: Determines whether IEX Options accept or reject orders with TimeInForce = 0 (Day) and Execlnst = 1 (ISO) sent under this MPID.



Risk Management Controls

Market Order NBBO Width Protection

The IEX Options System will reject Market Orders if the NBBO width is greater than an IEX Options-defined percentage of the NBBO midpoint (with a minimum dollar value and maximum dollar value constraining this range).

Market Order in a No-Bid (Offer) Series

During continuous trading, or at the time the Opening / Re-Opening Process concludes and interest is transitioned to the continuous book, Market Orders are evaluated against the current NBB/NBO. If there is no NBO, Buy Market Orders will be rejected. If there is no NBB, Sell Market Orders will be rejected.

Drill-Through Protection

At time of entry into the IEX Options order book, all marketable orders receive an initial Drill-Through Price (which is the Working / Display Price of the order) up to which that order can execute. The Drill-Through Price is determined as an IEX Options-defined price (in dollars / cents) through the reference price during continuous trading. Drill-Through Protection is not applied outside of continuous trading. During continuous trading, the reference price is the contra-side NBBO. At the conclusion of the Opening / Re-Opening Process, the reference price is the contra-side of the Valid Width NBBO, if available, else the contra-side NBBO.

Market Orders or IOC Limit Orders will execute up or down to their initial Drill-Through Price and any unfilled interest will be canceled. Day Limit Orders that execute up to their initial Drill-Through Price will post at that price for the duration of the current Drill-Through Iteration. At the conclusion of that iteration, these orders will be assigned a new Drill-Through Price up to which they are eligible to execute. After the conclusion of the second iteration, any unfilled interest will be canceled.

Should the same-side NBB/NBO improve to a price more aggressive than the current Drill-Through Price while Drill-Through Protection is in effect, the current Drill-Through Protection iteration will immediately end. If the iteration ending in response to an NBB/NBO update is the first iteration, the second iteration will immediately begin at the new NBB/NBO price.

Note that Post Only Limit Orders, Market Maker Quotes, and orders with an ExecInst of ISO are not subject to Drill-Through Protection.

Intrinsic Value Check

Applies only to non-ISO Limit Orders and Quotes to sell. Not enforced if the Intrinsic Value cannot be calculated. Applied to orders received prior to the Opening Process, during the Opening Process, during a Trading Halt, or during the Re-Opening process at the conclusion of the Opening / Re-Opening Process. Applied to orders received during Continuous Trading on arrival and re-applied to orders received prior to a Trading Halt at the time a Re-Opening Process concludes.

The Intrinsic Value for an individual series is calculated as (Series' Strike Price – Reference Price) for Puts, (Reference Price – Series' Strike Price) for Calls, where Reference Price is the Last Trade (of any size) in the underlying security on the Primary Market.

For both Puts and Calls, if (Price of Order/Quote \leq (Intrinsic Value – IEX Options-defined Threshold Value)), the order / quote is rejected.

Arbitrage Check

Applies only to Buy Limit Orders and Quotes. For Calls, applied to orders received prior to the Opening Process, during the Opening Process, during a Trading Halt, or during the Re-Opening process at the conclusion of the Opening / Re-Opening Process, and applied to orders received during Continuous Trading on arrival and re-applied to orders received prior to a Trading Halt at the time a Re-Opening



Process concludes. For Puts, applied to orders immediately upon entry, regardless of trading status, and re-applied to those received prior to a Trading Halt at the time a Re-Opening Process concludes.

For Puts, if (Limit Price of Limit Order \geq Strike Price of Option), the order is rejected.

For Calls, if (Limit Price of Limit Order \geq (Last Trade Price of underlying security in Primary Market + IEX Options-defined threshold value)), the order is rejected.

Limit Order Price Protection

During continuous trading, applied upon order entry to both Limit Orders and Quotes. For Limit Orders and Quotes received prior to the Opening Process, during the Opening Process, during a Trading Halt, or during the Re-Opening process, applied upon conclusion of the Opening Process before Drill-Through Protections are applied.

The Reference Price for Limit Order Price Protections is based on the contra-side NBBO during continuous trading. When transitioning from the Opening or Re-Opening Process, the Reference Price is based on the Auction Price (if available), else the contra-side of the Valid Width NBBO for the Opening / Re-Opening Process (if available), else the contra-side NBBO.

The Reference Price will fall into an IEX Options-defined Price Bin (e.g., $\$1.00 < \text{Reference Price} \leq \2.00) which dictates the Price Protection Value for the check. The Price Protection Value, depending on the Price Bin, is the greater of either a notional value (e.g., $\$0.50$) or a percentage of the Reference Price (e.g., 20%).

Limit Orders and Quotes to Buy will be rejected if $\text{Limit Price} \geq (\text{Reference Price} + \text{Price Protection Value})$.

Limit Orders and Quotes to Sell will be rejected if $\text{Limit Price} \leq (\text{Reference Price} - \text{Price Protection Value})$.

IEX Options imposes a default Price Protection Value for each Price Bin. Users have the ability, by MPID, to define custom Price Protection Value settings within each Price Bin, so long as they do not exceed the default value imposed by IEX Options.

Per-Order Max Quantity Limits

No IEX Options default imposed; User-configurable by MPID. Applied on all Orders, regardless of TIF or Order Type, during all trading statuses. Does not apply to Market Maker Quotes.

If the OrdQty specified on the order exceeds the Max Quantity configured by the User, the order will be rejected.

Per-Order Max Notional Limits

No IEX Options default imposed; User-configurable by MPID. Applied on all Orders regardless of TIF or Order Type, during all trading statuses *except* on Market Orders entered prior to the Opening Process or during a Trading Halt, in which case the check will be performed after the Opening / Re-Opening Process and cancelled if the leaves quantity breaches the limit. Does not apply to Market Maker Quotes.

For Limit Orders: If the OrdQty specified on the order multiplied by the Price specified on the order exceeds the Max Notional configured by the User, the order will be rejected.

For Market Orders: If the OrdQty specified on the order multiplied by the far-side NBBO price at time of entry exceeds the Max Notional configured by the User, the order will be rejected.

Order Reject Type Checks

No IEX Options default. User-configurable by MPID, where Users can elect to restrict the sending (across sessions) of the following order types under the MPID specified:

- ISO Day Limit Orders



- ISO IOC Limit Orders
- Market Orders

If a User restricts one of the above, and an order with the combination of Type/TIF/Handling instruction matching the elected restriction is received under the MPID for which the election is configured, the order is rejected.

Restricted Symbol Checks

No IEX Options default. User-configurable by MPID, where Users can elect to restrict the sending of trading interest under this MPID (across sessions) in specified underlying symbols by UnderlyingID (e.g., SPY). There is no limit on the number of underlying symbols that can be restricted for a given MPID.

If a User restricts trading under a given MPID in a given underlying, any order sent under that MPID targeting an instrument (series) on that UnderlyingID will be rejected.

Max Duplicative Order Threshold

No IEX Options default. User-configurable by MPID, where a User may specify a threshold of duplicative orders (CountLimit) and a rolling window over which the check should be performed (TimeLimit). Does not apply to Market Maker Quotes.

System maintains a separate counter for each combination of:

- Session
- Side (Buy and Sell)
- MPID or MPID Group (depending on User configuration)

For each incoming order, the System checks if the following values within the counter referenced above match the preceding order:

- Price (unless a Market Order, in which case disregarded)
- OrdQty
- InstrumentID

If the above match the preceding order for a given counter, the counter is incremented and checked against the User-configured threshold. If the counter exceeds the CountLimit within the TimeLimit configured by the User, the threshold is breached. In the absence of orders, a counter will be reset to 0, and the duplicative criteria cleared, upon expiration of the time window. Once limit has been breached, all subsequent duplicative orders will be rejected until count < limit. Non-duplicative orders continue to be accepted at all times.

Activity-Based Risk Controls

No IEX Options default, but mandatory for all Market Makers for order/quote entry in all underlying symbols - both appointed and non-appointed. If an UnderlyingID + MPID is not configured with an Activity-Based Limit, all orders/quotes with those identifiers will be rejected. Optional for all other Users. User-configurable per (MPID + UnderlyingID) combination, with limits/counters shared *across* sessions on which that MPID trades. For each (MPID + UnderlyingID) combination, Users set a combination of Limit (PercentageLimit or CountLimit) and TimeLimit, depending on which of the following 3 Activity-Based Risk Control types they select for a given UnderlyingID:

- Transaction-Based - Counts # order/quote executions that occur over TimeLimit, checks against CountLimit
- Volume-Based - Counts # contracts executed from orders/quotes over TimeLimit, checks against CountLimit
- Percentage-Based - Calculates # contracts executed from orders/quotes over TimeLimit as a % of total OrdQty across all orders/quotes, checks against QuoteLimit



Note that a User can elect to set up to one of each of the three types of Activity-Based Risk Controls described above for a given (MPID + UnderlyingID) but cannot define multiple Activity-Based Risk Controls of the same type. When an Activity-Based Risk Control is breached, the system will automatically cancel all resting orders / quotes for that MPID in that UnderlyingID. New Order Singles, Cancel/Replace Messages, and New Bulk Quote Messages will also be rejected until the control is reset. This reset can be performed either through sending a Risk Action Request with RiskAction = 1 (Unblock) or through contacting Market Operations.

Global Risk Mitigation Protection (GRMP)

No IEX Options default, optionally available to Users.

GRMP is defined across all underlying symbols for a given MPID or group of MPIDs belonging to the same Firm (MPID Group). A given MPID may only be subject to a single GRMP setting (either specific to that MPID or as part of an MPID Group).

Users of GRMP set a CountLimit (in # breaches) and TimeLimit. Individual Activity-Based Risk Control Breaches at the MPID + UnderlyingID level for MPIDs subject to a GRMP configuration increment toward the CountLimit. A Market Maker Quote or Market Maker order reject as a result of the Arbitrage or Intrinsic Value price checks will also increment the CountLimit. If the CountLimit is exceeded within the TimeLimit, all resting orders are canceled from the book and all subsequently sent orders/quotes are blocked across all MPIDs (if multiple) belonging to this group and across all Options series. Note that unlike ABRC breaches, this “Cancel & Block” functionality is best efforts.



Message Throttling

Business messages from the User sent along the User's session are governed by an in-flight message control mechanism. The number of in-flight messages is determined by counting unacknowledged business messages transmitted from the User and awaiting a response. Protocol messages are not subject to in-flight restrictions.

A session enters an in-flight constrained state once the number of unacknowledged business messages reaches 5 messages. While in this state, the session will temporarily stop reading from the User's port until acknowledgments reduce the number of unacknowledged messages below the threshold.

Denial of Service Restrictions

The IEX Options Gateway maintains a running count of protocol errors and application layer rejects on a per-session instance basis. If either counter exceeds the defined threshold, the session will enter Denial-of-Service mode. When this happens, the IEX Options Gateway will:

- Reset both counters to zero,
- Cancel orders based on customer cancel on disconnect settings for the session's SenderCompID,
- Disconnect the session, and
- Refuse connection attempts for 60 seconds.

Further explanation of protocol errors is available in the IEX Options Binary Session Protocol Specification.



FIX Drop Copy

Separate FIX Drop Copy sessions can be configured for the order activity that occurs over IEX Binary Options Protocol (IBOP) Sessions. FIX Drop Copy sessions can be configured as either:

- All Order Activity: Includes receipt of:
 - Order & Order Cancel/Replace Acknowledgments
 - Unsolicited Modify Acknowledgements
 - Order Cancel Acknowledgements
 - Execution Reports
 - Trade Bust/Corrects*
 - Application Layer Rejects
- Fills Only: Includes receipt of:
 - Execution Reports
 - Trade Bust/Corrects*

*Members must optionally specify that they wish to receive Trade Bust / Correction messages when configuring their FIX Drop Copy sessions for this message to be sent.

Note that Market Maker Quoting sessions will only generate FIX Drop Copies for Execution Reports and, optionally, Trade Bust/Corrects.

FIX Drop Copy sessions can be configured to receive order activity based on the following filters:

- Session(s) – A single or multiple order entry sessions
- MPID(s) – A single or multiple MPIDs
- Clearing Number – The default clearing number (OCCID) for an MPID, MPID + UnderlyingID, or specified CMTA Clearing Number (FIX-439 ClearingFirm) for CMTA values known by IEX Options.

Note that FIX Drop Copy sessions configured by Clearing Number can only be configured as Fills Only.

Mapping of Binary Messages to FIX Messages for FIX Drop Copy:

IEX Binary Options Protocol Message Name	Distinguishing Field	FIX Message Name	FIX Message Type	FIX ExecType
Order & Order Cancel/Replace Acknowledgement	AckType = 1 (New Interest)	New Order Acknowledge (Exec Report)	8	0
	AckType = 3 (Canceled)	Order Canceled (Exec Report)	8	4
	AckType = 4 (Pending Replace)	Pending Replace (Exec Report)	8	E
	AckType = 5 (Replaced)	Replaced (Exec Report)	8	5
Unsolicited Modify Acknowledgment	AckType = 5 (Replaced)	Repriced (Exec Report)	8	D
Order Cancel Acknowledgment	AckType = 3 (Canceled)	Order Canceled (Exec Report)	8	4
		Unsolicited Cancel (Exec Report) <i>Sent when Order Cancel Acknowledgment was sent in response to an Order Cancel Request (OrigClOrdID populated on binary message.)</i>	8	4
		Unsolicited Cancel (Exec Report) <i>Sent when Order Cancel Acknowledgment was sent unsolicited (OrigClOrdID is NULL_VALUE on binary message.)</i>	8	4



	AckType = 2 (Pending Cancel)	Pending Cancel (Exec Report)	8	6
Mass Cancel Acknowledgement	N/A	Mass Cancel Acknowledgement (Exec Report)	8	M
Execution Report (Partial and Full Fills)	LeavesQty > 0 (Partial Fill)	Partial and Full Fills (Exec Report)	8	1
	LeavesQty = 0 (Full Fill)	Partial and Full Fills (Exec Report)	8	2
Trade Bust/Correct	N/A	Trade Bust / Correction	UCC	N/A
Application Layer Reject <i>(Application Layer Rejects w/ RejectType = 5, 6, 7, or 8 do not generate FIX Drop Copy messages)</i>	RejectType = 1 (New Order Reject)	Order Rejected (Exec Report)	8	8
	RejectType = 2 (Cancel/Replace Request Reject)	Order Cancel & Cancel/Replace Reject	9	N/A
	RejectType = 3 (Cancel Request Reject)	Order Cancel & Cancel/Replace Reject	9	N/A
	4 = Mass Cancel Request Reject	Mass Cancel Reject	9	N/A

Mapping of Binary Fields to FIX Fields for FIX Drop Copy:

If nothing is specified in “Notes”, the fields follow the same formatting and enumeration logic between both protocols.

Binary Field Name	FIX Field Name(s)	Notes
logonId <i>(see IEX Options Exchange Binary Session Protocol for details)</i>	TargetCompID (56)	
subSessionId	TargetSubID (57)	
InstrumentID	Symbol (55) + MaturityMonthYear (200) + PutOrCall (201) + StrikePrice (202) + MaturityDay (205)	InstrumentID maps to a distinct combination of the tags listed. Lookup should be performed to translate.
marketParticipantID (MPID)	DeliverToCompID (115)	
ClOrdID	ClOrdID (11)	
OrigClOrdID	OrigClOrdID (41)	
Price	Price (44)	
OrderQty	OrderQty (38)	
TimeInForce	TimeInForce (58)	0 -> 0 1 -> 3
Account	Account (1)	
SequenceTime	NanosecondSequenceTime (20011)	



TransactTime	TransactTime (60), NanoSecondTransactTime (20010)	TransactTime, rounded to the nearest millisecond, will be reflected in TransactTime (60) (in header of outbound message.) TransactTime, with nanosecond precision, will be reflected in NanoSecondTransactTime (20010).
OrderID	OrderID (37)	
LeavesQty	LeavesQty (151)	
EffectiveLimitPrice	EffectiveLimitPrice (9690)	
DisplayPrice	DisplayPrice (9691)	
ReasonCode	Text (58)	
AckType	N/A	See “Mapping of Binary Messages to FIX Messages for FIX Drop Copy” above.
TargetPartyID	TargetPartyID (1462)	
AuctionID	AuctionID (9385)	
ClearingFirm	ClearingFirm (439)	
ClearingAccount	ClearingAccount (440)	
RoutingFirmID	RoutingFirmID (7933)	
AIQ	Anti-Internalization Qualifiers (AIQ) ID (7928)	
CustomerOrFirm	CustomerOrFirm (204)	
OpenClose	OpenClose (77)	0 -> O 1 -> C 2 -> N
AttributedQuote	AttributedQuote (20001)	
CancelInsteadOfSlide	CancelInsteadOfSlide (20003)	0 -> 0 1 -> 3
DisplayInst	DisplayInst (9140)	NULL_VALUE -> - 1 -> P
ExecInst	ExecInst (18)	NULL_VALUE -> - 1 = f 2 = i
OrdType	OrdType (40)	
Side	Side (54)	
ExecID	ExecID (17)	



LastPx	LastPx (31)	
CumQty	CumQty (14)	
LastQty	LastQty (32)	
TradeLiquidityIndicator	TradeLiquidityIndicator (9730)	
FeeCode	FeeCode (9882)	
RestatementReason	ExecRestatementReason (378)	
ContraClearingAccount	ContraClearingAccount (20017)	
ContraClearingFirm	ContraBroker (375)	
ContraMPID	ContraTrader (337)	
ContraOpenClose	ContraOpenClose (20018)	0 -> O 1 -> C 2 -> N
ContraCustomerOrFirm	ContraCustomerOrFirm (20016)	
OCCID	OCCID (20110)	
AckStyle	AckStyle (20100)	
MPIDFilter	MPIDFilter (20101)	
BulkAction	BulkAction (20102)	
CancelCount	CancelCount (20103)	
ContraOCCID	ContraOCCID (20111)	
ExecID	ExecID (17)	
TradeID	TradeID (9483)	
TradeRefID	TradeRefID (20112)	
BustOrCorrection	ExecTransType (20)	
OptionalData	OptionalData (526)	
N/A	SecurityType (167)	Always populated with "OPT"

Post-Trade Adjustment Messaging

Various changes made to the details of a trade after the initial publication of Execution Reports (Partial and Full Fills) will generate Trade Bust / Correction messages sent to the Member. The table below details the behavior on Order Entry and Drop Copy Sessions for receiving these messages when "Receive Busts / Adjusts" is enabled via the Port Request Form for the given session.

- **Trade Bust:** When a trade is cancelled by IEX Options.
- **Trade Correction:** When the price of a trade is modified by IEX Options.
- **Trade Adjustment:** When, in response to a Member request, one of the following fields is updated on an execution report:



- Account
 - MPID
 - OpenClose
 - CustomerOrFirm
 - ClearingFirm
 - ClearingAccount
 - OptionalData
 - RoutingFirmID
 - OCCID
- **Contra Trade Adjustment:** When, in response to the request of a Member who was the contra of the recipient of an execution report on the trade, one of the following fields is updated as a result:
- ContraClearingFirm
 - ContraMPID
 - ContraCustomerOrFirm
 - ContraClearingAccount
 - ContraOpenClose
 - ContraOCCID

		Trade Bust	Trade Correction	Trade Adjustment	Contra Trade Adjustment
Same Day as Trade	Order Entry Session	Yes	Yes	No	No
	Drop Copy Session	Yes	Yes	Yes	Yes
T + N	Order Entry Session	No	No	No	No
	Drop Copy Session	No	No	Not Supported	Not Supported



System Architecture

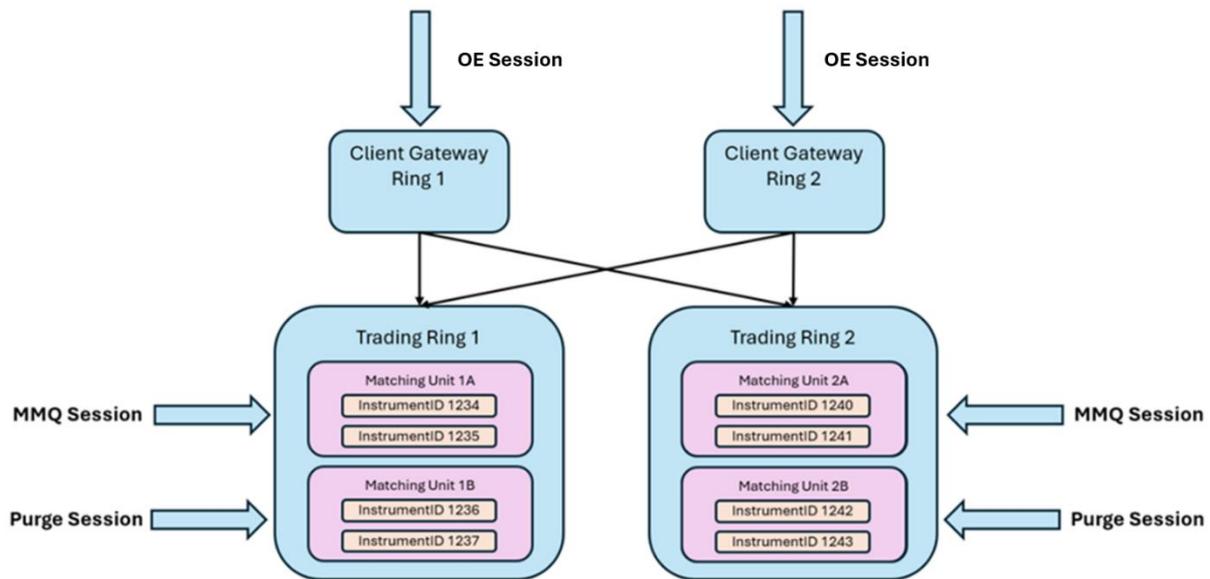
IEX Options leverages a multi-ring architecture intended to maximize performance at scale. This architecture includes multiple Client Gateway Rings to which Order Entry sessions connect and multiple Trading Rings to which Market Maker Quoting and Purge Sessions connect. Trading Rings also house the multiple Matching Units on which tradeable instruments (as denoted by InstrumentIDs) are maintained. A given InstrumentID is on a single Matching Unit, which is in a single Trading Ring. Additionally, all InstrumentIDs sharing the same underlying (UnderlyingID) will be hosted in the same Trading Ring.

The Matching Unit and Trading Ring in which an InstrumentID is hosted may change between trading days as part of System load balancing. At start of each day, each InstrumentID’s Trading Ring and Matching Unit will be published both in the Instrument Ref Data message detailed below.

Client Gateway Rings directly sequence inbound messages to all Trading Rings, meaning a single Order Entry session is able to submit interest for any tradeable InstrumentID. As a result, Order Entry Session Users do not need to take the IEX Options System’s distribution of InstrumentIDs across various Trading Rings into consideration for purposes of submitting interest.

Market Maker Quoting and Purge Sessions connect directly to individual Trading Rings, meaning only the subset of InstrumentIDs assigned in a given Trading Ring are accessible via a Market Maker Quoting or Purge Session connected to that Trading Ring. To access all tradeable InstrumentIDs across Trading Rings via these sessions, a User should establish a dedicated session for each Trading Ring in the IEX Options System.

An illustrative diagram of the architecture depicting two Client Gateway Rings and two Trading Rings (not representative of full production System architecture) is depicted below:



Session Types & Message Type Availabilities

Note that FIX Order Entry sessions are also supported for IEX Options. Details regarding FIX Order Entry Sessions are available in IEX Options FIX Specification.

Order Entry (OE) Sessions: Order Entry Sessions are the sole binary session type through which orders can be sent. Order Entry Sessions are available to Order Entry Firms and Market Makers.



Market Maker Quoting (MMQ) Sessions: Market Maker Quoting Sessions are the sole session type through which Market Maker Quotes can be sent. Orders cannot be sent through Market Maker Quoting Sessions.

Purge Sessions: Purge Sessions are solely available for the mass cancellation of Market Maker Quotes. No orders and quotes can be sent via Purge Sessions.

Message Availability by Session Type					
			Order Entry (OE) Session	MM Quoting (MMQ) Session	Purge Session
Trading Messages	User to IEX Options	New Order Single	Y	N	N
		Order Cancel/Replace Request	Y	N	N
		Order Cancel Request	Y	N	N
		New Bulk Quote	N	Y	N
		Mass Cancel Request	Y	Y	N
		Purge Request	N	C*	Y
	IEX Options to User	Order & Order Cancel/Replace Acknowledgement	Y	N	N
		Unsolicited Modify Acknowledgement	Y	N	N
		Order Cancel Acknowledgement	Y	N	N
		Mass Cancel Acknowledgement	Y	Y	N
		New Bulk Quote Acknowledgement	N	Y	N
		New IOC Quote Acknowledgement	N	Y	N
		Quote Restated	N	Y	N
		Quote Canceled	N	Y	N
		Purge Acknowledgement	N	Y	Y
		Execution Report (Partial and Full Fills)	Y	Y	N
		Trade Bust/Correct	Y	Y	N
Application Layer Reject	Y	Y	Y		
Config & Risk Messages	User to IEX Options	Risk Limit Update Request	Y	Y	N
		Risk Action Request	Y	Y	N
	IEX Options to User	MPID Configuration Acknowledgement	Y	Y	Y
		Market Maker Symbol Appointment	N	Y	N
		Session Configuration Acknowledgement	Y	Y	Y
		Risk Control Acknowledgement	Y	Y	N
Risk Control Alert	Y	Y	N		

*MM Quoting Sessions can be configured to send Purge Requests via the Market Maker Quoting Port Request Form.

Note that for all fields listed in messages below, **bolded** field names indicate that the field is always a required field for the message. Asterisked* field names indicate that the field, if populated with the Null value, can be auto-populated with a Session or MPID default value, if configured. If a **bolded** and asterisked* field is not sent in a message, and no default value is configured, the message will be



rejected. For fields that do not need to be populated, the User should use the NULL_VALUE associated with that field's data type (see *Data Types* above for further detail).



REFERENCE DATA

Start of Day

Each of the following messages will be published, unsolicited, by the IEX Options System at start of day across each session upon logon:

1. Underlying Ref Data Messages (one for each Underlying symbol available for trading. On Market Maker Quoting and Purge sessions, only the Underlying symbols that are accessible on the Trading Ring to which the session is connected will be published)
2. Instrument Ref Data Messages (one for each available tradeable instrument. On Market Maker Quoting and Purge sessions, only the instruments that are accessible on the Trading Ring to which the session is connected will be published)
3. Session Configuration Acknowledgement Messages (published exactly once per session)
4. MPID Configuration Acknowledgement Messages (one for each MPID enabled for this session)
5. Market Maker Symbol Appointment Messages (one for each UnderlyingID + MPID combination in which an MPID enabled to send quotes on this session is appointed as a Market Maker in that UnderlyingID on that day, applicable to Market Maker Quoting sessions only)
6. Risk Control Acknowledgement Messages (one for each risk control configured per MPID enabled to send quotes / orders on this session. Sent on Order Entry and Market Maker Quoting Sessions only)

Mapping to DEEP Market Data

The following fields will be consistent between the messages a User receives via their Order Entry session and those published over DEEP Market Data for purposes of correlating the messages sent along the IEX Options Gateway with those published on market data.

Message Type	Field Mapping
Order & Order Cancel/Replace Acknowledgment	OrderID
Unsolicited Reprice Acknowledgement	OrderID
Order Cancel Acknowledgment	OrderID
Execution Report (Partial and Full Fills)	OrderID, TradeID (published as "Trade ID" on DEEP)
Trade Bust	OrderID, TradeID (published as "Trade ID" on DEEP)

DATA STRUCTURES

SBE Header

SBE includes a header for each message. The SBE header is followed by the SBE body for the message.

Field	Offset	Length	Type	Description
Block Length	0	2	uint16	The number of bytes in the message body (does not include the header bytes)
Template ID	2	2	uint16	Identifier of the message template (i.e.. the message type)
Schema ID	4	2	uint16	The identifier of a message schema.
Version	6	2	uint16	The version number of the message schema that was used to encode the message.



Price4

Prices are encoded as a fixed-point scaled decimal, consisting of a signed long (INT32) mantissa and a constant exponent of -4.

Type Name	Length	Type	Description
Mantissa	4	INT32	The fixed-point decimal representation of the price.

Note: The exponent field is marked presence="constant" in the SBE schema and is not transmitted over the wire.

Price8

Prices are encoded as a fixed-point scaled decimal, consisting of a signed long (INT64) mantissa and a constant exponent of -8.

Type Name	Length	Type	Description
Mantissa	8	INT64	The fixed-point decimal representation of the price.

Note: The exponent field is marked presence="constant" in the SBE schema and is not transmitted over the wire.

Sequenced Message

User Type: All

Sub-session Type: All

The **Sequenced Message** serves as a container to convey business messages between the User and the User's session. The Sequence Message has several purposes.

- It serves as a record-marking standard for the underlying stream-oriented TCP transport layer. In particular, it delimits one protocol message from another.
- It identifies the sub-session to which the enclosed business message belongs.
- It carries a sequence number that increases by one for each consecutive message in a particular sub-session.
- It carries a User-supplied timestamp that is used for regulatory reporting.

It should be noted that each business message carries its own, separate Business Message Header.

Field	Type	Offset	Len	Values
MessageLength	uint16	0	2	Number of bytes after this field until the next message. A Sequenced Message with no payload has a length of 30.
SBEHeader		2	8	Schemald: 20000, Templated: 7, BlockLength: 20, Version: 0
SubsessionId	uint64	10	8	Subsession ID of contained message
Sequence	uint32	18	4	
Timestamp	uint64	22	8	UNIX Epoch in nanoseconds
Payload	uint8		variable	One business message



QuoteAck Repeating Group

Data structure included in a New Bulk Quote Acknowledgement. One group per Quote message.

For quotes that are repriced from their limit price upon entry, Price will reflect the Working / Display Price of the quote on the book, rather than the submitted limit price.

An OrderQty of 0 when AckType = 3 indicates a successful cancellation of a quote from the IEX Options Book.

If an individual quote is rejected for any other reason, the resting quote if any, will be canceled. A Price and OrderQty of 0 will be reflected. An unsolicited cancel for the resting quote will not be sent.

Field	Type	Offset	Len	Values
Group: quoteAcks (dimensions: blockLength=23, numInGroupType=uint8, min=0, max=10)				
InstrumentID	uint32	0	4	IEX Options-defined identification number assigned to the security
Side	int8	4	1	1 = Buy 2 = Sell
OrderID	uint64	5	8	Unique identifier of the order as assigned by IEX Options. Matches the OrderID published on DEEP.
AckType	int8	13	1	1 = New Interest 2 = Pending Cancel 3 = Canceled 4 = Pending Replace 5 = Replaced 6 = Individual Market Maker Quote Reject 7 = Unsolicited Reprice - Price Adjust 8 = Unsolicited Reprice - ORP 9 = Unsolicited Cancel - ORP 10 = Market Maker Quote Not Modified
Price	Price4	14	4	Working / Display Price 0.00 - 9,999.99
OrderQty	uint32	18	4	0 - 999,999
ReasonCode	uint8	22	1	Processing Outcome



USER TO IEX OPTIONS – TRADING MESSAGES

New Order Single

Available On:

- Order Entry Sessions

Sub-session Type: User-to-Gateway

Used to send New Orders into the system. Cannot be used for the submission of individual Market Maker Quotes (see New Bulk Quote message). For any field below that the User does not wish to populate on their message, provide the NULL_VALUE for that data type. If a field is populated on the order, IEX Options will also include it on Order Acknowledgements.

Field	Type	Offset	Len	Values
SBE Header				<i>Schemald: 20001, Templated: 1, BlockLength: 92, Version: 0</i>
Account*	STRING(16)	0	16	Customer-defined (max length 16 chars). ASCII characters allowed, excluding comma, semicolon, pipe delimiter, “at” symbol, greater than/less than, ampersand (&) and single/double quotation mark. A maximum of 10 characters will be passed through to the OCC Customer ID field but up to 16 characters will be maintained internally.
InstrumentID	uint32	16	4	IEX Options-defined identification number assigned to the security
marketParticipantId (MPID)*	STRING(4)	20	4	Market Participant Identifier - MPID.
CIOrdID	uint64	24	8	Day-unique identifier of message as assigned by the User. Note that IEX Options only enforces uniqueness against open orders.
ClearingAccount*	STRING(4)	32	4	OCC sub-account number / MMID. When CustomerOrFirm is set to a value of ‘3’ or ‘4’ this field must be populated with an MMID. If CustomerOrFirm (204) = 3, the MMID populated must be associated with the MPID for this order. When using CMTA, this value is the MMID for the CMTA member instead of the IEX Member executing the trade. This field will be passed through to the OCC Sub Account ID field and may be up to four alphanumeric characters.
CustomerOrFirm	int8	36	1	Capacity of the order 0 = Customer 1 = Firm 2 = Broker/Dealer 3 = Market Maker 4 = Away Market Maker 5 = Prof Customer



OpenClose	int8	37	1	0 = Open 1 = Close 2 = Not Applicable "2" is only accepted in the case that CustomerOrFirm = 3 (Market Maker)
AttributedQuote*	int8	38	1	1 = SUM - Expose order info only 2 = SUM - Expose order info and Capacity only 3 = SUM - Expose order info and MPID only 4 = SUM - Expose order info, Capacity and MPID 5 = Do not SUM
TimeInForce	int8	39	1	0 = Day 1 = IOC
CancelInsteadOfSlide*	int8	40	1	0 = Slide 1 = Cancel order instead of slide Sliding is the default behavior. CancelInsteadOfSlide will override any values set at the session level; if CancelInsteadOfSlide is populated with NULL_VALUE the default session setting will be enforced.
DisplayInst	int8	41	1	NULL_VALUE = None 1 = Post Only
ExecInst	int8	42	1	NULL_VALUE = None 1 = ISO 2 = Do Not Route (Book Only)
OrdType	int8	43	1	1 = Market 2 = Limit
TargetPartyID	STRING(4)	44	4	A valid MPID of the Directed Market Maker is required for Directed Orders.
AuctionID	uint32	48	4	Auction order identifier supplied by IEX. This identifier corresponds to the identifiers used in IEX market data products.
ClearingFirm	uint32	52	4	Clearing number of CMTA. Must be supplied for CMTA orders and left unspecified for non-CMTA orders. Must be a valid OCC clearing number, else rejected.
OptionalData*	STRING(16)	56	16	Clearing Optional Data Customer defined up to 16 characters; only printable ASCII characters allowed, excluding comma, semicolon, pipe delimiter, "at" symbol, greater than/less than, ampersand (&) and single/double quotation mark. Will be passed to the OCC in the Optional Data field.
RoutingFirmID	STRING(4)	72	4	Used to optionally convey the routing firm of the order. If supplied, value must be a valid MPID.
AIQ*	STRING(3)	76	3	Corresponds to 'Anti-Internalization Qualifiers (AIQ) ID' (7928) in FIX. Three characters: 1st character - AIQ Modifier:



				N = Cancel Newest O = Cancel Oldest B = Cancel Both S = Cancel Smallest 2nd character - Unique ID Level: F = Prevent Match at Firm (Member) Level M = Prevent Match at MPID Level 3rd character - Trading Group ID (optional): User specified alphanumeric value 0-9, A-Z, or a-z. The Unique ID level (2nd character) of both orders must match to prevent a trade. If specified on both orders, Trading Group ID (3rd character) must match to prevent a trade. The AIQ Modifier (1st character) of the inbound order will be honored. To mark order as "Free to Trade", User should populate the AIQ field with "---".
Side	int8	79	1	1 = Buy 2 = Sell
Price	Price8	80	8	0.01 - 9,999.99
OrderQty	uint32	88	4	1 - 999,999

Order Cancel/Replace Request

Available On:

- Order Entry Sessions

Sub-session Type: User-to-Gateway

Used to modify the Account, Price and/or OrderQty of a live order in the System. For Order Cancel/Replace Requests that solely modify Account or decrement order quantity, the order's time priority is preserved, while those that increment order quantity or change Limit Price will lose time priority. For any fields marked "Value supplied is validated but ignored." below, the value populated on the Order Cancel/Replace will not overwrite the value supplied on the original order. Users may populate any such fields with the NULL_VALUE for that field type.

Populate the field 'OrigClOrdID' with the ClOrdID of the order intended for replacement.

Updates to OrderQty will be used to adjust the current order's OrderQty. The difference between the OrderQty specified and the current OrderQty is applied to the order's LeavesQty. If the resulting LeavesQty would be less than or equal to zero, the System will cancel the order. In this case, an Order & Order Cancel/Replace Acknowledgement will still be sent in response reflecting a LeavesQty of 0 and 'AckType' of Canceled.

Field	Type	Offset	Len	Values
SBE Header				Schemaid: 20001, TemplateId: 2, BlockLength: 100, Version: 0
Account	STRING(16)	0	16	If populated, will replace the value supplied previously.
InstrumentIID	uint32	16	4	Must match original order.



marketParticipantId (MPID)*	STRING(4)	20	4	Must match original order.
ClOrdID	uint64	24	8	Day-unique identifier of message as assigned by the User. Note that IEX Options only enforces uniqueness against open orders.
ClearingAccount*	STRING(4)	32	4	Must match original order if previously supplied.
OrigClOrdID	uint64	36	8	Refers to the ClOrdID of a previously entered order.
CustomerOrFirm	int8	44	1	Value supplied is validated but ignored.
OpenClose	int8	45	1	Value supplied is validated but ignored.
AttributedQuote*	int8	46	1	Value supplied is validated but ignored.
TimeInForce	int8	47	1	Value supplied is validated but ignored.
CancelInsteadOfSlide*	int8	48	1	Value supplied is validated but ignored.
DisplayInst	int8	49	1	Value supplied is validated but ignored.
ExecInst	int8	50	1	Value supplied is validated but ignored.
OrdType	int8	51	1	Value supplied is validated but ignored.
TargetPartyID	STRING(4)	52	4	Value supplied is validated but ignored.
AuctionID	uint32	56	4	Value supplied is validated but ignored.
ClearingFirm	uint32	60	4	Value supplied is validated but ignored.
OptionalData*	STRING(16)	64	16	Value supplied is validated but ignored.
RoutingFirmID	STRING(4)	80	4	Value supplied is validated but ignored.
AIQ*	STRING(3)	84	3	Value supplied is validated but ignored.
Side	int8	87	1	Value supplied is validated but ignored.
Price	Price8	88	8	0.01 - 9,999.99
OrderQty	uint32	96	4	1 - 999,999

Order Cancel Request

Available On:

- Order Entry Sessions

Sub-session Type: User-to-Gateway

This message is used to cancel a single targeted order. Populate the field 'OrigClOrdID' with the ClOrdID of the order intended for cancellation. Cannot be used to cancel individual Market Maker quotes.

Field	Type	Offset	Len	Values
SBE Header				Schemaid: 20001, TemplateId: 3, BlockLength: 24, Version: 0
InstrumentID	uint32	0	4	Must match original order.
marketParticipantId (MPID)*	STRING(4)	4	4	Must match original order.
ClOrdID	uint64	8	8	Day-unique identifier of message as assigned by the User. Note that IEX Options only enforces uniqueness against open orders.
OrigClOrdID	uint64	16	8	Refers to the ClOrdID of a previously entered order.



New Bulk Quote

Available On:

- Market Maker Quoting Sessions

Sub-session Type: User-to-Gateway

This message may be sent by an Options Market Maker to enter up to 40 Quote messages at once. The Quote messages must all be for the same Underlying security and there can only be one Quote per MPID + InstrumentID + Side. To quote multiple price levels of depth, use multiple MPIDs on the same or different sessions.

The packet is composed of a header section, followed by a minimum of one and up to 40 repeating groups.

Note that all Bulk Quotes are implicitly sent in a Market Maker capacity. Individual quotes submitted via New Bulk Quote are automatically eligible to trade against contra-side interest that has been SUMed.

New Bulk Quotes having a TIF of Day implicitly carry a Post Only handling instruction. This cannot be overridden. An accepted Quote with a TimeInForce of Day will automatically replace any resting Quote submitted under that MPID for that InstrumentID + Side. For New Bulk Quote messages with a TimeInForce of Day, if an individual Quote is rejected but the new Bulk Quote is accepted, any resting Quote for that InstrumentID + Side will be canceled, though no Quote Canceled message will be sent. Each Quote message within the packet is single sided.

New Bulk Quotes having a TIF of IOC can only specify a single repeating group, otherwise they are rejected. IOC Quotes can trade against non-Market Maker capacity contra-side resting liquidity. If both Market Maker capacity and non-Market Maker capacity interest are resting at a contra-side price level against which the IOC Quote is marketable, the IOC Quote will trade against the non-Market Maker capacity interest and, if there is remaining quantity once all such interest has been exhausted at the price level, will have such quantity rejected back once only Market Maker capacity interest remains at the contra-side price level. An IOC Quote will not trade at any price levels beyond the most aggressive price level at which there is contra-side Market Maker capacity interest. An accepted IOC Quote will not replace any resting Quote submitted under that MPID for that InstrumentID + Side. If the IOC Quote is rejected, any resting Quote for that InstrumentID + Side will not be canceled and will remain on the book.

In scenarios where the System rejects the entire New Bulk Quote message with an Application Layer Reject message and all individual quotes submitted specified instruments in the same underlying symbol, the "UnderlyingID" field of the reject message will be populated with the underlying symbol identifier and "InstrumentID" will be null.

Field	Type	Offset	Len	Values
SBE Header				Schemaid: 20001, TemplateId: 4, BlockLength: 31, Version: 0
marketParticipantId (MPID)*	STRING(4)	0	4	Market Participant Identifier - MPID.
CustomGroupID	uint16	4	2	May be populated with an optional User-specified ID for the order. Cancellation by CustomGroupID available using Purge Port only. Set to NULL_VALUE if functionality not needed. For TimeInForce = IOC: Set to NULL_VALUE
CIOrdID	uint64	6	8	Day-unique identifier of message as assigned by the User. Note that IEX



				does not directly enforce uniqueness of this field for New Bulk Quotes.
ClearingAccount*	STRING(4)	14	4	OCC sub-account number. When submitted quotes, this field must be populated with an MMID associated with the MPID being sent. When using CMTA, this value is the MMID for the CMTA member instead of the IEX Member executing the trade. This field will be passed through to the OCC Sub Account ID field and may be up to four alphanumeric characters.
CancelInsteadOfSlide*	int8	18	1	For TimeInForce = Day: NULL_VALUE = Slide 1 = Cancel order instead of slide Sliding is the default behavior. CancelInsteadOfSlide will override any values set at the port level; if CancelInsteadOfSlide is omitted the default port session setting will be enforced. For TimeInForce = IOC: Set to NULL_VALUE
SendTime	uint64	19	8	Customer-provided sending time. CAT compliance Number of nanoseconds since Epoch. Must be specified on a New Bulk Quote.
AIQ*	STRING(3)	27	3	Corresponds to 'Anti-Internalization Qualifiers (AIQ) ID' (7928) in FIX. Three characters: 1st character - AIQ Modifier: N = Cancel Newest O = Cancel Oldest B = Cancel Both S = Cancel Smallest 2nd character - Unique ID Level: F = Prevent Match at Firm(Member) Level M = Prevent Match at MPID Level 3rd character - Trading Group ID (optional): User-specified alphanumeric value 0-9, A-Z, or a-z. The Unique ID level (2nd character) of both orders must match to prevent a trade. If specified on both orders, Trading Group ID (3rd character) must match to prevent a trade. The AIQ Modifier (1st character) of the inbound order will be honored.



				To mark quote as "Free to Trade", User should populate the AIQ field with "---".
TimeInForce	int8	30	1	0 = Day 1 = IOC
Group: quoteUpdates (dimensions: blockLength=15, numInGroupType=uint8, min=1, max=40)				
→ InstrumentIID	uint32	0	4	IEX Options-defined identification number assigned to the security.
→ Side	int8	4	1	1 = Buy 2 = Sell
→ Price	Price4	5	4	0.00 - 9,999.99
→ OrderQty	uint32	9	4	0 - 999,9999
→ QuoteType	int8	13	1	0 = Standard 1 = Options Risk Parameter - Reprice 2 = Options Risk Parameter - Cancel For TimeInForce = IOC: Set to 0
→ Reserved	int8	14	1	For QuoteType = 1 or 2: Populate with "2". For QuoteType = 0: Populate with NULL_VALUE

Mass Cancel Request

Available On:

- Order Entry Sessions
- Market Maker Quoting Sessions

Sub-session Type: User-to-Gateway

This message is used to bulk cancel multiple orders/quotes sent *along this session* based on the combination of criteria specified in the message and optionally block subsequent orders/quotes sent along this session from being accepted, subject to the same criteria.

- Orders that have been SUMed or Response Orders sent targeting a SUMed order will be canceled by a Mass Cancel Request.
- Orders for which interest has been routed out that has not returned will generate a Pending Cancel acknowledgement back to the Member in response to a Mass Cancel Request, regardless of the AckStyle selected. The cancel will be applied, if applicable, to any unfilled routed interest once it has returned, at which time a subsequent Unsolicited Cancel message will be sent. Such orders are included in the CancelCount returned in the Mass Cancel Acknowledgement.
- Orders or quotes sent along other sessions will not be impacted by Mass Cancel Requests.

Note that for MM Quoting Sessions, this message explicitly cancels Market Maker Quotes. For other order entry sessions, this message will explicitly cancel orders, regardless of their capacity. If a User wishes to cancel orders/quotes sent down multiple distinct sessions, they are advised to send separate Mass Cancel Requests down each such session to remove all resting interest.

For BulkAction = 0 (Cancel) or 1 (Cancel and Block), this message can be used to cancel (and optionally) block across MPIDs on this session (Session-Level) or by individual MPID on this session (MPID-Level), and if canceling / blocking by individual MPID, it can additionally be used to cancel / block by UnderlyingID (UnderlyingID-Level). A cancel / block *cannot* be sent for a single UnderlyingID across MPIDs. Note that on Market Maker Quoting Sessions, this message can only be used to cancel / block on the UnderlyingIDs accessible from that session.



For BulkAction = 2 (Unblock), this message can be used to unblock a previously imposed Block from a prior Mass Cancel with BulkAction = 1 (Cancel and Block).

The table below details the criteria that can be specified on a Mass Cancel Request and the subsequent action that must be taken to facilitate an Unblock:

Block Type	UnderlyingID Value	MPIDFilter Value	Result	Unblock Action Required
MPID-Level	NULL_VALUE	= 0 (Take BulkAction explicitly for this MPID on this session)	Will cancel all orders / quotes sent on this session under this MPID and block subsequent orders / quotes.	MPID-Level Send Mass Cancel Request w/ UnderlyingID = 2 (Unblock), UnderlyingID = NULL_VALUE, and MPID Filter = 0.
Session-Level	NULL_VALUE	= 1 (Take BulkAction across MPIDs on this session)	Will cancel all orders / quotes sent on this session across MPIDs and block subsequent orders / quotes (synthetic Cancel on Disconnect).	Session-Level Send Mass Cancel Request w/ BulkAction = 2 (Unblock), UnderlyingID = NULL_VALUE, and MPID Filter = 1.
UnderlyingID-Level	Populated w/ Underlying	= 0 (Take BulkAction explicitly for this MPID on this session)	Will cancel all orders / quotes sent on this session in the UnderlyingID populated for this MPID and block subsequent quotes / orders.	UnderlyingID-Level Send Mass Cancel Request w/ BulkAction = 2 (Unblock), UnderlyingID populated with the underlying being targeted for unblock, and MPID Filter = 0. Or: MPID-Level Send Mass Cancel Request w/ BulkAction = 2 (Unblock), UnderlyingID = NULL_VALUE, and MPID Filter = 0 (note that this will remove all UnderlyingID-specific blocks currently enforced for this MPID on this session).
-	Populated w/ Underlying	= 1 (Take BulkAction across MPIDs on this session)	Will be rejected.	-

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, TemplateId: 5, BlockLength: 27, Version: 0
UnderlyingID	uint32	0	4	Optional. May be populated with an underlying symbol. If populated, only quotes/orders for the UnderlyingID will be cancelled. If blank, will apply to all quotes/orders on all UnderlyingIDs associated with the MPID provided.



marketParticipantId (MPID)*	STRING(4)	4	4	Market Participant Identifier – MPID.
ClOrdID	uint64	8	8	Day-unique identifier of message as assigned by the User. Note that IEX does not directly enforce uniqueness of this field for Mass Cancel Requests.
SendTime	uint64	16	8	CAT compliance Number of nanoseconds since Epoch. For Market Maker Quoting sessions - must be specified.
AckStyle	uint8	24	1	For BulkAction = “0” or = “1”: 0 = Send a single Mass Cancel Acknowledgement once all cancels have been processed. 1 = Send both Order Cancel Acknowledgement messages for each canceled order and a single Mass Cancel Acknowledgement once all cancels have been processed. On Market Maker Quoting Sessions, only AckStyle = “0” is accepted. For BulkAction = “2”: Populate w/ “0”.
MPIDFilter	uint8	25	1	0 = Take BulkAction explicitly for this MPID on this session 1 = Take BulkAction across MPIDs on this session
BulkAction	uint8	26	1	0 = Cancel 1 = Cancel and Block 2 = Unblock

Purge Request

Available On:

- Purge Sessions
- Market Maker Quoting Session (if configured)

Sub-session Type: User-to-Gateway

This message is used to bulk cancel multiple Market Maker quotes, by MPID, based on the combination of criteria specified in the message. This message can only be sent down Purge Port sessions. These sessions are only configured to access a single “Trading Ring”, which represents a subset of the total tradeable InstrumentIDs supported by the System (Users can determine which InstrumentIDs are accessible on a given Trading Ring through ref data published over TOPS/DEEP). Orders sent in a Market Maker capacity via OE Sessions will not be impacted by a Purge Request.

UnderlyingID or CustomGroupID(s) can be optionally specified on Purge Requests. The BulkAction specifies whether the Purge Request is intended to cancel quotes (Cancel) or cancel quotes and prevent acceptance of new quotes (Cancel and Block).

The behavior of the Purge Request as a result of which fields are specified are as follows:

- For Cancel (BulkAction = “0”) or Cancel & Block (BulkAction = “1”): Can be executed at the MPID, MPID + UnderlyingID, or MPID + CustomGroupID level.
 - o Invalid Submissions:
 - If both CustomGroupID and UnderlyingID are populated, the Purge Request will be rejected.
 - o Valid Submissions:



- **All Blank:** All quotes across InstrumentIDs accessible from this Purge Port session will be canceled (and blocked for the MPID provided (across InstrumentIDs and sides). If selected, the Block action will apply across all quotes sent under the MPID provided across all InstrumentIDs on this Trading Ring.
- **UnderlyingID Only:** All quotes in the UnderlyingID specified will be canceled for the MPID provided (on both sides). Note that UnderlyingID *cannot* be populated with an individual InstrumentIDs. If selected, the Block action will apply to quotes targeting InstrumentIDs on the UnderlyingID sent under the MPID provided.
- **CustomGroupID(s) Only:** All quotes that were stamped upon submission with the CustomGroupID specified will be canceled for the MPID provided, across InstrumentIDs accessible from this Purge Port session. If selected, Block action will apply across all quotes containing the CustomGroupID(s) specified sent under the MPID provided across InstrumentIDs accessible from this Purge Port session.

Note that:

- A Block specifying a CustomGroupID must be explicitly unblocked with a Risk Action Request to unblock that individual CustomGroupID. A Risk Action Request that does not specify the CustomGroupID will *not* unblock a CustomGroupID-based Block. Even if multiple CustomGroupIDs were blocked by a single Purge Request, a separate Risk Action Request must be sent for each CustomGroupID to Unblock.
- A Block specifying a UnderlyingID can be unblocked with a Risk Action Request specifying that same UnderlyingID or be unblocked with a Risk Action Request that does not specify a UnderlyingID (which will remove all MPID + UnderlyingID-level Blocks).
- A Block that does not specify a UnderlyingID can be thought of as a series of Block by (MPID + UnderlyingID) actions applied to all UnderlyingIDs accessible from Purge Session. These Blocks can be unblocked with Risk Action Requests specifying UnderlyingIDs individually or be unblocked with a Risk Action Request that does not specify a UnderlyingID (which will remove all MPID + UnderlyingID-level Blocks).

To summarize, a Block can be unblocked using a Risk Action Reset as follows:

Purge w/ Cancel & Block Fields		Risk Action Request to Unblock				
UnderlyingID Populated	CustomGroupID(s) Populated	RiskControl	Risk Action	UnderlyingID	CustomGroupID	Result
NULL_VALUE	NULL_VALUE	5 = Purge Lockout Reset	2 = Unblock	NULL_VALUE	NULL_VALUE	Reenablement for this MPID across UnderlyingIDs.
				Individual UnderlyingID Populated	NULL_VALUE	Reenablement for this MPID + UnderlyingID combination.
Populated w/ UnderlyingID	NULL_VALUE			NULL_VALUE	NULL_VALUE	Reenablement for this MPID across UnderlyingIDs.
				Individual UnderlyingID Populated	NULL_VALUE	Reenablement for this MPID + UnderlyingID combination.
NULL_VALUE	Populated w/ CustomGroupID(s)			NULL_VALUE	Populated	Reenablement for this MPID + CustomGroupID combination.

Field	Type	Offset	Len	Values
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SBE Header				Schemaid: 20001, TemplateId: 6, BlockLength: 26, Version: 0
UnderlyingID	uint32	0	4	Optional. May be populated with an underlying symbol. If populated, only quotes for the UnderlyingID will be cancelled. If blank, will apply to all quotes on all UnderlyingIDs accessible via this Purge Port session.
marketParticipantId (MPID)*	STRING(4)	4	4	Market Participant Identifier - MPID.
CIOrdID	uint64	8	8	Day-unique identifier of message as assigned by the User. Note that IEX does not directly enforce uniqueness of this field for Purge Requests.
SendTime	uint64	16	8	CAT compliance Number of nanoseconds since Epoch. For Options Market Maker sessions - must be specified.
AckStyle	uint8	24	1	0 = Send a single Purge Acknowledgement on the Purge Session once all cancels have been processed. 1 = Send a single Purge Acknowledgement on the Purge Session once all cancels have been processed. Additionally, send a Purge Acknowledgment to each Market Maker Quoting Session with this MPID on this Trading Ring once all cancels have been processed.
BulkAction	uint8	25	1	0 = Cancel 1 = Cancel and Block When "1" is selected, if UnderlyingID = NULL_VALUE, block action will be applied to all accessible UnderlyingIDs.
Group: customGroupIds (dimensions: blockLength=2, numInGroupType=uint8, min=0, max=10)				
→ CustomGroupID	uint16	0	2	May be populated with an optional User-specified ID to target quotes that were stamped with the same CustomGroupID upon submission. Do not include if CustomGroupIDCnt = 0.



IEX OPTIONS TO USER - TRADING MESSAGES

Order & Order Cancel/Replace Acknowledgement

Available On:

- Order Entry Sessions

Sub-session Type: Gateway-to-User

This message is provided by IEX Options in response to a New Order Single or Order Cancel/Replace Request. It is represented by 'AckType' values New Interest Ack, Pending Replace, Canceled, or Replaced. Note that this message will never be sent unsolicited by IEX Options - it serves only as a response to an inbound message from a User.

Note that for an 'AckType' value of Replaced, the order will always preserve its previous OrderID. For Order Cancel/Replace Requests that solely decrement order quantity, the order's time priority is preserved, while those that increment order quantity or change Limit Price will lose time priority.

If an Order Cancel/Replace request modifies the OrderQty such that the LeavesQty would be less than or equal to zero, this message will reflect LeavesQty = 0 and an 'AckType' of Canceled.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, TemplateId: 101, BlockLength: 147, Version: 0
Account	STRING(16)	0	16	Will match original New Order Single or Order Cancel/Replace Request if provided.
SequenceTime	uint64	16	8	IEX Options Application Time of Triggering Event
TransactTime	uint64	24	8	IEX Options Application Time of Event Processing Outcome
InstrumentID	uint32	32	4	IEX Options-defined identification number assigned to the security
marketParticipantId (MPID)	STRING(4)	36	4	Market Participant Identifier - MPID.
ClOrdID	uint64	40	8	Unique identifier of the order as assigned by the User.
ClearingAccount	STRING(4)	48	4	OCC sub-account number / MMID. When CustomerOrFirm is set to a value of '3' or '4' this field must be populated with an MMID. If CustomerOrFirm (204) = 3, the MMID populated must be associated with the MPID for this order. When using CMTA, this value is the MMID for the CMTA member instead of the IEX Member executing the trade. This field will be passed through to the OCC Sub Account ID field and may be up to four alphanumeric characters.
OrigClOrdID	uint64	52	8	Only for Order Cancel/Replace Acknowledgements. Refers to the ClOrdID of the previously entered order.



OrderID	uint64	60	8	Unique identifier of the order as assigned by IEX Options. Matches the OrderID published on DEEP.
CustomerOrFirm	int8	68	1	Capacity of the order 0 = Customer 1 = Firm 2 = Broker/Dealer 3 = Market Maker 4 = Away Market Maker 5 = Prof Customer
OpenClose	int8	69	1	0 = Open 1 = Close 2 = Not Applicable
AttributedQuote	int8	70	1	1 = SUM - Expose order info only 2 = SUM - Expose order info and Capacity only 3 = SUM - Expose order info and MPID only 4 = SUM - Expose order info, Capacity and MPID 5 = Do not SUM
TimeInForce	int8	71	1	0 = Day 1 = IOC
CancelInsteadOfSlide	int8	72	1	0 = Slide 1 = Cancel order instead of slide Sliding is the default behavior. CancelInsteadOfSlide will override any values set at the session level; if CancelInsteadOfSlide is omitted the default session setting will be enforced.
DisplayInst	int8	73	1	NULL_VALUE = None 1 = Post Only
ExecInst	int8	74	1	NULL_VALUE = None 1 = ISO 2 = Do Not Route (Book Only)
OrdType	int8	75	1	1 = Market 2 = Limit
TargetPartyID	STRING(4)	76	4	A valid MPID of the Directed Market Maker is required for Directed Orders.
AuctionID	uint32	80	4	Auction order identifier supplied by IEX. This identifier corresponds to the identifiers used in IEX market data products.
ClearingFirm	uint32	84	4	Clearing number of CMTA. Must be supplied for CMTA orders and left unspecified for non-CMTA orders. Must be a valid OCC clearing number, else rejected.
OptionalData	STRING(16)	88	16	Clearing Optional Data Customer defined up to 16 characters; only printable ASCII characters allowed, excluding comma, semicolon, pipe delimiter, "at" symbol, greater than/less than, ampersand (&) and single/double quotation mark. Will be passed to the OCC in the Optional Data field.



RoutingFirmID	STRING(4)	104	4	Used to optionally convey the routing firm of the order. If supplied, value must be a valid MPID.
AIQ*	STRING(3)	108	3	<p>Corresponds to 'Anti-Internalization Qualifiers (AIQ) ID' (7928) in FIX.</p> <p>Three characters: 1st character - AIQ Modifier: N = Cancel Newest O = Cancel Oldest B = Cancel Both S = Cancel Smallest</p> <p>2nd character - Unique ID Level: F = Prevent Match at Firm (Member) Level M = Prevent Match at MPID</p> <p>Level 3rd character - Trading Group ID (optional): User specified alphanumeric value 0-9, A-Z, or a-z. The Unique ID level (2nd character) of both orders must match to prevent a trade. If specified on both orders, Trading Group ID (3rd character) must match to prevent a trade.</p> <p>The AIQ Modifier (1st character) of the inbound order will be honored.</p> <p>To mark order as "Free to Trade", User should populate the AIQ field with "---".</p>
Side	int8	111	1	1 = Buy 2 = Sell
Price	Price8	112	8	0.01 - 9,999.99
OrderQty	uint32	120	4	1 - 999,999
LeavesQty	uint32	124	4	0 - 999,999
EffectiveLimitPrice	Price8	128	8	<p>Only present when order is fully or partially booked.</p> <p>If Price had to be adjusted to a less aggressive value to avoid crossing the NBBO, the adjusted price will be reported here, otherwise equals Price.</p>
DisplayPrice	Price8	136	8	<p>Only present when order is fully or partially booked.</p> <p>If order had to be temporarily displayed at a less aggressive value to avoid locking the NBBO or due to Drill-Through Protection, the initial displayed price will be reported here, otherwise equals Price.</p>
ReasonCode	uint8	144	1	See appendix for values
AckType	int8	145	1	1 = New Interest 3 = Canceled 4 = Pending Replace 5 = Replaced



ThrottleIndicator	int8	146	1	0 = Not Throttled 1 = Throttled
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Unsolicited Modify Acknowledgement

Available On:

- Order Entry Sessions

Sub-session Type: Gateway-to-User

Sent in the event of an unsolicited repricing event (e.g., when a Book Only or Post Only order with Price Adjust enabled is repriced by IEX Options or when an order subject to Drill-Through Protection is posted at a new price level). DisplayPrice and EffectiveLimitPrice are the only fields that will reflect a change from previously communicated information on this order.

This message will only be sent if OrderUnsolicitedAckSubscription = 1 (enabled) at the session level.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, Templated: 102, BlockLength: 67, Version: 0
TransactTime	uint64	0	8	IEX Options Application Time of Event Processing Outcome
InstrumentID	uint32	8	4	IEX Options-defined identification number assigned to the security
marketParticipantId (MPID)	STRING(4)	12	4	Market Participant Identifier - MPID.
OrigClOrdID	uint64	16	8	Unique identifier of the order being modified as assigned by the User.
OrderID	uint64	24	8	Unique identifier of the order as assigned by IEX Options. Matches the OrderID published on DEEP.
Price	Price8	32	8	0.01 - 9,999.99
OrderQty	uint32	40	4	1 - 999,999
LeavesQty	uint32	44	4	0 - 999,999
EffectiveLimitPrice	Price8	48	8	Only present on Accepted or Replaced, and only when order is fully or partially booked. If Price had to be adjusted to a less aggressive value to avoid crossing the NBBO, the adjusted price will be reported here, otherwise equals Price.
DisplayPrice	Price8	56	8	Only present when order is fully or partially booked. If order had to be temporarily displayed at a less aggressive value to avoid locking the NBBO or due to Drill-Through Protection, the initial displayed price will be reported here, otherwise equals Price.
RestatementReason	int8	64	1	1 = Price Adjust Repricing 2 = Drill-Through Protection Repricing 3 = Trading Halt 4 = SUM Conclusion 5 = Book Re-Submission
ReasonCode	uint8	65	1	See appendix for values
AckType	int8	66	1	5 = Replaced



Order Cancel Acknowledgement

Available On:

- Order Entry Sessions

Sub-session Type: Gateway-to-User

Sent either in response to an Order Cancel Request or unsolicited due to the cancellation of an order by IEX Options. When sent in response to an Order Cancel Request, the ClOrdID will reflect the ClOrdID for the Order Cancel Request submitted by the User and will otherwise be '0'.

Field	Type	Offset	Len	Values
SBE Header				Schemaid: 20001, TemplateId: 103, BlockLength: 63, Version: 0
SequenceTime	uint64	0	8	IEX Options Application Time of Triggering Event Matches TransactTime for unsolicited messages.
TransactTime	uint64	8	8	IEX Options Application Time of Event Processing Outcome
InstrumentID	uint32	16	4	Will match original Order Cancel Request, if provided.
marketParticipantId (MPID)	STRING(4)	20	4	Will match original Order Cancel Request.
ClOrdID	uint64	24	8	ClOrdID of the cancel request, if sent in response to an Order Cancel Request. Otherwise NULL_VALUE.
OrigClOrdID	uint64	32	8	Refers to the ClOrdID of the order that was canceled.
OrderID	uint64	40	8	Unique identifier of the order as assigned by IEX Options. Matches the OrderID published on DEEP.
Price	Price8	48	8	0.01 - 9,999.99
LeavesQty	uint32	56	4	0
ReasonCode	uint8	60	1	See appendix for values
AckType	int8	61	1	2 = Pending Cancel 3 = Canceled
ThrottleIndicator	int8	62	1	0 = Not Throttled 1 = Throttled

Mass Cancel Acknowledgement

Available On:

- Order Entry Sessions
- Market Maker Quoting Sessions

Sub-session Type: Gateway-to-User

Sent in response to a Mass Cancel Request. When the Mass Cancel Request is BulkAction = 0 (Cancel) or 1 (Cancel and Block), for orders, unsolicited Order Cancel Acknowledgements will additionally be sent for each individual order that is cancelled by the System. For quotes, no per-quote message will be sent.

Field	Type	Offset	Len	Values
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SBE Header				Schemaid: 20001, TemplateId: 104, BlockLength: 41, Version: 0
SequenceTime	uint64	0	8	IEX Options Application Time of Triggering Event
TransactTime	uint64	8	8	IEX Options Application Time of Event Processing Outcome
UnderlyingID	uint32	16	4	Will match original Mass Cancel Request if provided.
marketParticipantId (MPID)	STRING(4)	20	4	Will match original Mass Cancel Request.
ClOrdID	uint64	24	8	Unique identifier of the Mass Cancel Request as assigned by the User.
ReasonCode	uint8	32	1	See appendix for values
AckStyle	uint8	33	1	0 = Send a single Mass Cancel Acknowledgement once all cancels have been processed. 1 = Send both Order Cancel Acknowledgements for each canceled order and a Mass Cancel Acknowledgement once all cancels have been processed.
MPIDFilter	uint8	34	1	0 = Take BulkAction explicitly for this MPID on this session 1 = Take BulkAction across MPIDs on this session
BulkAction	uint8	35	1	Will match original Mass Cancel Request if provided. 0 = Cancel 1 = Cancel and Block 2 = Unblock
CancelCount	uint32	36	4	Count of canceled orders or quotes.
ThrottleIndicator	int8	40	1	0 = Not Throttled 1 = Throttled

New Bulk Quote Acknowledgement

Available On:

- Market Maker Quoting Sessions

Sub-session Type: Gateway-to-User

This message is provided by IEX Options in response to a New Bulk Quote with a TimeInForce of Day. This message is not sent unsolicited.

In the event of an individual quote reject, the resting quote for the combination of InstrumentID + Side + MPID for the rejected quote will be canceled, if any. Quotes that were individually rejected will be returned with AckType = 7 (Individual Market Maker Quote Reject) and will contain the OrderID of the resting quote associated with the combination of InstrumentID + Side + MPID for the rejected quote that has been canceled, if any.

If an individual quote is accepted and replaces a resting quote, AckType = 5 (Replaced). If an individual quote is accepted but is not replacing a resting quote, AckType = 1 (New Interest).

If a quote is repriced to a value other than its submitted limit price upon entry, the working / display price of the quote will appear as the Price in the QuoteAck repeating group of the acknowledgement.

Field	Type	Offset	Len	Values
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SBE Header				Schemald: 20001, TemplateId: 105, BlockLength: 38, Version: 0
SequenceTime	uint64	0	8	IEX Options Application Time of Triggering Event
TransactTime	uint64	8	8	IEX Options Application Time of Event Processing Outcome
marketParticipantId (MPID)	STRING(4)	16	4	Will match original New Bulk Quote.
CustomGroupID	uint16	20	2	Will match original New Bulk Quote if provided.
CIOrdID	uint64	22	8	Will match original New Bulk Quote.
ClearingAccount	STRING(4)	30	4	Will match original New Bulk Quote.
AIQ	STRING(3)	34	3	Will match value applied to New Bulk Quote.
ThrottleIndicator	int8	37	1	0 = Not Throttled 1 = Throttled
Group: quoteAcks (dimensions: blockLength=27, numInGroupType=uint8, min=1 max=40)				
➔ QuoteAck				Quote ack structure containing repeating group.

New IOC Quote Acknowledgement

Available On:

- Market Maker Quoting Sessions

Sub-session Type: Gateway-to-User

This message is provided by IEX Options in response to a New Bulk Quote with a TimeInForce of IOC. This message is not sent unsolicited.

In the event of that a New Bulk Quote with a TimeInForce of IOC is rejected, an Application Layer Reject will be sent instead of this message. When this happens, the resting quote for the combination of InstrumentID + Side + MPID for the rejected quote will not be canceled and will remain on the book, if any.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, TemplateId: 106, BlockLength: 59, Version: 0
SequenceTime	uint64	0	8	IEX Options Application Time of Triggering Event
TransactTime	uint64	8	8	IEX Options Application Time of Event Processing Outcome
marketParticipantId (MPID)	STRING(4)	16	4	Will match original New Bulk Quote.
CIOrdID	uint64	20	8	Will match original New Bulk Quote.
ClearingAccount	STRING(4)	28	4	Will match original New Bulk Quote.
AIQ	STRING(3)	32	3	Will match value applied to New Bulk Quote.
InstrumentID	uint32	35	4	IEX Options-defined identification number assigned to the security
Side	int8	39	1	1 = Buy 2 = Sell
OrderID	uint64	40	8	Unique identifier of the order as assigned by IEX Options. Matches the OrderID published on DEEP.
AckType	int8	48	1	1 = New Interest
Price	Price4	49	4	Working Price 0.00 - 9,999.99



OrderQty	uint32	53	4	0 – 999,999
ReasonCode	uint8	57	1	Processing Outcome
ThrottleIndicator	int8	58	1	0 = Not Throttled 1 = Throttled

Quote Restated

Available On:

- Market Maker Quoting Sessions

Sub-session Type: Gateway-to-User

This message is provided, **unsolicited**, by IEX Options for Unsolicited Repricing of quotes that cause a change in the working/display price. An Unsolicited Repricing can occur on quotes as a result of Price Adjust behavior or triggering of the Options Risk Parameter (ORP). On quotes repriced due to triggering of the Options Risk Parameter (ORP), Delta will be populated with the value calculated by IEX Options.

This message will only be sent if QuoteUnsolicitedAckSubscription = 1 (enabled) at the session level.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, TemplateId: 107, BlockLength: 43, Version: 0
TransactTime	uint64	0	8	IEX Options application time.
InstrumentID	uint32	8	4	IEX Options-defined identification number assigned to the security
marketParticipantId (MPID)	STRING(4)	12	4	Market Participant Identifier – MPID.
CIOrdID	uint64	16	8	Will match the CIOrdID of the New Bulk Quote message that initially placed / updated the quote being restated.
OrderID	uint64	24	8	Unique identifier of the order as assigned by IEX Options. Matches the OrderID published on DEEP.
Side	int8	32	1	1 = Buy 2 = Sell
Price	Price4	33	4	New Working / Display Price
ReasonCode	uint8	37	1	Processing Outcome
AckType	int8	38	1	7 = Unsolicited Reprice – Price Adjust 8 = Unsolicited Reprice – ORP
Delta	float	39	4	Populated with IEX Options-calculated Delta if order was restated due to ORP repricing, otherwise NULL_VALUE.

Quote Canceled

Available On:

- Market Maker Quoting Sessions

Sub-session Type: Gateway-to-User

This message is provided, **unsolicited**, by IEX Options for unsolicited cancellations of quotes. An unsolicited cancellation can occur for a number of reasons, including:

- End of Day cancellation of all remaining interest.
- Cancel on Disconnect is triggered for a Market Maker Quoting session.



- Quote is canceled due to triggering of AIQ.
- Halt initiation in an InstrumentID triggers cancellation of all resting quotes.
- A breach in Activity-Based Risk or GRMP occurs, impacting quotes.
- The Options Risk Parameter (ORP) is triggered, where quote impacted has QuoteType = 2 (Options Risk Parameter – Cancel)

On quotes canceled due to triggering of the Options Risk Parameter (ORP), Delta will be populated with the value calculated by IEX Options.

Note that the Quote Canceled message is *not* sent for individual quotes in response to a Purge Request or Mass Cancel Request once processed. A Quote Canceled message is also not sent in response to a New Bulk Quote message which removes an active quote from the book; Users will receive receipt of this cancellation in the QuoteAck Repeating Group of the New Bulk Quote Acknowledgement message.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, Templateld: 108, BlockLength: 39, Version: 0
TransactTime	uint64	0	8	IEX Options application time.
InstrumentID	uint32	8	4	IEX Options-defined identification number assigned to the security
marketParticipantId (MPID)	STRING(4)	12	4	Market Participant Identifier – MPID.
CIOrdID	uint64	16	8	Will match the CIOrdID of the New Bulk Quote message that initially placed / updated the quote being restated.
OrderID	uint64	24	8	Unique identifier of the order as assigned by IEX Options. Matches the OrderID published on DEEP.
Side	int8	32	1	1 = Buy 2 = Sell
ReasonCode	uint8	33	1	Processing Outcome
AckType	int8	34	1	3 = Canceled 9 = Unsolicited Cancel - ORP
Delta	float	35	4	Populated with IEX Options-calculated Delta if order was restated due to ORP repricing, otherwise NULL_VALUE.

Purge Acknowledgement

Available On:

- Market Maker Quoting Sessions
- Purge Sessions

Sub-session Type: Gateway-to-User

A Purge Acknowledgement is sent in response to a Purge Request.

For both AckStyle elections on the Purge Request message (=0 or = 1), a Purge Acknowledgement will be sent to the Purge Session originating the Purge Request, summarizing the total count of quotes canceled in total in the field CancelCount, and confirm the purge action selected in the field BulkAction.

Additionally, if AckStyle on Purge Request = 1, a Purge Acknowledgement will be sent to each Market Maker Quoting Session in this Trading Ring for which the MPID specified is enabled, summarizing the total count of quotes sent *from this session* that were canceled in total in the field CancelCount, and confirm the purge action selected in the field BulkAction.

Note that sending a Purge Request on a MMQ session with AckStyle = 1 can result in two Purge Acknowledgements being sent in response. In the first, the CancelCount represents the count of quotes that specifically originated from this session. In the second, the CancelCount represents the total quotes



that were canceled across sessions in response. These two Purge Acknowledgements will consistently be sent in that order.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, TemplateId: 109, BlockLength: 39, Version: 0
SequenceTime	uint64	0	8	IEX Options Application Time of Triggering Event Matches TransactTime for unsolicited messages.
TransactTime	uint64	8	8	IEX Options Application Time of Event Processing Outcome
UnderlyingID	uint32	16	4	Copied from the Purge Request, if populated.
marketParticipantId (MPID)	STRING(4)	20	4	Market Participant Identifier - MPID.
CIOrdID	uint64	24	8	Copied from the Purge Request. Unique ID of the Purge Request as assigned by the firm.
AckStyle	uint8	32	1	Copied from the Purge Request.
BulkAction	uint8	33	1	0 = Quotes Canceled 1 = Quotes Canceled and Quote Entry Blocked
CancelCount	uint32	34	4	Number of quotes cancelled in response to Purge Request. If sent on a Market Maker Quoting Session, reflects quotes cancelled from this session.
ThrottleIndicator	int8	38	1	0 = Not Throttled 1 = Throttled
Group: customGroupIds (dimensions: blockLength=2, numInGroupType=uint8, min=0, max=10)				
➔ CustomGroupID	uint16	0	2	User-specified IDs for which the Purge action was executed.

Execution Report (Partial and Full Fills)

Available On:

- Order Entry Sessions
- Market Maker Quoting Sessions

Sub-session Type: Gateway-to-User

This message type will be returned on executions for Options orders and indicates whether an order has been partially or entirely filled.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, TemplateId: 110, BlockLength: 154, Version: 0
Account	STRING(16)	0	16	Will match original order if provided.
TransactTime	uint64	16	8	IEX Options Application Time of Event Processing Outcome
InstrumentID	uint32	24	4	Identification number assigned to the security
marketParticipantId (MPID)	STRING(4)	28	4	Will match original order.
CIOrdID	uint64	32	8	Will match original order.
ClearingAccount	STRING(16)	40	4	OCC sub-account number / MMID.



				<p>When CustomerOrFirm is set to a value of '3' or '4' this field must be populated with an MMID. If CustomerOrFirm (204) = 3, the MMID populated must be associated with the MPID for this order.</p> <p>When using CMTA, this value is the MMID for the CMTA member instead of the IEX Member executing the trade. This field will be passed through to the OCC Sub Account ID field and may be up to four alphanumeric characters.</p>
CustomerOrFirm	int8	44	1	<p>Capacity of the order</p> <p>0 = Customer</p> <p>1 = Firm</p> <p>2 = Broker/Dealer</p> <p>3 = Market Maker</p> <p>4 = Away Market Maker</p> <p>5 = Prof Customer</p>
OrderID	uint64	45	8	Unique identifier of order as assigned by IEX Options. Matches the OrderID published on DEEP.
ExecID	uint64	53	8	Unique identifier of execution message.
TradeID	uint64	61	8	Unique identifier of the transaction, assigned by IEX Options to both Execution reports representing the two sides of a single trade. Published externally to market data feeds.
LastPx	Price8	69	8	Price of current partial or full fill 0.01 - 9,999.99
OpenClose	int8	77	1	Will match original order.
Side	int8	78	1	Will match original order.
TargetPartyID	STRING(4)	79	4	Will match original order.
AuctionID	uint32	83	4	Will match original order.
ClearingFirm	uint32	87	4	Will match original order.
OptionalData*	STRING(16)	91	16	Will match original order.
RoutingFirmID	STRING(4)	107	4	Will match original order.
AIQ*	STRING(3)	111	3	Will match original order.
LeavesQty	uint32	114	4	0 - 999,999
CumQty	uint32	118	4	1 - 999,999
LastQty	uint32	122	4	Quantity of current partial or full fill 0 - 999,999
TradeLiquidityIndicator	int8	126	1	<p>1 = Added Liquidity</p> <p>2 = Removed Liquidity</p> <p>3 = Routed</p> <p>4 = Opening Process</p> <p>5 = Re-Opening Process</p> <p>6 = SUM - Initiating</p> <p>7 = SUM -Response</p> <p>8 = SUM - Unrelated</p>
FeeCode	STRING(2)	127	2	<p>Specific fee code associated with execution.</p> <p>See Appendix for Options.</p>
ReasonCode	uint8	129	1	See appendix for values
OCCID	STRING(5)	130	5	OCC clearing number on the execution.
ContraClearingAccount	STRING(16)	135	4	Contra party OCC sub-account number / MMID



ContraClearingFirm	uint32	139	4	Equivalent of ContraBroker (375) in FIX. For local trades, contra party clearing number of CMTA, if any - 5 digits.
ContraMPID	STRING(4)	143	4	Equivalent of ContraTrader (337) in FIX. For local trades, contra party Firm Identifier - MPID. For routed fills, identifies the away exchange for the execution: A = Routed to NYSE American B = Routed to BOX C = Routed to Cboe Options D = Routed to MIAX Emerald E = Routed to Cboe EDGX Options H = Routed to Nasdaq GEMX I = Routed to Nasdaq ISE J = Routed to Nasdaq MRX M = Routed to MIAX Options Exchange N = Routed to NYSE Arca P = Routed to MIAX PEARL Q = Routed to Nasdaq S = Routed to MIAX Sapphire T = Routed to Nasdaq BX U = Routed to MEMX W = Routed to C2 Options X = Routed to Nasdaq PHLX Z = Routed to Cboe BZX Options
ContraOpenClose	int8	147	1	Indicates sender's position. 0 = Open 1 = Close 2 = Not Applicable
ContraCustomerOrFirm	int8	148	1	Contra party capacity of the order 0 = Customer 1 = Firm 2 = Broker/Dealer 3 = Market Maker 4 = Away Market Maker 5 = Prof customer
ContraOCCID	STRING(5)	149	5	OCC clearing number of the contra on the execution. Present on local trades only.

Trade Bust/Correct

Available On:

- Order Entry Sessions
- Market Maker Quoting Sessions

Sub-session Type: Gateway-to-User

This message is sent to notify Firms of a busted or corrected trade. The ExecID identifies the previously reported transaction being referenced. The OrderID identifies the order associated with the transaction being busted/corrected.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, Templated: 111, BlockLength: 84, Version: 0



TransactTime	uint64	0	8	IEX Options application time.
InstrumentID	uint32	8	4	Identification number assigned to the security.
marketParticipantId (MPID)	STRING(4)	12	4	Will match original order.
CIOrdID	uint64	16	8	Will match original order.
OrderID	uint64	24	8	Unique identifier of order as assigned by IEX Options. Matches the OrderID published on DEEP.
ExecID	uint64	32	8	Unique identifier of execution message.
TradeID	uint64	40	8	Unique identifier of the newly defined trade resulting from the adjustment of a previous trade. Only populated if BustOrCorrection = 2.
TradeRefID	uint64	48	8	Unique identifier of the transaction being busted or adjusted, assigned by IEX Options to both Execution reports representing the two sides of a single trade. Published externally to market data feeds.
LastPx	price8	56	8	0.01- 9,999.99 If Bust: Execution price of busted trade If Correction: Corrected Price
Account	STRING(16)	62	16	Will match original order if provided.
LastQty	uint32	78	4	If Bust: Execution quantity of busted trade If Correction: Corrected Execution Quantity 1 - 999,9999
ReasonCode	uint8	82	1	See appendix for values
BustOrCorrection	int8	83	1	1 = Trade Bust 2 = Trade Correction

Application Layer Reject

Available On:

- Order Entry Sessions
- Market Maker Quoting Sessions
- Purge Sessions

Sub-session Type: Gateway-to-User

This message is sent when a New Order Single, Cancel/Replace Request, Cancel Request, Mass Cancel Request, New Bulk Quote, Risk Limit Update Request, or Risk Action Request has been rejected.

When used to reject an entire New Bulk Quote, the "UnderlyingID" field will be populated with the identifier for the underlying symbol and the "InstrumentID" field will be NULL_VALUE. Note that standing Market Maker quotes will not be canceled due to an Application Layer Reject.

Field	Type	Offset	Len	Values
SBEHeader				Schemald: 20001, TemplateId: 112, BlockLength: 55, Version: 0
SequenceTime	uint64	0	8	IEX Options Application Time of Triggering Event
TransactTime	uint64	8	8	IEX Options Application Time of Event Processing Outcome
UnderlyingID	uint32	16	4	Underlying symbol. Only populated on rejects Purge Request, Risk Limit Update Request,



				Mass Cancel Request, or Risk Action Request, otherwise NULL_VALUE.
InstrumentID	uint32	20	4	Identification number assigned to the security. Only populated on rejects for New Order Single, Order Cancel/Replace Request, and Order Cancel Request, otherwise NULL_VALUE.
marketParticipantId (MPID)	STRING(4)	24	4	Will match value provided on the message that is rejected (incoming message).
ClOrdID	uint64	28	8	Will match value provided on the message that is rejected (incoming message).
Account	STRING(16)	36	16	Will match original order if provided.
ReasonCode	uint8	52	1	See appendix for values
RejectType	int8	53	1	0 = New Order Reject 1 = Cancel/Replace Request Reject 2 = Cancel Request Reject 3 = Mass Cancel Request Reject 4 = New Bulk Quote Reject (Day) 5 = Risk Limit Update Request Reject 6 = Risk Action Request Reject 7 = Purge Request Reject 8 = New IOC Quote Reject
ThrottleIndicator	int8	54	1	0 = Not Throttled 1 = Throttled



USER TO IEX OPTIONS - CONFIGURATION & RISK MESSAGES

Risk Limit Update Request

Available On:

- Order Entry Session
- Market Maker Quoting Session

Sub-session Type: User-to-Gateway

The Risk Limit Update Request can be used to set, update, and disable activity-based risk controls and GRMP settings for a given MPID (or MPID Group, if GRMP) intraday. If a request is accepted, the change will apply upon processing and will be persisted into subsequent trading days. Note that only a single Activity-Based Risk Control configuration (1 election of Volume/Transaction/Percent-based, 1 CountLimit / PercentLimit, and 1 TimeLimit) is supported per combination of MPID + UnderlyingID. Any accepted update to the Activity-Based Risk Control configuration of a given MPID + UnderlyingID will replace any preexisting configuration.

When updating activity-based risk controls, UnderlyingID may be optionally specified.

Behavior of updates to activity-based risk controls depending on whether UnderlyingID is specified:

- If UnderlyingID is not specified, the update will be bulk applied across ALL UnderlyingIDs for the MPID specified. Note that this will overwrite any existing activity-based risk control.
- If UnderlyingID is specified, updates the activity-based risk control associated with this individual UnderlyingID for this MPID. Note that this will overwrite any existing activity-based risk control.

When updating GRMP, an update from any MPID belonging to an MPID Group will update the shared GRMP setting on behalf of the entire group.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, TemplateId: 51, BlockLength: 36, Version: 0
UnderlyingID	uint32	0	4	Individual Underlying Symbol Can be populated for: <ul style="list-style-type: none"> - Activity-based -Transaction - Activity-based -Volume - Activity-based -Percentage If populated, applies to underlying specified. If NULL_VALUE, applied to ALL underlying symbols for the given MPID.
marketParticipantId (MPID)*	STRING(4)	4	4	Market Participant Identifier – MPID. Note that if the MPID specified belongs to an MPID Group for a configured GRMP setting, this message will impact the GRMP setting configured for the entire MPID Group.
ClOrdID	uint64	8	8	Day-unique identifier of message as assigned by the User. Note that IEX



				Options only enforces uniqueness against open orders.
RiskControl	int8	16	1	1 = Activity-based -Transaction 2 = Activity-based -Volume 3 = Activity-based -Percentage 4 = GRMP
RiskControlStatus	int8	17	1	0 = Turn Risk Control Off 1 = Turn Risk Control On If updating a currently enabled risk setting to a new value or adding a new configuration, populate with 1. Must always be "1" for Market Maker MPIDs when updating symbols in which the Market Maker MPID is appointed.
TimeLimit	uint64	18	8	Microsecond Time Period. Must be specified if RiskControlStatus = 1.
PercentageLimit	uint32	26	4	Percentage (%). Must be specified for Activity-based -Percentage. For all other Risk Control Types, populate with NULL_VALUE.
CountLimit	uint32	30	4	Integer count. Must be specified for: - Activity-based -Transaction. Specifies max # transactions over rolling period. - Activity-based -Volume. Specifies max # contracts over rolling period. - GRMP For Activity-based -Percentage, populate with NULL_VALUE.
IOCAtribution	int8	34	1	1 = Include IOC orders/quotes in Activity-based calculations and cancelations 2 = Exclude IOC orders/quotes in Activity-based calculations and cancelations If RiskControl = 4 (GRMP), populate with NULL_VALUE.
CustCapacityWeight	int8	35	1	Percentage (%) representing a multiplier applied to executions against Priority Customer interest for purposes of incrementing risk controls. Must be a whole percentage value between 0 and 100. "0" represents executions against Priority Customer interest will not increment Activity-Based Risk Controls. "100" represents executions against Priority Customer interest will increment Activity-Based Risk Controls in the same manner as executions against non-Priority Customer Capacity interest.



				If RiskControl = 4 (GRMP), populate with NULL_VALUE.
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Risk Action Request

Available On:

- Order Entry Sessions (except if RiskControl = 5)
- Market Maker Quoting Sessions

Sub-session Type: User-to-Gateway

The Risk Action Request can be used to query current risk configurations / statuses, to reenable order/quote entry following a breach with a “Block” instruction, or to reenable quote entry following a Purge. A Risk Control Acknowledgment will be sent in response.

If RiskControl = 1, 2, or 3 (Activity-Based Risk Controls):

- If RiskAction = 0 (Query Risk Control): Will result in sending of a Risk Control Acknowledgement that reflects the current configuration for the combination of individual underlying UnderlyingID + MPID specified.
- If RiskAction = 1 (Unblock):
 - o If an Activity-Based Risk Control has been breached, will result in a reset of this Activity-Based Threshold and re-enablement of order/quote entry for the MPID specified on the message in UnderlyingID on the message.
 - o A Risk Control Alert will be sent as confirmation of the action.

If RiskControl = 4 (GRMP)

- If RiskAction = 0 (Query Risk Control): Will result in sending of a Risk Control Acknowledgement that reflects the current configuration for this GRMP setting.
- If RiskAction = 1 (Unblock):
 - o Will result in a reset of this GRMP threshold and re-enablement of orders / quotes for MPIDs impacted by this GRMP configuration in all UnderlyingIDs *except* the MPID + UnderlyingID combinations that were already exceeded at the time that GRMP was breached. Separate Risk Action Requests should be sent individually for these MPID + UnderlyingID combinations to unblock. If these per-(MPID + UnderlyingID) Unblock requests are sent prior to an unblock for GRMP being processed, they will be accepted and applied, but order/quote entry for the individual UnderlyingID will remain in effect until GRMP is unblocked.
 - o A Risk Control Alert will be sent as confirmation of the action.

If RiskControl = 5 (Purge Lockout Reset):

- If RiskAction = 1 (Unblock):
 - o This message can be used to unblock a previously imposed “Cancel and Block” instruction resulting from an honored Purge Request.
 - o The previously imposed block can be referenced through populating an UnderlyingID, a CustomGroupID, or neither (see “Purge Request” message for further details).
 - o If a Market Maker has blocked quote entry by MPID on a subset of UnderlyingID through a Purge Request, a separate Unblock message can be sent for each UnderlyingIDs to reenable quote entry for each UnderlyingID, or a single Unblock message not specifying UnderlyingID can be sent to unblock all UnderlyingIDs accessible on the Market Maker Quoting Session.
 - o If both CustomGroupID and UnderlyingID are populated, the request will be rejected.
- If RiskAction = 0 (Query Risk Control), this message will be rejected.



- Note that Purge Lockouts can only be reset via any MMQ Sessions if the same MPID that submitted the Purge Request is sending the Risk Action Request on that session. Only Purge Lockouts imposed on the same Trading Ring as the MMQ Session can be reset via that session.

If RiskControl = 6 (Intrinsic Value & Arbitrage Breach):

- If RiskAction = 1 (Unblock):
 - o This message can be used to unblock a previously imposed “Cancel and Block” resulting from a Market Maker Intrinsic Value or Arbitrage Breach.
 - o The previously imposed block must be referenced through populating an UnderlyingID.
- If RiskAction = 0 (Query Risk Control), this message will be rejected.

The resultant behavior from populating various fields is summarized in the table below:

RiskControl	RiskAction	UnderlyingID	CustomGroupID	Result
1-3 (Activity-Based Risk Controls)	0 (Query Risk Control)	Specified	Specified	Rejected
		Not Specified	Specified	Risk Control Acknowledgment detailing risk configuration for UnderlyingID specified
		Not Specified	Rejected	
	1 (Unblock)	Specified	Specified	Rejected
		Not Specified	Not Specified	Risk Control Acknowledgment confirming unblock for UnderlyingID specified.
		Not Specified	Rejected	
4 (GRMP)	0 (Query Risk Control)	Specified	Rejected	
		Not Specified	Specified	Rejected
		Not Specified	Not Specified	Risk Control Acknowledgment detailing GRMP risk configuration for MPID
	1 (Unblock)	Specified	Rejected	
		Not Specified	Specified	Rejected
		Not Specified	Not Specified	Risk Control Acknowledgment confirming unblock of GRMP breach for MPID
5 (Purge Lockout Reset)	0 (Query Risk Control)	Rejected		
	1 (Unblock)	Specified	Specified	Rejected
		Not Specified	Not Specified	UnderlyingID-level unblock (if sent via MMQ Session, can only target an UnderlyingID accessible from that session)
		Not Specified	Specified	CustomGroupID-level unblock on all UnderlyingIDs (if sent via MMQ Session, will only unblock UnderlyingIDs accessible from that session)
	Not Specified	Not Specified	Unblock on all UnderlyingIDs (if sent via MMQ Session, will only unblock UnderlyingIDs accessible from that session)	
	6 (Intrinsic Value & Arbitrage Breach)	0 (Query Risk Control)	Rejected	
1 (Unblock)		Not Specified	Rejected	
		Specified	Specified	Rejected
		Specified	Not Specified	Unblock on the UnderlyingID specified following an automated Cancel & Block due to failing an Intrinsic Value or Arbitrage Check on a Market Maker order or quote.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, TemplateId: 52, BlockLength: 20, Version: 0
UnderlyingID	uint32	0	4	Individual Underlying Symbol Must be populated for RiskControl: <ul style="list-style-type: none"> - 1 = Activity-based -Transaction - 2 = Activity-based -Volume - 3 = Activity-based -Percentage



				Applies to underlying specified. If RiskControl = "4" (GRMP) or "5" (Purge Lockout Reset), populate with NULL_VALUE.
marketParticipantId (MPID)*	STRING(4)	4	4	Market Participant Identifier - MPID. Note that if the MPID specified belongs to an MPID Group for a configured GRMP setting, this message will impact the GRMP setting configured for the entire MPID Group.
ClOrdID	uint64	8	8	Day-unique identifier of message as assigned by the User. Note that IEX Options only enforces uniqueness against open orders.
RiskControl	int8	16	1	1 = Activity-based -Transaction 2 = Activity-based -Volume 3 = Activity-based -Percentage 4 = GRMP (across all UnderlyingIDs) 5 = Purge Lockout Reset 6 = Intrinsic Value & Arbitrage Breach (for MMs only)
RiskAction	int8	17	1	1 = Query Risk Control 2 = Unblock
CustomGroupID	uint16	18	2	May be populated with an optional User-specified ID to unblock a Purge-imposed lockout. Should only be populated on MM Quoting Sessions when RiskControl= 5 and RiskAction = 2. Should otherwise be populated with NULL_VALUE.

IEX OPTIONS TO USER - CONFIGURATION & RISK MESSAGES

Underlying Ref Data

Available On:

- Order Entry Session
- Market Maker Quoting Session
- Purge Session

Sub-session Type: Reference-Data

This message is sent, unsolicited, at start of day for each UnderlyingSymbol on which options are being traded. Note that on Market Maker Quoting and Purge Sessions, this message is only sent for the UnderlyingSymbols that are accessible via that session.

This message may be resent unsolicited intraday in the event of a change to the fields listed.



Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, TemplateId: 151, BlockLength: 25, Version: 0
TransactTime	uint64	0	8	IEX Options application time.
UnderlyingID	uint32	8	4	Individual underlying symbol
UnderlyingSymbol	STRING(8)	12	8	ASCII Symbol representing the Underlying
MIC	STRING(4)	20	4	Market Identifier Code (MIC) of Primary Market.
MinimumPriceVariation	int8	24	1	0 = All Penny 1 = Penny/Nickel 2 = Nickel/Dime

Instrument Ref Data

Available On:

- Order Entry Session
- Market Maker Quoting Session
- Purge Session

Sub-session Type: Reference-Data

This message is sent, unsolicited, at start of day for each Instrument being traded. Note that on Market Maker Quoting and Purge Sessions, this message is only sent for the Instruments that are accessible via that session.

This message may be resent unsolicited intraday in the event of a change to the fields listed.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, TemplateId: 152, BlockLength: 59, Version: 0
TransactTime	uint64	0	8	IEX Options application time.
InstrumentID	uint32	8	4	Unique IEX Options-defined identifier for this individual instrument
UnderlyingID	uint32	12	4	Individual underlying symbol
OSISymbol	STRING(21)	16	21	OSI Symbol
MaturityDate	STRING(8)	37	8	Option Maturity Date - YYYYMMDD
OptionType	int8	45	1	0 = Put 1 = Call
StrikePrice	Price8	46	8	0.01 - 9,999.99
ClosingOnly	int8	54	1	0 = Normal 1 = Closing Only
ORPEnabled	int8	55	1	0 = ORP Protection Disabled 1 = ORP Protection Enabled
TradingRing	int8	56	1	Trading Ring in which this instrument is accessible.
MatchingUnit	int16	57	2	Matching Unit in which this instrument is accessible.

MPID Configuration Acknowledgement

Available On:

- Order Entry Session



- Market Maker Quoting Session
- Purge Session

Sub-session Type: Reference-Data

This message is sent, unsolicited, at start of day for each MPID configured on a session. It indicates the current status of the MPID. This message is only sent for MPIDs that have been configured to send orders along the session on which the message is being sent. Only MPIDs configured to send orders along this session and that have MPIDStatus = 1 (Active) will be able to submit messages.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, Templated: 153, BlockLength: 76, Version: 0
TransactTime	uint64	0	8	IEX Options application time.
marketParticipantId (MPID)	STRING(4)	8	4	Market Participant Identifier – MPID.
MPIDStatus	int8	14	1	Indicates the status of the MPID. 1 = Active 2 = Inactive
Member	STRING(8)	13	8	Unique identifier of the gateway session – SenderCompID.
MaxQty	uint32	21	4	The maximum OrderQty allowed on an individual New Order Single or Order Cancel Replace Request, in contracts, for this MPID. NULL_VALUE on Purge sessions.
MaxNotional	Price8	25	8	The maximum (OrderQty * Price) allowed on an individual New Order Single or Order Cancel Replace Request, in contracts, for this MPID. Note that for Market Orders, a reference price will be used. NULL_VALUE on Purge sessions.
DefaultAccount	STRING(16)	33	16	Default value populated on Account if not specified on an individual message. NULL_VALUE on Purge sessions.
DefaultOptionalData	STRING(16)	49	16	Default value populated on OptionalData if not specified on an individual message. NULL_VALUE on Purge sessions.
DefaultClearingAccount	STRING(4)	65	4	Default value populated on ClearingAccount if not specified on an individual message. NULL_VALUE on Purge sessions.
AllowMarketOrders	uint8	69	1	0 = Allow Market Orders 1 = Do Not Allow Market Orders NULL_VALUE on Purge sessions.
AllowISOIOC	uint8	70	1	0 = Allow ISO IOC Limit Orders 1 = Do Not Allow ISO IOC Limit Orders NULL_VALUE on Purge sessions.
AllowISODay	uint8	71	1	0 = Allow ISO Day Limit Orders 1 = Do Not Allow ISO Day Limit Orders NULL_VALUE on Purge sessions.
MaxDuplicative	uint32	72	4	The maximum number of consecutive duplicative orders allowed before rejecting. Will be tracked separately for each individual combination of InstrumentID + MPID + Session + Side. NULL_VALUE on Purge sessions.

Market Maker Symbol Appointment

Available On:



- Market Maker Quoting Session

Sub-session Type: Reference-Data

This message is sent, unsolicited, at start of day for each (MPID + UnderlyingID) combination representing a Market Maker appointment in that underlying. This message will be sent on all Market Maker Sessions in which that MPID is configured.

This message will indicate the type of appointment, the Maximum Allowable Width for Market Maker Quotes in InstrumentIDs on the underlying specified, and any Quote Relief Multiplier in effect for that underlying on that day. Note that this message will only be sent for UnderlyingIDs in which the Market Maker has an appointment. If quote relief is offered after initial system startup, this message will be republished with the updated QuoteReliefMult value intraday.

If appointment status changes intraday for any reason, this message will be republished with the updated AppointmentStatus.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, Templated: 154, BlockLength: 26, Version: 0
TransactTime	uint64	0	8	IEX Options application time.
UnderlyingID	uint32	8	4	Individual underlying symbol
marketParticipantId (MPID)	STRING(4)	12	4	IEX Options-assigned numerical identifier representing MPID.
AppointmentType	int8	16	1	1 = IEX Options Registered Market Maker 2 = IEX Options Directed Market Maker 3 = IEX Options Specialist
AppointmentStatus	int8	17	1	0 = Not appointed for underlying symbol 1 = Appointed for underlying symbol
MaxAllowableWidth	uint32	18	4	Maximum allowable bid-ask differential for Market Maker quotes to count toward quoting obligations following the Opening Process.
QuoteReliefMult	uint32	22	4	Integer multiplier. If populated, the product of MaxAllowableWidth and this field reflects the maximum allowable bid-ask differential for Market Maker quotes in this class of Options for this trading day.

Session Configuration Acknowledgement

Available On:

- Order Entry Session
- Market Maker Quoting Session
- Purge Session

Sub-session Type: Reference-Data

This message is sent once, unsolicited, at start of day along each session to indicate the current configuration settings for that session.

This message may be resent unsolicited intraday in the event of a change to the fields listed.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, Templated: 155, BlockLength: 35, Version: 0
TransactTime	uint64	0	8	IEX Options application time.



UserSessionType	int8	8	1	Defines the permission type assigned to the gateway session. UserSessionType controls the message types and values available to the session. 1 = Order Entry 2 = Market Maker Quoting 3 = Purge
UserSessionStatus	int8	9	1	Indicates the status of the gateway session. 1 = Active (can open read and write streams) 2 = Inactive (can open read-only streams)
Member	STRING(8)	10	8	Unique identifier of the gateway session – SenderCompID.
DefaultMPID	STRING(4)	18	4	Default sending MPID applied if not specified on a message.
MIC	STRING(4)	22	4	MIC of the connected market IEXO = IEX Options
CancelOnDisconnect	int8	26	1	0 = Off (Cancel on Disconnect Disabled) 1 = On (Cancel on Disconnect Enabled) NULL_VALUE on Purge Sessions.
AIQDefault	STRING(3)	27	3	Session level default for the AIQ value on all Order and Cancel/Replace requests entered on the session. NULL_VALUE on Purge Sessions.
OrderUnsolicitedAckSubscription	uint8	30	1	1 = Not subscribed to receive the “Unsolicited Modify Acknowledgement” message on the Session 2 = Receive “Unsolicited Modify Acknowledgement” message on the Session. Will be NULL_VALUE for Market Maker Quoting Sessions and Purge Sessions.
QuoteUnsolicitedAckSubscription	uint8	31	1	1 = Not subscribed to receive the unsolicited “Quote Restated” messages on the Session 2 = Receive unsolicited “Quote Restated” messages on the Session Will be NULL_VALUE for Order Entry Sessions and Purge Sessions
DefaultAttributedQuote	int8	32	1	Session level default for the SUM setting on all Order and Cancel / Replace requests entered on the session. 1 = SUM - Expose order info only 2 = SUM - Expose order info and Capacity only 3 = SUM - Expose order info and MPID only



				4 = SUM - Expose order info, Capacity and MPID 5 = Do not SUM NULL_VALUE indicates no default. This is the only supported value on Purge sessions.
DefaultCancelInsteadOfSlide	uint8	33	1	0 = Slide 1 = Cancel order instead of slide Will be NULL_VALUE on Purge sessions.
TradingRing	uint8	34	1	Trading Ring that can be accessed on this session. Only applicable for MMQ and Purge Sessions, else NULL_VALUE.

Risk Control Acknowledgement

Available On:

- Order Entry Session
- Market Maker Quoting Session

For firms using IEX Risk Controls, this message provides the current configurations and status of a given Risk Control. IEX may send it in the following ways:

- **Solicited (Sub-session Type: Gateway-To-User)**
 - o Ack for Risk Limit Update Request
 - o Ack for Risk Action Request
- **Unsolicited (Sub-session Type: Reference-Data)**
 - o Start of Day - Risk Control configs for the current trading day

For Market Makers using Purge Sessions, this message also provides confirmation of a successful Unblock following a Purge Lockout in response to a Risk Action Request.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, TemplatedId: 156, BlockLength: 58, Version: 0
SequenceTime	uint64	0	8	IEX Options Application Time of Triggering Event
TransactTime	uint64	8	8	IEX Options Application Time of Event Processing Outcome
UnderlyingID	uint32	16	4	When sent solicited, copied from the initial request, if provided. When sent at start of day, will reflect the underlying symbol to which the risk control applies.
marketParticipantId (MPID)	STRING(4)	20	4	Market Participant Identifier - MPID. Will match value provided in the corresponding Risk Limit Update Request or Risk Action Request, if any.
ClOrdID	uint64	24	8	Unique ID of request as assigned by the firm. Solicited Ack - will be populated with the ClOrdID of the corresponding Risk Limit Update Request or Risk Action Request. Unsolicited Ack - will be set as 0.



CustomGroupID	uint16	32	2	If RiskControl = 5 (Purge Lockout Reset) on a Risk Action Request and CustomGroupID was specified, will reflect the CustomGroupID provided on the Risk Action Request. Otherwise NULL_VALUE.
RiskAckType	int8	34	1	0 = Solicited 1 = Unsolicited
RiskControlStatus	int8	35	1	Current enablement status of the Risk Control. 0 = Risk Control Disabled 1 = Risk Control Enabled When sent in response to a Risk Limit Update Request, will reflect value populated in RiskControlStatus. Will be NULL_VALUE for Purge Lockout Reset.
RiskControl	int8	36	1	1 = Activity-based -Transaction 2 = Activity-based -Volume 3 = Activity-based -Percentage 4 = GRMP (across UnderlyingIDs) 5 = Purge Lockout Reset 6 = Intrinsic Value & Arbitrage Breach (for MMs only)
RiskAction	int8	37	1	0 = Query Risk Control 1 = Unblock Always "1" for Purge Lockout Reset. Will be NULL_VALUE when sent unsolicited or in response to a Risk Limit Update Request.
TimeLimit	uint64	38	8	Microsecond Time Period. Specified for: - Activity-based -Transaction - Activity-based -Volume - Activity-based -Percentage - GRMP Will match value provided in the corresponding Risk Limit Update Request or Risk Action Request, if any. Always NULL_VALUE for Purge Lockout Reset.
PercentageLimit	uint32	46	4	Percentage (%). When sent at start of day, will reflect the currently configured value. When sent in response to a Risk Limit Update Request, will echo back the value provided in the initial request, if any. Specified for: - Activity-based -Percentage For all other Risk Control Types, this value will be NULL_VALUE.
CountLimit	uint32	50	4	When sent at start of day, will reflect the currently configured value. When sent in response to a Risk Limit Update Request, will echo back the value provided in the initial request, if any.
IOCAtribution	int8	54	1	When sent at start of day, will reflect the currently configured value.



				When sent in response to a Risk Limit Update Request, will echo back the value provided in the initial request, if any.
BlockedByBreachIndicator	int8	55	1	0 = Not Blocked by Breach 1 = Blocked by Breach For Purge Lockout Reset or if UnderlyingID is NULL_VALUE, will be NULL_VALUE.
CustCapacityWeight	Int8	56	1	Percentage (%) representing a multiplier applied to executions against Priority Customer interest for purposes of incrementing risk controls. Must be a whole percentage value between 0 and 100. "0" represents executions against Priority Customer interest will not increment Activity-Based Risk Controls. "100" represents executions against Priority Customer interest will increment Activity-Based Risk Controls in the same manner as executions against non-Priority Customer Capacity interest.
ThrottleIndicator	int8	57	1	0 = Not Throttled 1 = Throttled

Risk Control Alert

Available On:

- Order Entry Session
- Market Maker Quoting Session

Sub-session Type: Gateway-To-User

For firms using IEX Risk Controls, this message provides unsolicited notification of breach events and is used as acknowledgement of a successful unblock following a risk breach. Sent due to:

- o Notification of Activity-based Risk Control Breach - upon breach of an Activity-based or GRMP limit, the System will send an unsolicited Risk Control Alert down each Order Entry or Market Maker Quoting Session for which an impacted MPID is configured on that session. In response to a breach, the system will cancel all resting orders / quotes and block subsequent order / quote entry until unblocked.
- o Notification of Options Market Maker Arbitrage or Intrinsic Value Check Fail - a Market Maker Quote or Market Maker order rejected as result of the Arbitrage or Intrinsic Value price checks will result in the automatic cancelation of resting orders / quotes and blocking of subsequent orders /quotes for the UnderlyingID + MPID. Arbitrage and Intrinsic Value rejects on non-MM orders do not trigger a breach. For purposes of unblocking following such a breach, Users should submit an unblock request for the activity-based risk control defined for the UnderlyingID subject to the breach as though the activity-based risk control threshold were exceeded.

Field	Type	Offset	Len	Values
SBE Header				Schemald: 20001, TemplateId: 157, BlockLength: 34, Version: 0
TransactTime	uint64	0	8	IEX Options Application Time
UnderlyingID	uint32	8	4	Underlying Symbol Will be populated for:



				<ul style="list-style-type: none"> - Activity-based - Rolling Transaction - Activity-based - Rolling Volume - Activity-based - Rolling Percentage
marketParticipantId (MPID)	STRING(4)	12	4	Market Participant Identifier - MPID.
RiskControl	uint8	16	1	<p>Specifies the type of risk control being breached.</p> <ul style="list-style-type: none"> 1 = Activity-based -Transaction 2 = Activity-based -Volume 3 = Activity-based -Percentage 4 = GRMP 6 = Intrinsic Value & Arbitrage Breach (for MMs only)
TimeLimit	uint64	17	8	<p>Microsecond Time Period.</p> <p>Will be populated for:</p> <ul style="list-style-type: none"> - Activity-based -Transaction - Activity-based -Volume - Activity-based -Percentage - GRMP <p>Reflects the value defined for the risk control being breached.</p> <p>For all other Risk Control Types, will be NULL_VALUE.</p>
PercentageLimit	uint32	25	4	<p>Percentage (%), reflects the value defined for the risk control being breached.</p> <p>Specified for:</p> <ul style="list-style-type: none"> - Activity-based -Percentage <p>For all other Risk Control Types, will be NULL_VALUE.</p>
CountLimit	uint32	29	4	<p>Integer count, reflects the value defined for the risk control being breached.</p> <p>Specified for:</p> <ul style="list-style-type: none"> - Activity-based -Transaction. Specifies max # transactions over rolling period. - Activity-based -Volume. Specifies max # contracts over rolling period. - GRMP. Specifies max # Activity-based breaches. <p>For all other Risk Control Types, will be NULL_VALUE.</p>
NotificationReason	uint8	33	1	<p>0 = Threshold Exceeded</p> <p>1 = Market Maker Arbitrage or Intrinsic Value Check Failure</p>



APPENDIXES

Appendix A – Order Types

		Market Order		Limit Order		MM Bulk Quote	
		IOC	Day	IOC	Day	Day	IOC
Pre-Open	ISO	Reject	Reject	Reject	Converted to non-ISO, Queued until Open	Not an option on MM Bulk Quotes	Rejected during Pre-Open
	Post Only	Reject	Reject	Reject	Treated as non-Post Only in Opening / Re-Opening Process, Queued until Open	Treated as non-Post Only in Opening / Re-Opening Process, Queued until Open	
	ISO + Post Only	Reject	Reject	Reject	Converted to non-ISO, treated as non-Post Only in Opening / Re-Opening Process, Queued until Open	Not an option on MM Bulk Quotes	
	Routable	Queue until Open	Reject	Reject	Queue until Open	Not an option on MM Bulk Quotes	
	Book Only	Queue until Open	Reject	Reject	Queue until Open	Not an option on MM Bulk Quotes	
	ORP (MM Bulk Quotes)	Not an option on orders	Treated as non-ORP until Opening / Re-Opening Process, Queued until Open				

Continuous Trading	ISO	Reject	Reject	Accept	Accept	Not supported	Not supported
	Post Only	Reject	Reject	Reject	Accept	(Implied on quotes) Accept	Not supported
	ISO + Post Only	Reject	Reject	Reject	Reject	Not supported	Not supported
	Routable	Accept	Reject	Accept	Accept	Not supported	Not supported
	Book Only	Accept	Reject	Accept	Accept	Not supported	Implicitly Book Only
	ORP (MM Bulk Quotes)	Not an option on orders	Accept	Not supported			



Appendix B – Reason Codes

IEX Options Reason codes can be accessed [here](#).

Appendix C – Fee Codes

IEX Options Fee Codes can be accessed [here](#).

REVISION HISTORY

Version	Date	Change
1.00	February 5, 2026	Initial publication of document.