MEMO for Options - SBE

V1.8

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1 Overview

MEMO SBE Options is a binary protocol used by members to submit orders to the MEMX exchange.

2 Architecture

A MEMO SBE Options session is a sequenced messaging protocol that uses fixed width binary messages.

The MEMO SBE Options wire format uses an SBE-encoded subset of FIX 5.0 SP2 tags and messages.
More information about the FIX protocol and associated tag numbers can be found on the Financial Information Exchange (FIX) Protocol version 5.0 Service Pack 2 page.

MEMO SBE Options messages are transported using the MEMX-TCP protocol to provide reliable ordered transmission of messages between clients and servers. Connected clients should always use the streaming mode of MEMX-TCP.

Making MEMX-TCP requests for message replay will result in the client being disconnected, as per the MEMX-TCP specification. Heartbeat and heartbeat timeout intervals for a MEMO connection may be configured via the MEMO port support request process.

3 Encoding

The MEMO SBE Options protocol uses the FIX Trading Community's Simple Binary Encoding (SBE) to specify message encoding. More information about SBE can be found at the FIX SBE XML Primer.

MEMO SBE Options is always encoded in Big Endian byte order.

In order to support clients with hardware word alignment restrictions, MEMO SBE will allow clients to supply up to 7 extra bytes after the content of the SBE message. These extra bytes should be added in the MEMX-TCP framing protocol's message length prefix, and not in the message's SBE header.

3.1 SBE Data Types

All encoding and decoding for SBE is centered around a set of basic primitive types.

For more information on primitive type encoding, see the SBE specification.

Type	Length (bytes)	Description	Value Range	Null Value	Null Value (Hex)
CHAR	1	ASCII Character	32 to 126 (printable ASCII)	0	0x00
BOOLEAN	1	Boolean value (true or false)	0 to 1 0 = false 1 = true	255	0xFF
INT8	1	Signed Integer	-127 to 127	-128	0x80
INT16	2	Signed Integer	-32767 to 32767	-32768	0x8000
INT32	4	Signed Integer	-2^31 + 1 to 2^31 - 1	-2^31	0x80000000
INT64	8	Signed Integer	-2^63 + 1 to 2^63 - 1	-2^63	0x8000000000000000
UINT8	1	Unsigned Integer	0 to 254	255	0xFF
UINT16	2	Unsigned Integer	0 to 65534	65535	0xFFFF
UINT32	4	Unsigned Integer	0 to 2^32-2	2^32 - 1	0xFFFFFFFF
UINT64	8	Unsigned Integer	0 to 2^63 - 1	2^64 - 1	0xFFFFFFFFFFFFFFFF

The MEMO specification does not use the SBE floating point data types.

3.1.1 PriceType

Some prices are encoded as a fixed-point scaled decimal, consisting of an unsigned long (UINT64) mantissa and a constant exponent of -8.

Type Name	Length	Type	Description
Mantissa	8	UINT64	The fixed-point decimal representation of the price.
Exponent	N/A	INT8	MEMO uses a constant exponent of -8 for all prices.

For example, a mantissa of 123456789 (0x75BCD15) with the constant exponent of -8 represents the decimal number 1.23456789, and would appear encoded on the wire as the hex value `00000000075BCD15`.

3.1.2 ShortPriceType

To conserve bytes on the wire, some prices are encoded as a fixed-point scaled decimal, consisting of an unsigned short (UINT16) mantissa and a constant exponent of -2.

Type Name	Length	Type	Description
Mantissa	2	UINT16	The fixed-point decimal representation of the price.
Exponent	N/A	INT8	MEMO uses a constant exponent of -2 for all short prices.

For example, a mantissa of 12345 with the constant exponent of -2 represents the decimal number 123.45, and would appear encoded on the wire as the hex value `00003039`

3.1.3 ClOrdID

All ClOrdIDs can be up to 20 characters. They can contain only ASCII printable characters.

3.1.4 Symbology

Upon request via a separate channel, the exchange provides a list of instrument directory messages. Each instrument directory message provides these relevant field used to identify a product for order processing:

- OptionsSecurityID, (custom tag 21035) an 8 CHAR field that uniquely identifies an options security on the exchange,

The MEMO for Options SBE protocol uses the OptionsSecurityID (custom tag 21035) in the order related and quote related messages to identify the option security for the message.

3.1.5 UTCTimestampNanos

Fields with the UTCTimestampNanos type represent a timestamp in Coordinated Universal Time (UTC), which began on the UNIX epoch (January 1, 1970 at 00:00:00 UTC). UTCTimestampNanos has the time unit of nanoseconds and is encoded as follows:

Type Name	Length	Type	Description
Time	8	UINT64	UTC timestamp since UNIX epoch with nanosecond precision.
Unit	N/A	UINT8	Unit of time. UTCTimestampNanos are represented in nanoseconds. This field is constant (value=9) and as such will not be transferred on the wire.

3.2 SBE Header

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

The SBE message header contains the fields that allows the decoder to identify what codec should be used for a message.

1. **blockLength**: The length of the message. Note: this does not include the header length.
2. **templateID**: The identifier for the template type of the message that is to follow.

3. **schemaID**: The identifier for the schema the message belongs to.
4. **version**: The version of the schema allowing for extension. MEMX packs two pieces of information into the (UINT16) version field, a major version and a minor update version. So for example a version of 258 = 0x0102 indicates major version 1, minor update 2.
5. **numGroups**: A count of repeating groups at the root level of the message. The count does not include nested repeating groups.

The MEMO SBE header appears on the wire as:

Field	Offset	Length	Type	Description
BlockLength	0	2	UINT16	The number of bytes in the message body (does not include the header bytes). Note that MEMO messages do not use variable-length fields.
TemplateID	2	1	UINT8	Identifier of the message template (ie. the message type)
SchemaID	3	1	UINT8	The identifier of a message schema. SchemaID=9 for MEMO for US Options
Version	4	2	UINT16	The version number of the message schema that was used to encode a message. MEMX packs two pieces of information into the UNIT16 version field, a major version and a minor update version. So for example a version of 258 = 0x0102 indicates major version 1, minor update 2.
NumGroups	6	1	UINT8	A count of repeating groups at the root level of the message. The count does not include nested repeating groups.

3.3 Repeating Groups

3.3.1 RepeatingGroupDimensions Field

Some messages in this specification use repeating groups of fields. A RepeatingGroupDimensions block is inserted prior to each repeating group and contains:

1. The BlockLength representing the total space reserved for a single repeating group entry (not counting any nested repeating groups or variable-length fields). BlockLength only represents message body fields; it does not include the length of the group dimension itself, which is fixed size.
2. A counter representing the number of entries in a repeating group.

Type Name	Length	Type	Description
BlockLength	1	UINT8	The total space reserved for a single repeating group entry.
NumInGroup	1	UINT8	A counter representing the number of entries in a repeating group.

3.3.2 Short Two Sided Quote Group

The Short Two Sided Quote repeating group allows for up to 20 two sided quotes in messages. This group is used within the ShortTwoSidedBulkQuote message. All quotes in a Short Two Sided Quote repeating group must be for the same Underlier. The OptionsSecurityID of the first quote in the repeating group identifies the Underlier that is used to validate all of the following quotes in the repeating group.

This group is always preceded by a RepeatingGroupDimensions field that denotes the length of this group and the number of them expected in the message.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
ListSeqNo	0	1	UINT8	67	Y	Unique identifier for a single Quote within the collection. Note the ListSeqNo must be continuous starting with a value of 1 for the quote group.
OptionsSecurityID	1	8	CHAR	21035	Y	The OptionsSecurityID of the tradable options product for the quote. The Underlier for all quotes in the repeating group must match the Underlier of the first quote in the repeating group.
BidSize	9	2	UINT16	134	Y	Bid side quantity of the quote.
BidPx	11	2	ShortPriceType	132	Y	Bid side price of the quote. Price per unit of quantity.
OfferSize	13	2	UINT16	135	Y	Ask side quantity of the quote.
OfferPx	15	2	ShortPriceType	133	Y	Ask side price of the quote. Price per unit of quantity.

3.3.3 Long Two Sided Quote Group

The Two Sided Quote repeating group allows for up to 20 two sided quotes in messages. This group is used within the LongTwoSidedBulkQuote message. All quotes in a Long Two Sided Quote repeating group must be for the same Underlier. The OptionsSecurityID of the first quote in the repeating group identifies the Underlier that is used to validate all of the following quotes in the repeating group.

This group is always preceded by a RepeatingGroupDimensions field that denotes the length of this group and the number of them expected in the message.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
ListSeqNo	0	1	UINT8	67	Y	Unique identifier for a single Quote within the collection. Note the ListSeqNo must be continuous starting with a value of 1 for the quote group.
OptionsSecurityID	1	8	CHAR	21035	Y	The OptionsSecurityID of the tradable options product for the quote. The Underlier for

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						all quotes in the repeating group must match the Underlier of the first quote in the repeating group.
BidSize	9	4	UINT32	134	Y	Bid side quantity of the quote.
BidPx	13	8	PriceType	132	Y	Bid side price of the quote. Price per unit of quantity.
OfferSize	21	4	UINT32	135	Y	Ask side quantity of the quote.
OfferPx	25	8	PriceType	133	Y	Ask side price of the quote. Price per unit of quantity.

3.3.4 Short One Sided Quote Group

The One Sided Quote repeating group allows for up to 20 one sided quotes in messages. This group is used within the ShortOneSidedBulkQuote message. All quotes in a Short One Sided Quote repeating group must be for the same Underlier. The OptionsSecurityID of the first quote in the repeating group identifies the Underlier that is used to validate all of the following quotes in the repeating group.

This group is always preceded by RepeatingGroupDimensions field that denotes the length of this group and the number of them expected in the message.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
ListSeqNo	0	1	UINT8	67	Y	Unique identifier for a single Quote within the collection. Note the ListSeqNo must be continuous starting with a value of 1 for the quote group.
OptionsSecurityID	1	8	CHAR	21035	Y	The OptionsSecurityID of the tradable options product for the quote. The Underlier for all quotes in the repeating group must match the Underlier of the first quote in the repeating group.
Side	9	1	SideType	54	Y	Side of the quote.
Quantity	10	2	UINT16	53	Y	Contracts in the quote.
Price	12	2	ShortPriceType	44	Y	Price of the quote. Price per unit of quantity.

3.3.5 Long One Sided Quote Group

The One Sided Quote repeating group allows for up to 20 one sided quotes in messages. This group is used within the LongOneSidedBulkQuote message. All quotes in a Long One Sided Quote repeating group must be for the same Underlier. The OptionsSecurityID of the first quote in the repeating group identifies the Underlier that is used to validate all of the following quotes in the repeating group.

This group is always preceded by RepeatingGroupDimensions field that denotes the length of this group and the number of them expected in the message.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
ListSeqNo	0	1	UINT8	67	Y	Unique identifier for a single Quote within the collection. Note the ListSeqNo must be continuous starting with a value of 1 for the quote group.
OptionsSecurityID	1	8	CHAR	21035	Y	The OptionsSecurityID of the tradable options product for the quote. The Underlier for all quotes in the repeating group must match the Underlier of the first quote in the repeating group.
Side	9	1	SideType	54	Y	Side of the quote.
Quantity	10	4	UINT32	53	Y	Contracts in the quote.
Price	14	8	PriceType	44	Y	Price of the quote. Price per unit of quantity.

3.3.6 Parties Group (Repeating Group 453)

The Parties Group repeating group allows for multiple party identifiers to be supplied in a message.

This group is always preceded by RepeatingGroupDimensions field that denotes the length of this group and the number of the items in the group in the message.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
PartyID	0	16	CHAR	448	Y	Party identifier/code.
PartyIDSource	17	1	CHAR	447	Y	Identifies class or source of the PartyID (448) value. The exchange currently accepts the following values for this field: - 'D' for Proprietary/Custom Code
PartyRole	18	1	PartyRoleType	452	Y	Identifies the type or role of the PartyID (448) specified.

3.3.7 Execution Allocations Group (Repeating Group 124)

The Execution Allocations Group repeating group allows for identification of the original Exchange Trade that post trade allocations are occurring on. Though this is denoted as a repeating group, at the current time, this group will always contain a single entry.

This group is always preceded by RepeatingGroupDimensions field that denotes the length of this group and the number of the items in the group in the message. (Always set to 1)

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
TradeId	0	8	UINT64	1003	Y	TrdMatchID of the original Trade
LastQty	8	4	UINT32	32	Y	Qty of original Trade
LastPx	12	8	PriceType	31	Y	Price of original Trade

3.3.8 Nested Parties Group (Repeating Group 539)

The Nested Parties Group repeating group allows for multiple party identifiers to be supplied inside a Allocation Group entry in post trade allocation messages.

This group is always preceded by RepeatingGroupDimensions field that denotes the length of this group and the number of the items in the group in the message.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
NestedPartyID	0	16	CHAR	524	Y	Party identifier/code.
NestedPartyIDSource	17	1	CHAR	525	Y	Identifies class or source of the NestedPartyID (524) value. The exchange currently accepts the following values for this field: • 'D' for Proprietary/Custom Code
NestedPartyRole	18	1	PartyRoleType	538	Y	Identifies the type or role of the NestedPartyID (524) specified.

3.3.9 Request Allocations Group (Repeating Group 78)

The Request Allocations Group repeating group allows for multiple allocations to be supplied in a post-trade request message.

This group is always preceded by RepeatingGroupDimensions field that denotes the length of this group and the number of the items in the group in the message.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
AllocQty	0	4	UINT32	80	Y	Quantity of allocation

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
AllocPositionEffect	4	1	AllocPositionEffectType	1047	N	Position Effect of allocation
NoNestedPartyIDs	5	2	RepeatingGroupDimensions	539	Y	The dimensions of the Repeating Group.
NestedParties	-	-	Nested Parties Group	N/A	N	The parties associated with the allocation.

3.3.10 Report Allocations Group (Repeating Group 78)

The Report Allocations Group repeating group allows for multiple allocations to be supplied in a post-trade report message - note, each entry will have a unique IndividualAllocId that will be used from that point onward to identify that particular allocation.

This group is always preceded by RepeatingGroupDimensions field that denotes the length of this group and the number of the items in the group in the message.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
AllocQty	0	4	UINT32	80	Y	Quantity of allocation
AllocPositionEffect	4	1	AllocPositionEffectType	1047	N	Position Effect of allocation
IndividualAllocID	5	20	CHAR	467	Y	Individual ID of allocation
NoNestedPartyIDs	25	2	RepeatingGroupDimensions	539	Y	The dimensions of the Repeating Group.
NestedParties	-	-	Nested Parties Group	N/A	N	The parties associated with the allocation.

4 Message Field Types

All messages are composed of fields. Each field has a type. This section defines the non-primitive field types, their underlying type on the wire, acceptable values, and their descriptions.

4.1 AllocTransType (FIX tag 71)

The AllocTransType Identifies an allocation transaction type.

AllocTransType is a 1-byte UINT8 value.

Value	Name	Description
0	New	Replace existing trade with allocation. This is the first allocation on a trade, and does not require a RefAllocID to be supplied. The original trade must be referenced in the Execution Allocations Group.
1	Replace	Replacing existing allocations with new allocations. This is any subsequent allocation and clients should use the RefAllocID field to match a previously reported allocation by specifying its IndividualAllocID value.
2	Cancel	Canceling existing allocations. This is done by the exchange when the original trade is canceled or corrected. Will reference the individual allocation via the RefAllocID field.

4.2 AllocType (FIX tag 626)

The AllocType Identifies an allocation type.

AllocType is a 1-byte UINT8 value.

Value	Name	Description
100	PostTradeEdit	The allocation was a post trade edit. (This is a custom value defined by MEMX)

4.3 AllocStatusType (FIX tag 87)

The AllocStatusType Identifies the status of an allocation.

AllocStatusType is a 1-byte UINT8 value.

Value	Name	Description
0	Accepted	The allocation was accepted (successfully processed)
1	BlockLevelReject	Block level reject.
2	AccountLevelReject	Account level reject.

4.4 AllocRejCode (FIX tag 88)

The AllocRejCode Identifies the reason an allocation instruction was rejected.

AllocRejCode is a 2-byte UINT16 value.

Value	Name	Description
1	IncorrectQuantity	Incorrect or missing block quantity.
8	IncorrectAllocatedQuantity	Incorrect or missing allocated quantity.

Value	Name	Description
10	UnknownOrStaleExecID	Unknown or Stale ExecID(17)
11	MismatchedData	Some data in the new allocation does not match the original trade data.
14	DuplicateOrMissingIndividualAllocID	The AllocID is a duplicate or was missing.
15	TradeNotRecognized	The trade (specified by ExecID or TrdMatchID was unknown.
16	DuplicateTrade	Trade previously allocated.
17	IncorrectOrMissingInstrument	Incorrect or missing instrument.
23	UnknownOrMissingParty	Unknown or missing party.
24	IncorrectOrMissingSide	Incorrect or missing Side
25-28	N/A	
29	MissingPositionEffectType	The PositionEffect field is missing.
30	InvalidPositionEffectType	The PositionEffect field is invalid.
99	Other	The allocation was rejected for some other reason.

4.5 AllocCancReplaceReason (FIX tag 796)

The AllocCancReplaceReason Identifies the reason for cancellation of an allocation when AllocTransType = Cancel.

AllocCancReplaceReason is a 2-byte UINT16 value.

Value	Name	Description
2	ChangeInUnderlyingOrderDetails	The cancellation is due to the underlying Trade/Order being canceled or modified.
99	Other	

4.6 CxlRejReasonCode (FIX tag 102)

Identifies the reason why an order cancellation or replace request was rejected.

Values 0-99 are reserved by the FIX specification. Note that not all of the reserved FIX codes are used.

Values 100-199 are used to denote issues with specific request fields.

Values 200-299 are used to denote issues with the request as a whole.

Values 300-399 are used to denote issues related to risk.

Also note that some codes in this table may not be sent in SBE but are listed here to maintain consistency with the FIX order entry specification, or reserved for future use.

CxlRejReasonCode is a 2-byte UINT16 value.

Value	Name	Description
0	TooLateToCancel	A cancel or replace request was received after the exchange has closed.
1	UnknownOrder	An order with the specified identifer was not found. (OrigClOrdID or OrderID for single orders, or the combination of OrigClOrdID,

Value	Name	Description
		Side, and ListSeqNo for components of Bulk Quote requests).
3	OrderAlreadyPendingCancelOrReplace	There is a pending request on this order.
6	DuplicateClOrdID	The supplied ClOrderID was already used on a previous request.
8	PriceExceedsCurrentPriceBand	The price of the replacement order fell outside execution price collar bands.
18	InvalidPriceIncrement	Request Limit Price increment is invalid.
99	Other	This request was rejected for some other reason not listed.
100	MissingSymbol	The request did not supply a Symbol/OptionsSecurityID.
101	InvalidSymbol	The request supplied an invalid Symbol/OptionsSecurityID.
102	MissingClOrdID	The request did not supply a ClOrdID.
103	InvalidClOrdID	The request supplied an invalid ClOrdID.
104	MissingSide	The request did not supply a side.
105	InvalidSide	The request supplied an invalid side.
106	MissingOrderQty	The request did not supply a quantity.
107	InvalidOrderQty	The request supplied a quantity, but it was set to an invalid value (i.e. 0, larger than exchange max, etc).
108	MissingOrderType	The request did not supply an order type.
109	InvalidOrderType	The request supplied an invalid order type.
110	MissingLimitPrice	The request did not supply a LimitPrice field and was required to due to OrderType requested.
111	InvalidLimitPrice	The request supplied the LimitPrice field but the value was invalid (0, more than the max allowed by the exchange, etc) or not applicable (i.e. the OrderType was set to Market).
112-113	N/A	
114	MissingListSeqNo	The request did not supply the ListSeqNo field.
115	InvalidListSeqNo	The request supplied the ListSeqNo field, but it was set to an invalid value.
116	MissingOrigClOrdID	The request did not supply the OrigClOrdID field.
117	InvalidOrigClOrdID	The request supplied the OrigClOrdID field, but it was too large, contained illegal characters, etc.
118	MissingOrderID	The request did not supply the OrderID field, and was required to (for example, request omitted the OrigClOrdID field and was trying to perform a delegated cancel for an order from another port).
119	InvalidOrderID	The request supplied the OrderID field, but it was too large, contained illegal characters, etc.
120	MissingSendingTime	The request did not supply sendingTime field

Value	Name	Description
121	InvalidSendingTime	The request supplied sendingTime, but it was set to an invalid value.
122-199	N/A	Reserved.
200	Halted	The symbol/OptionsSecurityID supplied in the request is currently halted.
201	FirmDisabled	The request was rejected because the firm sending the order has been disabled.
202	EFIDDisabled	The request was rejected because the EFID used in the order has been disabled.
203	AccountDisabled	The request was rejected because the account sending the order has been disabled.
204	UnsupportedOrdTypeChange	Change of OrdType in replace request not supported.
205	UnsupportedSideChange	Change of side in replace request not supported.
206	SymbolMismatch	Symbol/OptionsSecurityID provided on a replace request does not match the Symbol/OptionsSecurityID on the original order associated with the provided OrigClOrdID or OrderID.
207	OrigOrderIDMismatch	OrigClOrdID and OrderID were both provided, but the provided OrderID does not match the actual OrderID associated with the provided OrigClOrdID (or OrigClOrdID, Side, and ListSeqNo for components of Bulk Quote requests).
208	UnsupportedOrderPropertyChange	Attempting to change an immutable order property.
209-299	N/A	Reserved.
300	NonTestSymbolsBlocked	The replace was for a non-test symbol/OptionsSecurityID and the port is configured in test-only mode (exchange configuration).
301	NotionalValueExceedsThreshold	The notional value of the replace exceeded an exchange configured maximum.
302	MaxNotionalValuePerOrder RiskRuleViolated	The notional value of the replace violated the firm's max notional value per order risk rule.
303	BlockNonTestSymbol RiskRuleViolated	The replace violated the firm's test symbol/OptionsSecurityID trading risk rule.
304	MaxContractsPerOrder RiskRuleViolated	The replace breached the firm's max contracts per order risk rule.
305	NBBOWidthExceedsThreshold	The width of the NBBO is greater than the exchange specified threshold.
306	ExchangePriceValueCollar RiskRuleViolated	A replace Limit Order to buy with a price that is more than an Exchange specified amount above the NBO or an incoming replace Limit Order to sell with a price that is less than an Exchange specified amount below the NBB
307	ExecutionPriceHigherThanStrikePrice	Replace Market Order or the remaining portion of a Market Order to buy a put that

Value	Name	Description
		would execute in whole or in part at a price higher than or equal to the strike price of the option or an incoming Limit Order to buy a put that would execute at a price higher than or equal to the strike price of the option.
308	MarketBuyWhenNBOIsZero	Replace Market Order to buy in an open series when the NBO is zero.
309	MarketSellWhenNBBGreaterThanThreshold	Replace Market Order to sell in an open series when the NBB is greater than $0.50.
310	QuotePriceOutsideExchangeThreshold	Bulk quote replace canceled, bid with a price that is more than an Exchange specified amount above the NBO and cancel an incoming bulk replace offer with a price that is less than an Exchange specified amount below the NBB.
311	N/A	
312	NumContractsExecutedExceedsThreshold	The number of contracts executed exceeds firm specified threshold.
313	NotionalValueOfExecutionsExceedsThreshold	The notional value of contracts executions exceeds firm specified threshold.
314	CountOfExecutionsExceedsThreshold	The count of contracts executed exceeds firm specified threshold.
315	OutstandingPercentageThresholdExceeded	The number of contracts executed as a percentage of the number of contracts outstanding within an Exchange configurable time period or for the trading day has been exceeded.
316	TripsThresholdExceeded	The number of times a firm reaches the limits in: • NumContractsExecutedExceedsThreshold • NotionalValueOfExecutionsExceedsThreshold • CountOfExecutionsExceedsThreshold • OutstandingPercentageThresholdExceeded exceeds a threshold.
317	ISOOrdersNotAllowed	ISO marked orders at disabled.
318	MarketIsCrossed	Order not allowed while market is crossed.
319	ActiveRiskBreach	Order not allowed because of an active breach.
320	ManualRiskBreach	Order not allowed because of a manual breach.
321	GrossNotionalValueExceedsThreshold	Order not allowed because it surpassed the gross notional risk threshold.
322	NetNotionalValueExceedsThreshold	Order not allowed because it surpassed the net notional risk threshold.
323	DuplicateOrderThresholdExceeded	Order not allowed because it surpassed the duplicate order risk threshold.
324	OrderRateThresholdExceeded	Order not allowed because it surpassed the order rate risk threshold.

Value	Name	Description
325	MassCancelLockoutInEffect	Order not allowed because a Mass Cancel Lockout is in effect.
326	MarketOrderGrossNotionalValueExceedsThreshold	Market Order not allowed because it surpassed the market order gross notional risk threshold.
327	MarketOrderNetNotionalValueExceedsThreshold	Market Order not allowed because it surpassed the market order net notional risk threshold.
328	LimitOrderFatFingerCheck	Limit Order not allowed because it failed fat finger check
329	BulkQuoteFatFingerCheck	Bulk Quote not allowed because it failed fat finger check

4.7 CancelReasonCode (MEMX custom FIX tag 21004)

CancelReasonCode represents the reason the order was canceled by the system.

CancelReasonCode is a 1-byte UINT8 value.

Value	Name	Description
0	Other	This order was canceled for some other reason not listed.
1	UserRequestedCancel	The client sent a OrderCancelRequest or OrderMassCancelRequest for this order.
5	ExecutionPriceCollar	The price of the order fell outside execution price collar bands
6	Halted	The market on the order's security was halted.
7	ExchangeSupervisory	Operational or supervisory actions taken by the Exchange resulted in the cancellation of this order.
8	OrderExpired	The order’s supplied expiration time passed.
13	ParticipantDisconnect	The participant directed that their orders should be canceled when the trading system detects a disconnection, and the participant disconnected.
14	OrderNotBookable	Order is not of bookable type (this may include market orders, IOC, etc)
17	FirmDisabled	Order was canceled because the firm was disabled
18	EFIDDisabled	Order was canceled because the EFID was disabled
19	AccountDisabled	Order was canceled because the Account was disabled
20, 21	N/A	Reserved
22	QuoteUpdateRejectedOrigQuoteCanceled	A quote update for an existing quote was rejected, the original quote was canceled.
23	ActiveRiskBreach	Canceled because an active risk rule was breached.
24	ManualRiskBreach	Canceled because of a manual breach.

Value	Name	Description
25	NumContractsExecutedExceedsThreshold	The number of contracts executed exceeds firm specified threshold.
26	NotionalValueOfExecutionsExceedsThreshold	The notional value of the order violated the firm's max notional value per order risk rule.
27	CountOfExecutionsExceedsThreshold	The count of contracts executed exceeds firm specified threshold.
28	OutstandingPercentageThresholdExceeded	The number of contracts executed as a percentage of the number of contracts outstanding within an Exchange configurable time period or for the trading day has been exceeded.
29	TripsThresholdExceeded	The number of times a firm reaches the limits in: • NumContractsExecutedExceedsThreshold • NotionalValueOfExecutionsExceedsThreshold • CountOfExecutionsExceedsThreshold • OutstandingPercentageThresholdExceeded exceeds a threshold.
30	GrossNotionalValueExceedsThreshold	Order not allowed because it surpassed the gross notional risk threshold.
31	NetNotionalValueExceedsThreshold	Order not allowed because it surpassed the net notional risk threshold.
32	DuplicateOrderThresholdExceeded	Order not allowed because it surpassed the duplicate order risk threshold.
33	OrderRateThresholdExceeded	Order not allowed because it surpassed the order rate risk threshold.
34	MarketOrderGrossNotionalValueExceedsThreshold	Market Order not allowed because it surpassed the market order gross notional risk threshold.
35	MarketOrderNetNotionalValueExceedsThreshold	Market Order not allowed because it surpassed the market order net notional risk threshold.
36	MarketOrderNBBOWidthExceeded	Market Order not allowed because it surpassed the market order NBBO width
37	MarketOrderNoNationalBestBid	Market Order not allowed because there was no national best bid
38	MarketOrderNoNationalBestOffer	Market Order not allowed because there was no national best offer
39	DrillThroughPriceExceeded	Order not allowed because it surpassed drill through price
40	OrderWouldLockOrCross	Order not allowed because it would lock or cross
41	MassCancelRequest	Cancel was the result of a mass cancel request
42	LockedOrCrossedMarket	Cancel was due to the order having a RepriceBehavior specified as RepriceLockCancelCross and the Away Market Quotes being crossed

4.8 CxlRejResponseToType (FIX tag 434)

CxlRejResponseToType identifies the request type that a cancel reject was issued for.

CxlRejResponseToType is a 1-byte CHAR value.

Value	Name	Description
'1'	OrderCancelRequest	This response is for a cancel request.
'2'	OrderCancelReplaceRequest	This response is for a replace request.

4.9 ExchangeCode (used in FIX tag 30)

ExchangeCode (MIC code) indicates the market of execution for last fill, or an indication of the market where an order was routed. MIC code are maintained here http://www.iso10383.org/ .

ExchangeCode is a 4-byte CHAR value.

Value	Market Name
AMXO	NYSE AMEX OPTIONS
XBOX	BOX OPTIONS EXCHANGE
XCBO	CBOE GLOBAL MARKETS INC.
EMLD	MIAX EMERALD, LLC
EDGO	CBOE EDGX OPTIONS EXCHANGE
GMNI	ISE GEMINI EXCHANGE
XISX	INTERNATIONAL SECURITIES EXCHANGE, LLC
MCRY	ISE MERCURY, LLC
XMIO	MIAMI INTERNATIONAL SECURITIES EXCHANGE
ARCO	NYSE ARCA OPTIONS
MPRL	MIAX PEARL, LLC
XNDQ	NASDAQ OPTIONS MARKET
XBXO	NASDAQ OMX BX OPTIONS
MXOP	MEMX OPTIONS EXCHANGE
C2OX	CBOE C2 OPTIONS EXCHANGE
XPHO	PHILADELPHIA OPTIONS EXCHANGE
BATO	CBOE BZX OPTIONS EXCHANGE

4.10 ExecInstType Bitset (FIX tag 18)

The ExecInstType provides instructions for order handling on exchange.

ExecInstType is a 2-byte UINT16 value.

Type Name	Length	Type	Values	Description
ExecInstType	2	UINT16	Bit 0 - ParticipateDoNotInitiate (Post only) Bit 1 - IntermarketSweep (ISO) Bit 2 - ExternalRoutingNotAllowed (Book Only)	Enable an execution instruction by setting a bit. Disable an execution instruction by clearing the bit. Bit 0 is the least significant bit.

4.11 ExecRestatementType (FIX tag 378)

Defines the reason for a restatement.

ExecRestatementType is a 1-byte UINT8 value.

Value	Name	Description
3	OrderReprice	The order's booking price was updated.
5	MatchTradePrevention	The order quantity was reduced to prevent a wash trade.
99	Other	More information is supplied in tag 21022 ExtendedExecRestatementReason.

4.12 ExtendedRestatementReasonType (Custom FIX tag 21022)

Defines the extended reason for a restatement.

ExtendedRestatementReasonType is a 1-byte UINT8 value.

Value	Name	Description
0	None	No additional information.
1,2	Reserved	Reserved for future use.
3	MatchTrade-CancelNewest	Restatement due to MatchTradePrevention - CancelNewest
4	MatchTrade-CancelOldest	Restatement due to MatchTradePrevention - CancelOldest
6	MatchTrade-CancelBoth	Restatement due to MatchTradePrevention - CancelBoth

4.13 LastLiquidityIndType (FIX tag 851)

Indicates the liquidity code for this execution.

LastLiquidityIndType is a 1-byte UINT8 value.

Value	Name	Description
1	Added	The order added displayed liquidity to the Exchange book.
2	Removed	The order removed liquidity from the Exchange book.

4.14 OrdStatusType (FIX tag 39)

Indicates the status of an order.

OrdStatusType is a 1-byte CHAR value.

Value	Name
'0'	New
'1'	PartialFilled
'2'	Filled
'4'	Canceled
'6'	PendingCancel
'8'	Rejected
'E'	PendingReplace
'C'	Expired

4.15 MassCxlRejReasonCode (MEMX Custom FIX tag 21028)

Identifies the reason why a mass cancellation request was rejected.

MassCxlRejReasonCode is a 2-byte UINT16 value.

Value	Name	Description
0	Other	This order was rejected for some other reason not listed.
1	DuplicateClOrdID	The ClOrdID is a duplicate and cannot be reused.
2	MissingClOrdID	The request is malformed, it is missing the ClOrdId field.
3	InvalidClOrdID	Request was rejected for invalid CHAR value in ClOrdId field.
4	MissingEFID	The request is malformed, it is missing the EFID field.
5	InvalidEFID	Request was rejected for invalid EFID.
6	MissingUnderlyingOrSeries	The request is malformed, it is missing the UnderlyingOrSeries field.
7	InvalidUnderlyingOrSeries	Request was rejected for invalid UnderlyingOrSeries field.
8	MissingUnderlier	The request is malformed, it is missing the Underlier field.
9	InvalidUnderlier	Request was rejected for invalid Underlier field.
10	MissingOptionsSecurityID	The request is malformed, it is missing the OptionsSecurityID field.
11	InvalidOptionsSecurityID	Request was rejected for invalid OptionsSecurityID field.
12	MissingCancelGroupID	The request is malformed, it is missing the CancelGroupI field.
13	InvalidCancelGroupID	The cancel group id supplied is invalid for the account.
14	MissingMassCancelInst	The request is malformed, it is missing the MassCancelInst field.
15	InvalidMassCancelInst	Request was rejected for an invalid MassCancelInst field.
17	MassCancelInProgress	Request was rejected because a prior Mass Cancel Request with the same semantics is in progress.
18	MissingSendingTime	The request is malformed, it is missing sendingTime field
19	InvalidSendingTime	Request was rejected for invalid sendingTime field
20	InvalidOptionsSecurityIDForUnderlier	Request was rejected for mismatch between Underlier and OptionsSecurityID

4.16 MassCancelInstType Bitset (FIX tag 21031)

The MassCancelInstType provides instructions for mass cancel request handling on the exchange.

MassCancelInstType is a 1-byte UINT8 value.

Type Name	Length	Type	Values	Description
MassCancelInstType	1	UINT8	Bit 0 - Lockout (bit set indicates to lockout future orders that match the mass cancel criteria) Bit 1 - SendCancels (bit set indicates to send Cancel messages for each order/quote canceled) Bit 2 - CancelOrdersFromThisPortOnly (bit set indicates that only orders that originated from the port that receives the MassCancelRequest should be considered for cancelation. If not set all firm orders are considered for cancelation.	Enable a handling instruction by setting a bit. Disable an handling instruction by clearing the bit. Bit 0 is the least significant bit.

4.17 MassCancelClearLockoutRejCode (FIX tag 21037)

The MassCancelClearLockoutRejCode Identifies the reason why a MassCancelClearLockoutRequest was rejected.

MassCancelClearLockoutRejCode is a 2-byte UINT16 value.

Value	Name	Description
0	Other	This order was rejected for some other reason not listed.
1	MissingClOrdID	The request did not supply a ClOrdID.
2	InvalidClOrdID	The request supplied an invalid ClOrdID.
3	MissingLockoutID	The request did not supply a LockoutID.
4	InvalidLockoutID	The request supplied an invalid LockoutID.
5	UnknownLockoutID	The request supplied an unknown LockoutID
6	NoLockoutsActive	There were no active lockouts for the clear all lockouts request
7	MissingEFID	The request did not supply an EFID
8	InvalidEFID	The request supplied an invalid EFID
9	MissingUnderlier	The request did not supply an Underlier
10	InvalidUnderlier	The request supplied an invalid Underlier
11	MissingEFIDOrUnderlier	The request must supply at least EFID or Underlier
12	InvalidUnderlierForLockoutId	Request was rejected for mismatch between Underlier and LockoutId

4.18 UnderlyingOrSeriesType (MEMX Custom FIX tag 21029)

Identifies what category of order/quote to mass cancel.

UnderlyingOrSeriesType is a 1-byte UINT8 value.

Value	Name	Description
0	CancelAllOnUnderlying	Cancel all orders/quotes on the underlying symbol.
1	CancelAllOnSeries	Cancel all orders/quotes on the options series.

4.19 PositionEffectType (FIX tag 77)

Indicates whether the resulting position after a trade should be an opening position or closing position.

PositionEffectType is a CHAR value.

Value	Name
'O'	Open
'C'	Close

4.20 AllocPositionEffectType (FIX tag 1047)

Indicates whether the resulting position for an allocation should be an opening or closing position.

AllocPositionEffectType is a CHAR value.

Value	Name
'O'	Open
'C'	Close

4.21 OrderRejectReasonCode (FIX tag 103)

Identifies the reason why a new order was rejected by the system.

Values 0-99 are reserved by the FIX specification. Note that not all of the reserved FIX codes are used.

Values 100-199 are used to denote issues with specific request fields.

Values 200-299 are used to denote issues with the request as a whole.

Values 300-399 are used to denote issues related to risk.

Also note that some codes in this table may not be sent in SBE but are listed here to maintain consistency with the FIX order entry specification, or reserved for future use.

OrdRejReason is a 2-byte UINT16 value.

Value	Name	Description
1	UnknownSymbol	The order contained a valid symbol/OptionsSecurityID, but the symbol/OptionsSecurityID is not currently traded on this port or exchange.
2	ExchangeClosed	The exchange is closed and not accepting orders at this time.
6	DuplicateOrder	The user entered a duplicate order identifier (ClOrdID for single orders, or the combination of ClOrdID, Side, and ListSeqNo for components of Bulk Quote entry).
16	PriceExceedsCurrentPriceBand	The price of the order fell outside execution price collar bands.
18	InvalidPriceIncrement	The order contained an invalid limit price increment.

Value	Name	Description
27	MaxNotionalValuePerOrderRiskRuleBreach	The order breached the firm's max notional value per order risk rule.
99	Other	This order was rejected for some other reason not listed.
100	MissingSymbol	The order did not supply the Symbol/OptionsSecurityID.
101	InvalidSymbol	The order had an. invalid Symbol/OptionsSecurityID.
102	MissingClOrdID	The order did not supply the ClOrdID.
103	InvalidClOrdID	A ClOrdID was present but contained illegal characters.
104	MissingSide	The order did not supply the side.
105	InvalidSide	The order contained an invalid side.
106	MissingOrderQty	The order did not supply the quantity.
107	InvalidOrderQty	The order contained an invalid order quantity.
108	MissingOrderType	The order did not supply the order type.
109	InvalidOrderType	The order contained an invalid order type.
110	MissingTimeInForce	The order did not supply the time in force.
111	InvalidTimeInForce	The order contained an invalid time in force.
112	MissingTradingCapacity	The order did not supply the trading capacity.
113	InvalidTradingCapacity	The order contained an invalid trading capacity.
114	MissingExecInst	The order did not supply the execution instructions field.
115	InvalidExecInst	The order contained an invalid execution instruction.
116 - 117	N/A	
118	MissingLimitPrice	The order did not supply the limit price.
119	InvalidLimitPrice	The order contained an invalid limit price.
120 - 123	N/A	
124	MissingMatchTradePreventionType	The order supplied the MTPGroupID field but did not supply the MatchTradePreventionType field.
125	InvalidMatchTradePreventionType	The order contained an invalid MatchTradePreventionType.
126	MissingCancelGroupID	The order did not supply the CancelGroupID field (used when a port is configured with a fixed set of allowable CancelGroupIDs).
127	InvalidCancelGroupID	The order contained an invalid CancelGroupID (used when a port is configured with a fixed set of allowable CancelGroupIDs).
128	MissingMTPGroupID	The order did not supply the MTPGroupID field (used when a port is

Value	Name	Description
		configured with a fixed set of allowable MTPGroupIDs).
129	InvalidMTPGroupID	The order contained an invalid MTPGroupID (used when a port is configured with a fixed set of allowable MTPGroupIDs).
130-133	N/A	
134	MissingRiskGroupID	The order did not supply the RiskGroupID field (used when a port is configured with a fixed set of allowable RiskGroupIDs).
135	InvalidRiskGroupID	The order contained an invalid RiskGroupID (used when a port is configured with a fixed set of allowable RiskGroupIDs).
136	MissingEFID	The order did not supply the EFID field.
137	InvalidEFID	The order contained an invalid EFID.
138	MissingListSeqNo	The order did not supply the ListSeqNo field.
139	InvalidListSeqNo	The order contained an invalid ListSeqNo.
140	QuotesHaveDifferentUnderliers	The order contained quotes for different underliers.
141	TwoSidedQuotesCross	The order contained a two sided quote's where bidPx and offerPx cross.
142	MissingPositionEffect	The order did not supply the PositionEffect field.
143	InvalidPositionEffect	The order contained an invalid PositionEffect.
144	MissingRepriceBehaviorType	The order did not supply the RepriceBehaviorType field.
145	InvalidRepriceBehaviorType	The order contained an invalid RepriceBehaviorType.
146	MissingRepriceFrequencyType	The order did not supply the RepriceFrequencyType field.
147	InvalidRepriceFrequencyType	The order contained an invalid RepriceFrequencyType.
148	MissingPartyRoleType	The order did not supply the PartyRoleType field.
149	InvalidPartyRoleType	The order contained an invalid PartyRoleType.
150	MissingPartyID	The order did not supply the PartyID field.
151	InvalidPartyID	The order contained an invalid PartyID.
152	MissingPartyIDSource	The order did not supply the PartyIDSource field.
153	InvalidPartyIDSource	The order contained an invalid PartyIDSource.
154	UnderlyingSymbolNotOpen	The order contained underlying symbol not open for trading
155	MissingSendingTime	The order did not supply sendingTime field

Value	Name	Description
156	InvalidSendingTime	The order contained invalid sending time field
157	MissingSubAccount	The order did not supply subAccount
158	InvalidSubAccount	The order contained an invalid subAccount
159	MissingGiveUp	The order did not supply giveUp field
160	InvalidGiveUp	The order contained an invalid giveUp
161	MissingCMTA	The order did not supply CMTA field
162	InvalidCMTA	The order contained an invalid CMTA
163	MissingActionableID	The order did not supply actionableID field
164	InvalidActionableID	The order contained an invalid actionableID
165	MissingOptionalOCCData	The order did not supply optionalOCCData field
166	InvalidOptionalOCCData	The order contained an invalid optionalOCCData
167-199	N/A	Reserved.
200	Halted	The symbol/OptionsSecurityID supplied in the order is currently halted.
201	FirmDisabled	The order was rejected because the firm sending the order has been disabled.
202	EFIDDisabled	The order was rejected because the EFID used in the order has been disabled.
203	AccountDisabled	The order was rejected because the account sending the order has been disabled.
204	InvalidModifierForOrderType	The order contained one or more modifiers that are not compatible with the order type provided.
205	InvalidTimeInForceForOrderType	The order contained a time in force that is not compatible with the order type provided.
206	N/A	Reserved.
207	PostOnlyNotAllowed	Post-only behavior is not allowed with one or more of the supplied order directives.
208	QuoteModifyRejected	Canceled resting bulk quote if an incoming bulk message to modify such quote with the same EFID is rejected or canceled by the Trading System.
209	QuotingDisabled	Bulk quote sent by a non-market maker.
210	InvalidQuoteComponentCount	Empty quote or a quote exceeding max components.
211-299	N/A	Reserved.
300	NonTestSymbolsBlocked	The order was for a non-test symbol/OptionsSecurityID and the port is configured in test-only mode (exchange configuration).

Value	Name	Description
301	NotionalValueExceedsThreshold	The notional value of the order exceeded an exchange configured maximum.
302	MaxNotionalValuePerOrder RiskRuleViolated	The notional value of the order violated the firm's max notional value per order risk rule.
303	BlockNonTestSymbol RiskRuleViolated	The order violated the firm's test symbol/OptionsSecurityID trading risk rule.
304	MaxContractsPerOrder RiskRuleViolated	The order breached the firm's max contracts per order risk rule.
305	NBBOWidthExceedsThreshold	The width of the NBBO is greater than the exchange specified threshold.
306	ExchangePriceValueCollar RiskRuleViolated	An incoming Limit Order to buy with a price that is more than an Exchange specified amount above the NBO or an incoming Limit Order to sell with a price that is less than an Exchange specified amount below the NBB
307	ExecutionPriceHigherThanStrikePrice	Market Order or the remaining portion of a Market Order to buy a put that would execute in whole or in part at a price higher than or equal to the strike price of the option or an incoming Limit Order to buy a put that would execute at a price higher than or equal to the strike price of the option.
308	MarketBuyWhenNBOIsZero	Market Order to buy in an open series when the NBO is zero.
309	MarketSellWhenNBBGreaterThanThreshold	An incoming Market Order to sell in an open series when the NBB is greater than $0.50.
310	QuotePriceOutsideExchangeThreshold	Bulk quote canceled, bid with a price that is more than an Exchange specified amount above the NBO and cancel an incoming bulk message offer with a price that is less than an Exchange specified amount below the NBB.
311	N/A	
312	NumContractsExecutedExceedsThreshold	The number of contracts executed exceeds firm specified threshold.
313	NotionalValueOfExecutionsExceedsThreshold	The notional value of contracts executions exceeds firm specified threshold.
314	CountOfExecutionsExceedsThreshold	The count of contracts executed exceeds firm specified threshold.
315	OutstandingPercentageThresholdExceeded	The number of contracts executed as a percentage of the number of contracts outstanding within an Exchange configurable time period or for the trading day has been exceeded.
316	TripsThresholdExceeded	The number of times a firm reaches the limits in:

Value	Name	Description
		- NumContractsExecutedExceedsThreshold - NotionalValueOfExecutionsExceedsThreshold - CountOfExecutionsExceedsThreshold - OutstandingPercentageThresholdExceeded exceeds a threshold.
317	ISOOrdersNotAllowed	ISO marked orders at disabled.
318	MarketIsCrossed	Order not allowed while market is crossed.
319	ActiveRiskBreach	Active risk controls were breached for the underlying
320	ManualRiskBreach	Order not allowed because of a manual breach.
321	GrossNotionalValueExceedsThreshold	Order not allowed because it surpassed the gross notional risk threshold.
322	NetNotionalValueExceedsThreshold	Order not allowed because it surpassed the net notional risk threshold.
323	DuplicateOrderThresholdExceeded	Order not allowed because it surpassed the duplicate order risk threshold.
324	OrderRateThresholdExceeded	Order not allowed because it surpassed the order rate risk threshold.
325	MassCancelLockoutInEffect	Order not allowed because a Mass Cancel Lockout is in effect.
326	MarketOrderGrossNotionalValueExceedsThreshold	Market Order not allowed because it surpassed the market order gross notional risk threshold.
327	MarketOrderNetNotionalValueExceedsThreshold	Market Order not allowed because it surpassed the market order net notional risk threshold.
328	LimitOrderFatFingerCheck	Limit Order not allowed because it failed fat finger check
329	BulkQuoteFatFingerCheck	Bulk Quote not allowed because it failed fat finger check
330	MarketOrdersNotAllowed	Market orders are disabled
331	UnderlierOnRestrictedList	Order not allowed because underlier is on restricted list

4.22 OrdType (FIX tag 40)

Indicates the type of an order.

OrdType is a 1-byte CHAR value.

Value	Name
'1'	Market
'2'	Limit

4.23 TradingCapacityType (FIX tag 1815)

Capacity of the order.

TradingCapacityType is a 1-byte UINT8 value.

Value	Name
1	Customer
2	Professional Customer
3	Broker Dealer
4	Broker Dealer Customer
5	Firm
6	Market Maker
7	Away Market Maker

4.24 RepriceFrequencyType (MEMX custom FIX tag 21020)

Defines the type of reprice used when marking an order for repricing.

RepriceFrequencyType is a 1-byte UINT8 value.

Value	Name	Description
0	SingleReprice	An order will be repriced upon entry.
1	ContinuousReprice	An order will continuously be repriced after being booked.
2	None	No repricing will be done.

4.25 RepriceBehaviorType(MEMX custom FIX tag 21021)

Defines the market conditions for which to apply repricing for.

RepriceBehaviorType is a 1-byte UINT8 value.

Value	Name	Description
1	RepriceLockCancelCross	An order will only be repriced if the market is locked, cancel if market is crossed.
2	RepriceLockRepriceCross	An order will be repriced if the market is locked or crossed.

4.26 MatchTradePreventionType (MEMX custom FIX tag 21001)

Defines the match trade operation which will be used if the exchange match-trade-prevention functionality is triggered on this order.

If this order would execute against an opposite side resting interest with the same match-trade prevention identifier, the behavior specified by this value will be triggered.

MatchTradePreventionType is a 1-byte UINT8 value.

Value	Name	Description
0	CancelNewest	If triggered, this order (the incoming order) will be canceled.
1	CancelOldest	If triggered, the resting order will be canceled.
2	N/A	Reserved value.
3	CancelBoth	If triggered, both the incoming and the resting orders will be canceled.

4.27 PartyRoleType (FIX tag 452)

Identifies the type or role of the PartyID in the Parties repeating group. Clients must specify the Execution Firm ID (EFID), and if the capacity is M or N the Market Maker Sub Account, on New Orders and Allocation Instructions. Clients may optionally specify the Actionable Identifier, Give Up, Optional OCC Data, and CMTA. Clients will receive the Contra EFID and potentially any of the other Contra fields on Trades and Allocation Report messages. Clients will also receive Clearing Firm and Contra Clearing Firm on all Trade and Allocation Report messages. Clearing Firm is not allowed on inbound messages.

PartyRoleType is a UINT8 value. The exchange currently supports the following values for this field:

Value	Name
1	Executing Firm ID
3	Actionable Identifier
4	Clearing Firm
14	GiveUp Clearing Firm
17	Contra EFID
18	Contra Clearing Firm
24	OptionalOCCData
37	Contra MM Sub Account
40	CMTA
41	Contra CMTA
66	Market Maker Sub Account

4.28 SideType (FIX tag 54)

Defines the side of an order.

SideType is a CHAR value.

Value	Name
'1'	Buy
'2'	Sell
'B'	As Defined - Note this is not a valid Client to Exchange SideType value. It is only sent from the Exchange to the Client. It can be used for the Side field in an ExecutionReport_Rejected message when an entire bulk quote is rejected.

4.29 MtpGroupIDType (FIX tag 2362)

This field uniquely identifies the match trade prevention group. Several of the values are reserved values while other values are treated as custom values and are at the discretion of the client.

MtpGroupID is a 2-byte UINT16 value.

Value	Name	Description
0	Firm Scope	Prevents orders from the same firm trading with each other
1	EFID Scope	Prevents orders from the same EFID trading with each other
2	Account Scope	Prevents orders from the same account trading with each other
3-65534	Custom Scope	Prevents orders with matching MtpGroupID across the firm from trading with each other
65535	NULL	The UINT16 Null value (0xFFFF) disables custom match-trade prevention grouping.

4.30 TimeInForceType (FIX tag 59)

Defines the time during which an order is eligible for execution.

TimeInForceType is a 1-byte CHAR value.Messages

Value	Name	Description
'0'	Day	The order is entered for execution during the open market period.
'3'	Immediate Or Cancel (IOC)	The order shall be partially or completely executed immediately, or canceled outright.

4.31 UserStatusType (FIX tag 926)

Defines the changed session state as it pertains the User.

UserStatusType is a UINT8 value.

Value	Name
8	Session shutdown warning.
100	Session shutdown, end of events for session.

5 Messages

5.1 Client To Server

5.1.1 NewOrderSingle

The new order message type is used by institutions wishing to electronically submit options orders to the exchange for execution.

This message corresponds to FIX message type D.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	N/A	SBE Header with templateID = 1
SendingTime	7	8	UTCTimestampNanos	52	Y	Time of message transmission always expressed in UTC (Universal Time Coordinated, also known as GMT)
ClOrdID	15	20	CHAR	11	Y	Unique identifier of the order as assigned by the client.
OptionsSecurityID	35	8	CHAR	21035	Y	The OptionsSecurityID of the tradable options product for the order.
Side	43	1	SideType	54	Y	Side of order.
OrderQty	44	4	UINT32	38	Y	Quantity ordered. This represents the number of options contracts.
OrdType	48	1	OrdType	40	Y	Type of the order.
Price	49	8	PriceType	44	N	Price per unit of quantity (e.g. per contract).
TimeInForce	57	1	TimeInForceType	59	Y	Defines the time during which an order is eligible for execution.
PositionEffect	58	1	PositionEffectType	77	N	Opening or closing a position.
ExecInst	59	2	ExecInstType	18	Y	Instructions for order handling on exchange.
TradingCapacity	61	1	TradingCapacityType	1815	Y	Capacity of the order.
RepriceFrequency	62	1	RepriceFrequencyType	21020	N	Defines the frequency of a

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						reprice. If this tag is not sent then the order will not be repriced.
RepriceBehavior	63	1	RepriceBehaviorType	21021	N	Defines the reprice behavior when market is locked or crossed.
MtpGroupID	64	2	MtpGroupIDType	2362	N	Unique identifier of custom match-trade prevention group.
MatchTradePrevention	66	1	MatchTradePreventionType	21001	N	Defines the desired behavior in the event of a wash. The UINT8 Null (0xFF) value disables match trade prevention.
CancelGroupID	67	2	UINT16	21000	N	Unique identifier of custom cancel group.
RiskGroupID	69	2	UINT16	21005	N	Unique identifier of a custom risk control set to be applied to this order. The UINT16 Null value (0xFFFF) disables custom risk controls.
NoPartyIDs	-	-	RepeatingGroupDimensions	453	Y	The dimensions of the Repeating Group.
Parties	-	-	Parties Group	N/A	N	The parties associated with the quotes.

5.1.2 ShortTwoSidedBulkQuote

The two sided bulk quote message type is used by market makers wishing to electronically submit multiple quotes with similar semantics to the exchange for execution. This messages supports two sided quotes with smaller field sizes for quantities and prices.

This message corresponds to FIX message type i.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 2

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SendingTime	7	8	UTCTimestampNanos	52	Y	Time of message transmission always expressed in UTC (Universal Time Coordinated, also known as GMT)
ClOrdID	15	20	CHAR	11	Y	Unique identifier of the order as assigned by the client.
TimeInForce	35	1	TimeInForceType	59	Y	Defines the time during which an order is eligible for execution.
ExecInst	36	2	ExecInstType	18	Y	Instructions for order handling on exchange.
TradingCapacity	38	1	TradingCapacityType	1815	Y	Capacity of the order.
MtpGroupID	39	2	MtpGroupIDType	2362	N	Unique identifier of custom match-trade prevention group.
MatchTradePrevention	41	1	MatchTradePreventionType	21001	N	Defines the desired behavior in the event of a wash. The UINT8 Null (0xFF) value disables match trade prevention.
CancelGroupID	42	2	UINT16	21000	N	Unique identifier of custom cancel group.
RiskGroupID	44	2	UINT16	21005	N	Unique identifier of a custom risk control set to be applied to this order. The UINT16 Null value (0xFFFF) disables custom risk controls.
NoPartyIDs	-	-	RepeatingGroupDimensions	453	Y	The dimensions of the Repeating Group.
Parties	-	-	Parties Group	N/A	Y	The parties associated with the quotes.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
NoQuoteEntries	-	-	RepeatingGroupDimensions	295	Y	The dimensions of the Repeating Group.
Quotes	-	-	Short Two Sided Quote	N/A	Y	The characteristics of each quote.

5.1.3 LongTwoSidedBulkQuote

The two sided bulk quote message type is used by market makers wishing to electronically submit multiple quotes with similar semantics to the exchange for execution. This messages supports two sided quotes with larger field sizes for quantities and prices.

This message corresponds to FIX message type i.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 3
SendingTime	7	8	UTCTimestampNanos	52	Y	Time of message transmission always expressed in UTC (Universal Time Coordinated, also known as GMT)
ClOrdID	15	20	CHAR	11	Y	Unique identifier of the order as assigned by the client.
TimeInForce	35	1	TimeInForceType	59	Y	Defines the time during which an order is eligible for execution.
ExecInst	36	2	ExecInstType	18	Y	Instructions for order handling on exchange.
TradingCapacity	38	1	TradingCapacityType	1815	Y	Capacity of the order.
MtpGroupID	39	2	MtpGroupIDType	2362	N	Unique identifier of custom match-trade prevention group.
MatchTradePrevention	41	1	MatchTradePreventionType	21001	N	Defines the desired behavior in the event of a wash. The UINT8 Null (0xFF) value disables match trade prevention.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
CancelGroupID	42	2	UINT16	21000	N	Unique identifier of custom cancel group.
RiskGroupID	44	2	UINT16	21005	N	Unique identifier of a custom risk control set to be applied to this order. The UINT16 Null value (0xFFFF) disables custom risk controls.
NoPartyIDs	-	-	RepeatingGroupDimensions	453	Y	The dimensions of the Repeating Group.
Parties	-	-	Parties Group	N/A	Y	The parties associated with the quotes.
NoQuoteEntries	-	-	RepeatingGroupDimensions	295	Y	The dimensions of the Repeating Group.
Quotes	-	-	Long Two Sided Quote	N/A	Y	The characteristics of each quote.

5.1.4 ShortOneSidedBulkQuote

The one sided bulk quote message type is used by market makers wishing to electronically submit multiple one sided quotes with similar semantics to the exchange for execution. This messages supports one sided quotes with smaller field sizes for quantities and prices.

This message corresponds to FIX message type i.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 4
SendingTime	7	8	UTCTimestampNanos	52	Y	Time of message transmission always expressed in UTC (Universal Time Coordinated, also known as GMT)
ClOrdID	15	20	CHAR	11	Y	Unique identifier of the order as assigned by the client.
TimeInForce	35	1	TimeInForceType	59	Y	Defines the time during which an order is eligible for execution.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
ExecInst	36	2	ExecInstType	18	Y	Instructions for order handling on exchange.
TradingCapacity	38	1	TradingCapacityType	1815	Y	Capacity of the order.
MtpGroupID	39	2	MtpGroupIDType	2362	N	Unique identifier of custom match-trade prevention group.
MatchTradePrevention	41	1	MatchTradePreventionType	21001	N	Defines the desired behavior in the event of a wash. The UINT8 Null (0xFF) value disables match trade prevention.
CancelGroupID	42	2	UINT16	21000	N	Unique identifier of custom cancel group.
RiskGroupID	44	2	UINT16	21005	N	Unique identifier of a custom risk control set to be applied to this order. The UINT16 Null value (0xFFFF) disables custom risk controls.
NoPartyIDs	-	-	RepeatingGroupDimensions	453	Y	The dimensions of the Repeating Group.
Parties	-	-	Parties Group	N/A	N	The parties associated with the quotes.
NoQuoteEntries	-	-	RepeatingGroupDimensions	295	Y	The dimensions of the Repeating Group.
Quotes	-	-	Short One Sided Quote	N/A	Y	The characteristics of each quote.

5.1.5 LongOneSidedBulkQuote

The one sided bulk quote message type is used by market makers wishing to electronically submit multiple one sided quotes with similar semantics to the exchange for execution. This messages supports one sided quotes with larger field sizes for quantities and prices.

This message corresponds to FIX message type i.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 5
SendingTime	7	8	UTCTimestampNanos	52	Y	Time of message transmission always expressed in UTC (Universal Time Coordinated, also known as GMT)
ClOrdID	15	20	CHAR	11	Y	Unique identifier of the order as assigned by the client.
TimeInForce	35	1	TimeInForceType	59	Y	Defines the time during which an order is eligible for execution.
ExecInst	36	2	ExecInstType	18	Y	Instructions for order handling on exchange.
TradingCapacity	38	1	TradingCapacityType	1815	Y	Capacity of the order.
MtpGroupID	39	2	MtpGroupIDType	2362	N	Unique identifier of custom match-trade prevention group.
MatchTradePrevention	41	1	MatchTradePreventionType	21001	N	Defines the desired behavior in the event of a wash. The UINT8 Null (0xFF) value disables match trade prevention.
CancelGroupID	42	2	UINT16	21000	N	Unique identifier of custom cancel group.
RiskGroupID	44	2	UINT16	21005	N	Unique identifier of a custom risk control set to be applied to this order. The UINT16 Null value (0xFFFF) disables custom risk controls.
NoPartyIDs	-	-	RepeatingGroupDimensions	453	Y	The dimensions of the Repeating Group.
Parties	-	-	Parties Group	N/A	Y	The parties associated with the quotes.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
NoQuoteEntries	-	-	RepeatingGroupDimensions	295	Y	The dimensions of the Repeating Group.
Quotes	-	-	Long One Sided Quote	N/A	Y	The characteristics of each quote.

5.1.6 OrderCancelReplaceRequest

The order cancel/replace request is used to change the parameters of an existing order.

This message corresponds to FIX message type G

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 6
SendingTime	7	8	UTCTimestampNanos	52	Y	Time of message transmission always expressed in UTC (Universal Time Coordinated, also known as GMT)
OrderID	15	8	UINT64	37	N	OrderID as assigned by the exchange.
ClOrdID	23	20	CHAR	11	Y	Unique identifier of the replacement order as assigned by the client. Uniqueness must be guaranteed within a single trading day.
ListSeqNo	43	1	UINT8	67	Y	This field is used for identifying a specific quote entered via a Bulk Quote request. This field may not change from the value stated in the original Bulk Quote request. For orders entered via New Order Single this field should be zero.
OrigClOrdID	44	20	CHAR	41	Y	ClOrdID (11) of the previous order

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						(NOT the initial order of the day) .
OptionsSecurityID	64	8	CHAR	21035	Y	The OptionsSecurityID identifying the tradable options product.
Side	72	1	SideType	54	Y	This field may not change from the value stated in the original order.
OrderQty	73	4	UINT32	38	Y	Quantity ordered. This represents the number of contracts for options.
OrdType	77	1	OrdType	40	Y	OrderType may only change from Limit order to Market order.
Price	78	8	PriceType	44	N	Price per unit of quantity (e.g. per contract). Changing the price will cause the order to lose its priority in the book.

5.1.7 OrderCancelRequest

The order cancel request message requests the cancellation all remaining size on an order.

Note: this message can be used to cancel an order for a different account by specifying the order's exchange order ID (`OrderID`), the remote order may have been entered via MEMO or MEMO FIX supported ports.

This message corresponds to FIX message type F

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 7
SendingTime	7	8	UTCTimestampNanos	52	Y	Time of message transmission always expressed in UTC (Universal Time Coordinated, also known as GMT)

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
OrderID	15	8	UINT64	37	Y*	OrderID as assigned by the exchange.
ClOrdID	23	20	CHAR	11	Y	An identifier for the cancel request.
ListSeqNo	43	1	UINT8	67	Y	This field is used for identifying a specific quote entered via a Bulk Quote request. This field may not change from the value stated in the original Bulk Quote request. For orders entered via New Order Single this field should be zero.
OrigClOrdID	44	20	CHAR	41	Y*	ClOrdID (11) of the previous order (NOT the initial order of the day) as assigned by the customer.
OptionsSecurityID	64	8	CHAR	21035	Y	The OptionsSecurityID identifying the tradable options product.
Side	72	1	SideType	54	Y	This field is used to identify a specific quote entered via a Bulk Quote request.

Note: either OrigClOrdID or OrderID fields must be present.

5.1.8 MassCancelRequest

The mass cancel request message requests the cancellation all remaining size on a set of existing orders that match the given criteria.

Note: this message can be used to cancel orders from different accounts. Orders affected by this request may have been entered via either MEMO or MEMO FIX supported protocol

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 8
SendingTime	7	8	UTCTimestampNanos	52	Y	Time of message transmission always expressed in UTC (Universal Time Coordinated, also known as GMT)
ClOrdID	15	20	CHAR	11	Y	A unique identifier for the mass cancel request.
EFID	35	4	CHAR	21007	N	Cancel all orders on this EFID.
UnderlyingOrSeries	39	1	UnderlyingOrSeriesType	21029	Y	If UnderlyingOrSeries is set to CancelAllOnSeries then OptionsSecurityID must be provided to denote the specific option series (root, put/call, expiration, and strike price) to cancel orders on. This option must be a series of the provided underlying symbol. If UnderlyingOrSeries is set to CancelAllOnUnderlying then all orders on that underlying that match the rest of the filter will be canceled.
Underlier	40	6	CHAR	55	Y	The Underlying symbol on which to cancel orders. If UnderlyingOrSeries is set to CancelAllOnSeries, cancels will be limited in scope for the OptionsSecurityID provided on this message.
OptionsSecurityID	46	8	CHAR	21035	N	The OptionsSecurityID identifying the

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						tradable options product to cancel orders on, if UnderlyingOrSeries is set to CancelAllOnSeries.
CancelGroupID	54	2	UINT16	21000	N	Identifier of custom cancel group.
MassCancelInst	56	1	MassCancelInstType	21031	Y	The instructions for mass cancel request handling.

5.1.9 MassCancelClearLockoutRequest

The mass cancel clear lockout request message requests the clearing of a previous lockout. A lockout can be requested as part of a Mass Cancel Request using the MassCancelInst field. The LockoutID is assigned by the exchange and is returned in a PendingMassCancel message. The lockoutID from the PendingMassCancel message is used to identify the lockout to clear.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 9
SendingTime	7	8	UTCTimestampNanos	52	Y	Time of message transmission always expressed in UTC (Universal Time Coordinated, also known as GMT)
ClOrdID	15	20	CHAR	11	Y	A unique identifier for the mass cancel clear lockout request.
Underlier	35	6	CHAR	55	Y	The Underlying symbol on which the lockout is in effect.
LockoutID	41	8	UINT64	21033	Y	The LockoutID of a previous lockout, returned in a PendingMassCancel message.

5.1.10 MassCancelBulkClearAllLockoutsRequest

The mass cancel clear all lockouts request message requests the clearing of previously placed lockouts. A lockout can be requested as part of a MassCancelRequest using the MassCancelInst field. The MassCancelBulkClearAllLockoutsRequest will clear all existing lockouts for the FIRM associated with the port. A MassCancelBulkClearLockoutAccepted message will be sent on the requesting port if the request is deemed valid else a MassCancelBulkClearLockoutReject will be sent instead with the appropriate reject reason code.

note: Lockouts initiated via a different port sent in parallel to this request may be cleared as part of this operation as well.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 32
SendingTime	7	8	UTCTimestampNanos	52	Y	Time of message transmission always expressed in UTC (Universal Time Coordinated, also known as GMT)
ClOrdID	15	20	CHAR	11	Y	A unique identifier for the mass cancel clear lockout request.

5.1.11 MassCancelBulkClearLockoutsByEFIDOrUnderlierRequest

The mass cancel clear lockouts by EFID and/or Underlier request message requests the clearing of previously placed lockouts. A lockout can be requested as part of a MassCancelRequest using the MassCancelInst field. The MassCancelBulkClearLockoutsByEFIDOrUnderlierRequest will clear all existing lockouts for the specified EFID and/or those for the FIRM associated with the port and the specified Underlier, if both values are set, only lockouts belonging to both EFID and Underlier will be cleared.
A MassCancelBulkClearLockoutAccepted message will be sent on the requesting port if the request is deemed valid else a MassCancelBulkClearLockoutReject will be sent instead with the appropriate reject reason code.

note: Lockouts initiated via a different port sent in parallel to this request may be cleared as part of this operation as well.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 33
SendingTime	7	8	UTCTimestampNanos	52	Y	Time of message transmission always expressed in UTC (Universal Time Coordinated, also known as GMT)
ClOrdID	15	20	CHAR	11	Y	A unique identifier for the mass cancel clear lockout request.
EFID	35	4	CHAR	21007	Y*	The EFID for which all lockouts will be cleared.
Underlier	39	6	CHAR	55	Y*	The Underlying symbol on which to clear all lockouts for the firm.

*Either Underlier and/or EFID is required.

5.1.12 AllocationInstruction

The AllocationInstruction message requests a modification to the clearing information on the trade. Supported fields to change are the non-contra fields in the Parties block, along with being able to split the quantity of the trade into multiple allocation units. Changes requested with this message are returned in AllocationInstructionAck (to the requestor) and AllocationInstructionAlert (to the contra party) messages.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 10
SendingTime	7	8	UTCTimestampNanos	52	Y	Time of message transmission always expressed in UTC (Universal Time Coordinated, also known as GMT)
AllocID	15	20	CHAR	70	Y	Unique identifier for this allocation instruction message - supplied by customer, similar to ClOrdId
AllocType	35	1	AllocType	626	Y	Specifies the purpose or type of Allocation message.
AllocTransType	36	1	AllocTransType	71	Y	Identifies allocation transaction type being requested (New or Replace)
RefAllocID	37	20	CHAR	72	C	Required when AllocTransType = Replace, contains the IndividualAllocID of the allocation unit being changed.
OptionsSecurityID	57	8	CHAR	21035	Y	The OptionsSecurityID of the tradable options product of the

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						trade being edited.
Side	65	1	SideType	54	Y	Identifies the Side of the trade being edited
NoExecs	-	-	RepeatingGroupDimensions	124	Y	Specifies the number of Trades being allocated (always set to 1)
ExecutionAllocations	-	-	ExecutionAllocationsGroup	N/A	Y	Specifies the Trade being allocated
NoAllocs	-	-	RepeatingGroupDimensions	78	Y	The dimensions of the Allocations Repeating Group.
RequestedAllocations	-	-	RequestAllocationsGroup	N/A	Y	The requested allocations for the trade.

5.2 Server To Client

5.2.1 ExecutionReport

The MEMO schema defines multiple Execution Report messages each conforming to FIX message type 8.

5.2.1.1 ExecutionReport_New

The ExecutionReport_New is a response to order requests in the event the order was accepted by the exchange. This message echos back to the requester all the fields as been configured on the request with additional information about the state of the order.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 11
OrderID	7	8	UINT64	37	Y	OrderID as assigned by the exchange.
ClOrdID	15	20	CHAR	11	Y	As stated in the order.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
ListSeqNo	35	1	UINT8	67	Y	Always 0 for NewOrderSingle request.
ExecID	36	8	UINT64	17	Y	Identifier of execution message as assigned by the exchange. The ExecID can be correlated with the Memoir OrderID value.
OrdStatus	44	1	OrdStatusType	39	Y	The status of the order.
OptionsSecurityID	45	8	CHAR	21035	Y	As stated in the order.
Side	53	1	SideType	54	Y	As stated in the order.
OrderQty	54	4	UINT32	38	Y	As stated in the order.
OrdType	58	1	OrdType	40	Y	As stated in the order.
Price	59	8	PriceType	44	N	As stated in the order.
TimeInForce	67	1	TimeInForceType	59	Y	As stated in the order.
PositionEffect	68	1	PositionEffectType	77	N	As stated in the order.
ExecInst	69	2	ExecInstType	18	Y	As stated in the order.
TradingCapacity	71	1	TradingCapacityType	1815	Y	As stated in the order.
RepriceFrequency	72	1	RepriceFrequencyType	21020	N	As stated in the order.
RepriceBehavior	73	1	RepriceBehaviorType	21021	N	As stated in the order.
LeavesQty	74	4	UINT32	151	Y	Quantity open for further execution.
CumQty	78	4	UINT32	14	Y	Total quantity (e.g. number of contracts) filled.
SendingTime	82	8	UTCTimestampNanos	52	Y	The time the ExecutionReport was sent. UTC timestamp since unix epoch with

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						nanosecond precision.
TransactTime	90	8	UTCTimestampNanos	60	Y	The time at which the transaction occurred. UTC timestamp since epoch with nanosecond precision.
MtpGroupID	98	2	MtpGroupIDType	2362	N	As stated in the order.
MatchTradePrevention	100	1	MatchTradePreventionType	21001	N	As stated in the order.
CancelGroupID	101	2	UINT16	21000	N	As stated in the order.
RiskGroupID	103	2	UINT16	21005	N	As stated in the order.
NoPartyIDs	-	-	RepeatingGroupDimensions	453	Y	The dimensions of the Repeating Group.
Parties	-	-	Parties Group	N/A	Y	The parties associated with the quotes.

5.2.1.2 ExecutionReport_BulkQuote_PendingNew

The ExecutionReport_BulkQuote_PendingNew is a response to bulk quote requests (ShortTwoSidedBulkQuote, LongTwoSidedBulkQuote, ShortOneSidedBulkQuote, LongOneSidedBulkQuote) in the event the bulk quote request was accepted by the exchange. This message echos back to the requester fields configured on the request with additional information about the state of the bulk quote handling.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 12
ClOrdID	7	20	CHAR	11	Y	As stated in the request.
Symbol (Underlier)	27	6	CHAR	55	Y	As stated in the request.
TimeInForce	33	1	TimeInForceType	59	Y	As stated in the request.
ExecInst	34	2	ExecInstType	18	Y	As stated in the request.
TradingCapacity	36	1	TradingCapacityType	1815	Y	As stated in the request.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SendingTime	37	8	UTCTimestampNanos	52	Y	The time the ExecutionReport was sent. UTC timestamp since unix epoch with nanosecond precision.
TransactTime	45	8	UTCTimestampNanos	60	Y	The time at which the transaction occurred. UTC timestamp since epoch with nanosecond precision.
MtpGroupID	53	2	MtpGroupIDType	2362	N	As stated in the request.
MatchTradePrevention	55	1	MatchTradePreventionType	21001	N	As stated in the request.
CancelGroupID	56	2	UINT16	21000	N	As stated in the request.
RiskGroupID	58	2	UINT16	21005	N	As stated in the request.
NumberOfOrders	60	1	UINT8	346	Y	The number of orders/quote entries in the request.
NoPartyIDs	-	-	RepeatingGroupDimensions	453	Y	The dimensions of the Repeating Group.
Parties	-	-	Parties Group	N/A	Y	The parties associated with the quotes.

5.2.1.3 ExecutionReport_BulkQuote_ComponentNew

The ExecutionReport_BulkQuote_ComponentNew is a response to bulk quote requests (ShortTwoSidedBulkQuote, LongTwoSidedBulkQuote, ShortOneSidedBulkQuote, LongOneSidedBulkQuote). This message gives state information about an individual single sided quote within the bulk quote request. The requester will receive a component new message for each side of a two-sided entry. This message echos back to the requester fields configured on the individual single sided quote with additional information about the state of the individual quote handling.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 13
OrderID	7	8	UINT64	37	Y	OrderID as assigned by the exchange.
ClOrdID	15	20	CHAR	11	Y	As stated in the request.
ListSeqNo	35	1	UINT8	67	Y	As stated in the request.
ExecID	36	8	UINT64	17	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day. The ExecID can be correlated with the Memoir OrderID value.
OrdStatus	44	1	OrdStatusType	39	Y	The status of the request.
OptionsSecurityID	45	8	CHAR	21035	Y	As stated in the request.
Side	53	1	SideType	54	Y	As stated in the request.
OrderQty	54	4	UINT32	38	Y	As stated in the request.
Price	58	8	PriceType	44	N	As stated in the request.
LeavesQty	66	4	UINT32	151	Y	Quantity open for further execution.
CumQty	70	4	UINT32	14	Y	Total quantity (e.g. number of contracts) filled.
SendingTime	74	8	UTCTimestampNanos	52	Y	The time the ExecutionReport was sent. UTC timestamp since unix epoch with nanosecond precision.
TransactTime	82	8	UTCTimestampNanos	60	Y	The time at which the transaction occurred. UTC timestamp since epoch with

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						nanosecond precision.

5.2.1.4 ExecutionReport_Rejected

The ExecutionReport_Rejected is a response to order and quote requests in the event the order/quote was rejected by the Exchange. This message echos back to the requester some of the fields as been configured on the request with additional information about the reject reason.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 14
ClOrdID	7	20	CHAR	11	Y	As stated in the order.
ListSeqNo	27	1	UINT8	67	Y	As stated in the Bulk Quote request or 0 for NewOrderSingle request
ExecID	28	8	UINT64	17	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day. The ExecID can be correlated with the Memoir OrderID value.
OrdStatus	36	1	OrdStatusType	39	Y	The status of the order.
RejectReason	37	2	OrderRejectReasonCode	103	Y	Reason code for order rejection.
OptionsSecurityID	39	8	CHAR	21035	Y	As stated in the order.
Side	47	1	SideType	54	Y	As stated in the order. If the order was a Bulk Quote this field will have the value 'B' = “As Defined”.
LeavesQty	48	4	UINT32	151	Y	Quantity open for further execution.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
CumQty	52	4	UINT32	14	Y	Total quantity (e.g. number of contracts) filled.
SendingTime	56	8	UTCTimestampNanos	52	Y	The time the ExecutionReport was sent. UTC timestamp since unix epoch with nanosecond precision.

5.2.1.5 ExecutionReport_Trade

The ExecutionReport_Trade is an unsolicited response triggered as a result of a trade. The message contains all the data describing the trade.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 15
OrderID	7	8	UINT64	37	Y	OrderID as assigned by the exchange.
ClOrdID	15	20	CHAR	11	Y	The unique identifier as specified by the client.
ListSeqNo	35	1	UINT8	67	Y	As stated in Bulk Quote request or 0 for NewOrderSingle request
TrdMatchID	36	8	UINT64	880	Y	Identifier assigned to the Trade by the matching system. In case of executions on orders routed to another exchange, the TrdMatchID field will be filled on a best-effort basis.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
ExecID	44	8	UINT64	17	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day. The ExecID can be correlated with the Memoir OrderID value.
OrdStatus	52	1	OrdStatusType	39	Y	The status of the order.
OptionsSecurityID	53	8	CHAR	21035	Y	As stated in the order.
Side	61	1	SideType	54	Y	As stated in the order
LastQty	62	4	UINT32	32	Y	Quantity (e.g. contracts) bought/sold on this (last) fill.
LastPx	66	8	PriceType	31	Y	Price of this (last) fill.
LeavesQty	74	4	UINT32	151	Y	Quantity open for further execution.
CumQty	78	4	UINT32	14	Y	Total quantity (e.g. number of contracts) filled.
SendingTime	82	8	UTCTimestampNanos	52	Y	The time the ExecutionReport was sent. UTC timestamp since unix epoch with nanosecond precision.
TransactTime	90	8	UTCTimestampNanos	60	Y	The time at which the transaction occurred. UTC timestamp since epoch with

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						nanosecond precision.
LastLiquidityInd	98	1	LastLiquidityIndType	851	Y	Indicator denoting whether the referenced order removed liquidity from or added liquidity to the MEMX book.
LastMkt	99	4	ExchangeCode	30	Y	Market of execution for last fill, or an indication of the market where an order was routed.
PositionEffect	103	1	PositionEffectType	77	Y	As stated in the order.
TradingCapacity	104	1	TradingCapacityType	1815	Y	As stated in the order.
ContraTradingCapacity	105	1	TradingCapacityType	21036	Y	TradingCapacity of the contra order.
NoPartyIDs	-	-	RepeatingGroupDimensions	453	Y	The dimensions of the Repeating Group.
Parties	-	-	Parties Group	N/A	N	The parties associated with the quotes.

5.2.1.6 ExecutionReport_PendingCancel

The ExecutionReport_PendingCancel is a response to OrderCancelRequest request indicating the request has been received by the exchange and is in the process of being handled.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 16
OrderID	7	8	UINT64	37	Y	OrderID as assigned by the exchange.
ClOrdID	15	20	CHAR	11	Y	As stated in the cancel request
ListSeqNo	35	1	UINT8	67	Y	As stated in the cancel request

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
OrigClOrdID	36	20	CHAR	41	Y	As stated in the cancel request
OrdStatus	56	1	OrdStatusType	39	Y	The status of the order.
OptionsSecurityID	57	8	CHAR	21035	Y	As stated in the cancel request.
Side	65	1	SideType	54	N	As stated in the cancel request
LeavesQty	66	4	UINT32	151	Y	Quantity open for further execution.
CumQty	70	4	UINT32	14	Y	Total quantity (e.g. number of contracts) filled.
SendingTime	74	8	UTCTimestampNanos	52	Y	The time the ExecutionReport was sent. UTC timestamp since unix epoch with nanosecond precision.

5.2.1.7 ExecutionReport_Canceled

The ExecutionReport_Canceled message is an event on an order/quote triggered by a successful handling of cancel / mass cancel request for that order. Orders/quotes that are canceled by the exchange because of Time in Force instructions shall have an OrdStatus as Expired. All other cases shall have OrdStatus as Canceled.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 17
OrderID	7	8	UINT64	37	Y	OrderID as assigned by the exchange to the canceled order.
ClOrdID	15	20	CHAR	11	Y	The identifier for the cancel request or the canceled order in the event of an unsolicited cancel*
ListSeqNo	35	1	UINT8	67	Y	As stated in the cancel request
OrigClOrdID	36	20	CHAR	41	Y	A Unique identifier for the canceled order.
ExecID	56	8	UINT64	17	Y	Unique identifier of execution

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						message as assigned by the exchange. Uniqueness is guaranteed within a single trading day. The ExecID can be correlated with the Memoir OrderID value.
OrdStatus	64	1	OrdStatusType	39	Y	The status of the order.
CancelReason	65	1	CancelReasonCode	21004	Y	Reason code for order cancellation.
OptionsSecurityID	66	8	CHAR	21035	Y	As stated in the cancel request.
Side	74	1	SideType	54	N	As stated in the cancel request
LeavesQty	75	4	UINT32	151	Y	Quantity open for further execution.
CumQty	79	4	UINT32	14	Y	Total quantity (e.g. number of contracts) filled.
SendingTime	83	8	UTCTimestampNanos	52	Y	The time the ExecutionReport was sent. UTC timestamp since unix epoch with nanosecond precision.
TransactTime	91	8	UTCTimestampNanos	60	Y	The time at which the transaction occurred. UTC timestamp since epoch with nanosecond precision.
OrigListSeqNo	99	1	UINT8	21023	Y	Original list sequence number

When the client has requested ExecutionRequest_Canceled messages as a result of a mass cancel request the cancels will be reported back to customers as Unsolicited cancel i.e. the `ClOrdID`and`OrigClOrdID`fields will contain the canceled order identifier.

5.2.1.8 ExecutionReport_PendingReplace

The ExecutionReport_PendingReplace message is a response to OrderCancelReplaceRequest request indicating the request has been received by the exchange and is in the process of being handled.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 18
OrderID	7	8	UINT64	37	Y	OrderID as assigned by the exchange to the canceled order.
ClOrdID	15	20	CHAR	11	Y	As stated in the replace request
ListSeqNo	35	1	UINT8	67	Y	As stated in the Bulk Quote request or 0 for NewOrderSingle request
OrigClOrdID	36	20	CHAR	41	Y	As stated in the replace request
ExecID	56	8	UINT64	17	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day. The ExecID can be correlated with the Memoir OrderID value.
OrdStatus	64	1	OrdStatusType	39	Y	The status of the order. (PendingReplace)
OptionsSecurityID	65	8	CHAR	21035	Y	As stated on the previous order
Side	73	1	SideType	54	Y	As stated in the order.
OrderQty	74	4	UINT32	38	Y	As stated on the previous order
OrdType	78	1	OrdType	40	Y	As stated on the previous order
Price	79	8	PriceType	44	N	As stated on the previous order
LeavesQty	87	4	UINT32	151	Y	Quantity open for further execution.
CumQty	91	4	UINT32	14	Y	Total quantity (e.g. number of contracts) filled.
SendingTime	95	8	UTCTimestampNanos	52	Y	The time the ExecutionReport

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						was sent. UTC timestamp since unix epoch with nanosecond precision.

5.2.1.9 ExecutionReport_Replaced

The ExecutionReport_Replaced is an unsolicited event on an order/quote triggered by a successful handling of OrderCancelReplaceRequest for the original order/quote. The original order/quote can be considered fully cancelled and replaced by the stated replacement order upon receipt of this event.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 19
OrderID	7	8	UINT64	37	Y	OrderID as assigned by the exchange.
ClOrdID	15	20	CHAR	11	Y	As stated in the replace request
ListSeqNo	35	1	UINT8	67	Y	As stated in the Bulk Quote request or 0 for NewOrderSingle request
OrigClOrdID	36	20	CHAR	41	Y	As stated in the replace request
ExecID	56	8	UINT64	17	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day. The ExecID can be correlated with the Memoir OrderID value.
OrdStatus	64	1	OrdStatusType	39	Y	The status of the order.
OptionsSecurityID	65	8	CHAR	21035	Y	As stated on the replace request
Side	73	1	SideType	54	Y	As stated in the replace request
OrderQty	74	4	UINT32	38	Y	As stated in the replace request
OrdType	78	1	OrdType	40	Y	As stated in the replace request

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
Price	79	8	PriceType	44	N	As stated in the replace request
LeavesQty	87	4	UINT32	151	Y	Quantity open for further execution.
CumQty	91	4	UINT32	14	Y	Total quantity (e.g. number of contracts) filled.
SendingTime	95	8	UTCTimestampNanos	52	Y	The time the ExecutionReport was sent. UTC timestamp since unix epoch with nanosecond precision.
TransactTime	103	8	UTCTimestampNanos	60	Y	The time at which the transaction occurred. UTC timestamp since epoch with nanosecond precision.
OrigListSeqNo	111	1	UINT8	21023	Y	Original list sequence number

5.2.1.10 ExecutionReport_TradeCorrection

The ExecutionReport_TradeCorrection is an unsolicited event notifying of a change to a price and/or quantity of a previously reported trade.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 20
OrderID	7	8	UINT64	37	Y	OrderID as assigned by the exchange.
ClOrdID	15	20	CHAR	11	Y	The ClOrdID associated with the order.
TrdMatchID	35	8	UINT64	880	Y	Identifier assigned to the Trade by the matching system. In case of executions on orders routed to another exchange, the

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						TrdMatchID field will be filled on a best-effort basis.
ExecID	43	8	UINT64	17	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day. The ExecID can be correlated with the Memoir OrderID value.
ExecRefID	51	8	UINT64	19	Y	The ExecID of the trade being corrected
OrdStatus	59	1	OrdStatusType	39	Y	Order status
OptionsSecurityID	60	8	CHAR	21035	Y	As stated on the order.
LastQty	68	4	UINT32	32	Y	Corrected trade quantity.
LastPx	72	8	PriceType	31	Y	Corrected trade price.
LeavesQty	80	4	UINT32	151	Y	Quantity open for further execution.
CumQty	84	4	UINT32	14	Y	Total quantity (e.g. number of contracts) filled.
SendingTime	88	8	UTCTimestampNanos	52	Y	The time the ExecutionReport was sent. UTC timestamp since unix epoch with nanosecond precision.

5.2.1.11 ExecutionReport_TradeBreak

The ExecutionReport_TradeBreak is an unsolicited event notifying of a cancelation of a previously reported trade.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 21

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
OrderID	7	8	UINT64	37	Y	OrderID as assigned by the exchange.
ClOrdID	15	20	CHAR	11	Y	The ClOrdID associated with the order.
TrdMatchID	35	8	UINT64	880	Y	Identifier assigned to the Trade by the matching system. In case of executions on orders routed to another exchange, the TrdMatchID field will be filled on a best-effort basis.
ExecID	4	8	UINT64	17	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day. The ExecID can be correlated with the Memoir OrderID value.
ExecRefID	51	8	UINT64	19	Y	The ExecID of the trade being corrected
OrdStatus	59	1	OrdStatusType	39	Y	Order status
OptionsSecurityID	60	8	CHAR	21035	Y	As stated on the order.
LeavesQty	68	4	UINT32	151	Y	Quantity open for further execution.
CumQty	72	4	UINT32	14	Y	Total quantity (e.g. number of contracts) filled.
SendingTime	76	8	UTCTimestampNanos	52	Y	UTC timestamp since unix epoch with nanosecond precision.

5.2.1.12 ExecutionReport_Restatement

The ExecutionReport_Restatement is an unsolicited event to notify the client that an open order has been updated by the MEMX system. This message may be sent for orders configured for automatic repricing via the RepriceFrequency instruction. This message can also be sent if the order quantity is partially or fully cancelled because of Match Trade Prevention.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 22
OrderID	7	8	UINT64	37	Y	OrderID as assigned by the exchange.
ClOrdID	15	20	CHAR	11	Y	The ClOrdID associated with the order.
ListSeqNo	35	1	UINT8	67	Y	As stated in the Bulk Quote request or 0 for NewOrderSingle request
ExecID	36	8	UINT64	17	Y	Unique identifier of execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day. The ExecID can be correlated with the Memoir OrderID value.
OrdStatus	44	1	OrdStatusType	39	Y	Order status
OptionsSecurityID	45	8	CHAR	21035	Y	OptionsSecurityID associated with the order.
ExecRestatementReason	53	1	ExecRestatementType	378	Y	The reason for the restatement.
ExtendedRestatementReason	54	1	ExtendedRestatementReason	21022	N	This field provides more RestatementReason info when applicable/available.
Side	55	1	SideType	54	Y	Order side
LastPx	56	8	PriceType	31	Y	ExecRestatementType(3):The updated booked price. This is the price that the order can match at. It may be different than the displayed price. ExecRestatementType(5): The match price if this order had not been prevented

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						from executing due to MTP restrictions.
LastQty	64	4	UINT32	32	N	ExecRestatementType(5): The number of contracts that would have matched if this order had not been prevented from executing due to MTP restrictions.
LeavesQty	68	4	UINT32	151	Y	Quantity open for further execution.
CumQty	72	4	UINT32	14	Y	Total quantity (e.g. number of contracts) filled.
SendingTime	76	8	UTCTimestampNanos	52	Y	UTC timestamp since unix epoch with nanosecond precision.
TransactTime	84	8	UTCTimestampNanos	60	Y	The time at which the transaction occurred. UTC timestamp since epoch with nanosecond precision.

5.2.2 PendingMassCancel

The PendingMassCancel is a response to MassCancelRequest request indicating the request has been received by the exchange and is in the process of being handled.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 23
ClOrdID	7	20	CHAR	11	Y	The identifier for this mass cancel, as stated in the mass cancel request.
MassCancelInst	27	1	MassCancelInstType	21031	Y	As stated in the mass cancel request.
LockoutID	28	8	UINT64	21033	N	If the request had the Lockout bit set in the MassCancelInst, this field will be present and contain a trading session unique lockout identifier that can be used to clear

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						the lockout with a MassCancelClearLockOut message.
EFID	36	4	CHAR	21007	N	As stated in the mass cancel request.
UnderlyingOrSeries	40	1	UnderlyingOrSeriesType	21029	Y	As stated in the mass cancel request.
Underlier	41	6	CHAR	55	Y	As stated in the mass cancel request.
OptionsSecurityID	47	8	CHAR	21035	N	As stated in the mass cancel request.
CancelGroupID	55	2	UINT16	21000	N	As stated in the mass cancel request
SendingTime	57	8	UTCTimestampNanos	52	Y	The time the ExecutionReport was sent. UTC timestamp since unix epoch with nanosecond precision.

5.2.3 MassCancelReject

The MassCancelReject message is used by the exchange to indicate a mass cancel request cannot be honored as sent.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 24
ClOrdID	7	20	CHAR	11	Y	The identifier for this mass cancel, as stated in the mass cancel request.
RejectReason	27	2	MassCxlRejReasonCode	21028	Y	Code to identify reason for mass cancel rejection
EFID	29	4	CHAR	21007	N	As stated in the mass cancel request.
UnderlyingOrSeries	33	1	UnderlyingOrSeriesType	21029	N	As stated in the mass cancel request.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
Underlier	34	6	CHAR	55	N	As stated in the mass cancel request.
OptionsSecurityID	40	8	CHAR	21035	N	As stated in the mass cancel request.
CancelGroupID	48	2	UINT16	21000	N	As stated in the mass cancel request
MassCancelInst	50	1	MassCancelInstType	21031	Y	As stated in the mass cancel request.
SendingTime	51	8	UTCTimestampNanos	52	Y	The time the message was sent. UTC timestamp since unix epoch with nanosecond precision.

5.2.4 MassCancelDone

The MassCancelDone is sent when all the orders specified in the MassCancelRequest request have been processed.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 25
ClOrdID	7	20	CHAR	11	Y	The identifier for this cancel, as stated in the mass cancel request.
TotalAffectedOrders	27	4	UINT32	533	Y	The number or orders cancelled.
SendingTime	31	8	UTCTimestampNanos	52	Y	The time the message was sent. UTC timestamp since unix epoch with

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						nanosecond precision.
TransactTime	39	8	UTCTimestampNanos	60	Y	The time at which the transaction occurred. UTC timestamp since epoch with nanosecond precision.

5.2.5 MassCancelClearLockoutReject

The MassCancelClearLockoutReject message is used by the exchange to indicate a MassCancelClearLockoutRequest cannot be honored.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 30
ClOrdID	7	20	CHAR	11	Y	Unique identifier from the MassCancelClearLockout Request.
Underlier	27	6	CHAR	55	Y	The Underlying symbol on which the lockout is applied.
LockoutID	33	8	UINT64	21033	Y	The LockoutID in the MassCancelClearLockout Request.
RejReason	41	2	MassCancelClearLockoutRejCode	21037	Y	Code to identify reason for cancel rejection.
SendingTime	43	8	UTCTimestampNanos	52	Y	The time the message was sent. UTC timestamp since unix epoch with nanosecond precision.

5.2.6 MassCancelClearLockoutDone

The MassCancelClearLockoutDone message is used by the exchange to indicate a lockout has been cleared. This message may be the result of MassCancelClearLockoutRequest or a bulk clear request MassCancelBulkClearAllLockoutsRequest / MassCancelBulkClearLockoutsByEFIDOrUnderlierRequest.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 31

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
ClOrdID	7	20	CHAR	11	Y	Unique identifier from the MassCancelClearLockoutRequest or the bulk request (MassCancelBulkClearAllLockoutsRequest / MassCancelBulkClearLockoutsByEFIDOrUnderlierReqeust).
Underlier	27	6	CHAR	55	Y	The Underlying symbol on which the lockout is configured
LockoutID	33	8	UINT64	21033	Y	The LockoutID in the MassCancelClearLockoutRequest.
Sending Time	41	8	UTCTimestampNanos	52	Y	The time the message was sent. UTC timestamp since unix epoch with nanosecond precision.
Transact Time	49	8	UTCTimestampNanos	60	Y	The time at which the transaction occurred. UTC timestamp since epoch with nanosecond precision.

5.2.7 MassCancelBulkClearLockoutReject

The MassCancelBulkClearLockoutReject message is used by the exchange to indicate a request to bulk clear lockouts (MassCancelBulkClearAllLockoutsRequest, MassCancelBulkClearLockoutsByEFIDOrUnderlierRequest) cannot be honored.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 35
ClOrdID	7	20	CHAR	11	Y	Unique identifier from the MassCancelClearLockout Request.
RejReason	27	2	MassCancelClearLockoutRejCode	21037	Y	Code to identify reason for cancel rejection.
SendingTime	29	8	UTCTimestampNanos	52	Y	The time the message was sent. UTC timestamp since unix epoch with nanosecond precision.

5.2.8 MassCancelBulkClearLockoutAccepted

The MassCancelBulkClearLockoutAccepted message is used by the exchange to indicate a request to bulk clear lockouts (MassCancelBulkClearAllLockoutsRequest, MassCancelBulkClearLockoutsByEFIDOrUnderlierRequest) has been accepted. This message will be followed by individual MassCancelClearLockoutDone messages for each lockout cleared as a result of the bulk request, which will be sent to the port that initiated each lockout.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 36
ClOrdID	7	20	CHAR	11	Y	Unique identifier from the clear bulk request (MassCancelBulkClearAllLockoutsRequest, MassCancelBulkClearLockoutsByEFIDRequest, MassCancelBulkClearLockoutByUnderlierRequest).
SendingTime	27	8	UTCTimestampNanos	52	Y	The time the message was sent. UTC timestamp since unix epoch with nanosecond precision.

5.2.9 OrderCancelReject

The OrderCancelReject message is used by the exchange to indicate a OrderCancelRequest or OrderCancelReplaceRequest cannot be honored.

This message corresponds to FIX message type 9

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 26
ClOrdID	7	20	CHAR	11	Y	Unique identifier from the cancel request.
ListSeqNo	27	1	UINT8	67	Y	As stated in the Bulk Quote request or 0 for NewOrderSingle request
CxlRejResponseTo	28	1	CxlRejResponseToType	434	Y	Identifies the request that this cancel reject is responding to.
CxlRejReason	29	2	CxlRejReasonCode	102	Y	Code to identify reason for cancel rejection.
OptionsSecurityID	31	8	CHAR	21035	N	As stated in the request.
Side	39	1	SideType	54	N	As stated in the request

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SendingTime	40	8	UTCTimestampNanos	52	Y	UTC timestamp since unix epoch with nanosecond precision.

5.2.10 AllocationInstructionAck

The AllocationInstructionAck message provides a response (accepted or rejected) to a previously submitted Allocation Instruction message. This message is sent to the requestor of the Allocation Instruction, whereas, if successful, the contra party will be notified via an Allocation Instruction Alert message.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 27
SendingTime	7	8	UTCTimestampNanos	52	Y	Time of message transmission always expressed in UTC (Universal Time Coordinated, also known as GMT)
AllocID	15	20	CHAR	70	Y	Unique identifier for this allocation instruction ack message - generated by MEMX
AllocType	35	1	AllocType	626	Y	As stated on request
AllocTransType	36	1	AllocTransType	71	Y	Identifies allocation transaction type being requested (New or Replace)
SecondaryAllocID	37	20	CHAR	793	Y	Contains the AllocID from the original Allocation Instruction request

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						supplied by the customer
RefAllocID	57	20	CHAR	72	C	Required when AllocTransType = Replace, contains the IndividualAllocID of the allocation unit being changed.
AllocStatus	77	1	AllocStatusType	87	Y	Status of request (Accepted or Rejected)
AllocRejCode	78	2	AllocRejCodeType	88	C	Populated when AllocStatus is not set to 'Accepted'
NoAllocs	-	-	RepeatingGroupDimensions	78	Y	The dimensions of the Allocations Repeating Group.
ReportedAllocations	-	-	ReportAllocationsGroup	N/A	Y	The allocations assigned to the trade - NOTE: this group contains IndividualAllocIDs for each unit of allocation, used to make further changes on those units.

5.2.11 AllocationInstructionAlert

The AllocationInstructionAlert message provides an unsolicited notification of allocations applied to a previously reported Trade or Allocation. This message is sent to a customer when the contra party has applied a new Allocation Instruction to a Trade or Allocation.

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
SBE Header	0	7	SBE Header	N/A	Y	SBE Header with templateID = 28
SendingTime	7	8	UTCTimestampNanos	52	Y	Time of message transmission

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
						always expressed in UTC (Universal Time Coordinated, also known as GMT)
AllocID	15	20	CHAR	70	Y	Unique identifier for this allocation instruction ack message - generated by MEMX
AllocType	35	1	AllocType	626	Y	As stated on request
AllocTransType	36	1	AllocTransType	71	Y	Identifies allocation transaction type being requested (New, Replace, or Cancel)
RefAllocID	37	20	CHAR	72	C	Required when AllocTransType = Replace, contains the IndividualAllocID of the allocation unit being changed.
AllocCancReplaceReason	57	2	AllocCancReplaceReasonType	796	C	Required when AllocTransType = Cancel
Side	59	1	SideType	54	Y	Side of the Execution
OptionsSecurityID	60	8	CHAR	21035	Y	OptionsSecurityID of the instrument traded
TradeDate	68	8	CHAR	75	Y	YYYYMMDD
NoExecs	-	-	RepeatingGroupDimensions	124	Y	Number of Trades being allocated (always 1)

Field	Offset	Length	Type	Tag Ref Num	Req'd	Description
ExecutionAllocations	-	-	ExecutionAllocationsGroup	N/A	Y	Specifies the Trade being allocated
NoAllocs	-	-	RepeatingGroupDimensions	78	Y	The dimensions of the Allocations Repeating Group.
ReportedAllocations	-	-	ReportAllocationsGroup	N/A	Y	The allocations assigned to the trade - NOTE: this group contains IndividualAlloc IDs for each unit of allocation, used to make further changes on those units.

5.2.12 UserNotification

The UserNotification message is used to notify the user of an event or information about the exchange. This message will be used to provide a logical session shutdown warning.

This message corresponds to FIX message type CB

Field	Offset	Length	Type	Tag Ref Num	Req'd	Meaning
SBE Header	0	7	SBE Header		Y	SBE Header templateID = 29
SendingTime	7	8	UTCTimestampNanos	52	Y	The timestamp when the event occurred.
UserStatus	15	1	UserStatusType	926	Y	Reason for notification.