NYSE Pillar Gateway
Binary
Protocol Specification

NYSE Arca Options

NYSE American Options

March 12, 2024

OPTIONS SPEC VERSION 3.20

PROTOCOL VERSION 1.1

Contents

1. Introduction

This document describes the implementation of the Binary protocol used by the NYSE Group markets via the Pillar Binary Gateway. It includes information pertaining to application communication with the following venues.

Current Market Support	Future Market Support
NYSE Arca Options	NYSE American Options

1.1 About the Pillar Binary Gateway

Pillar Binary Gateway is the application offering a single protocol for firms to transact business with one or more of the NYSE Group markets. It is a component of Pillar, an integrated trading technology platform that has been designed to reduce complexity, while enhancing consistency, performance and resiliency across the NYSE Group markets.

While some of the binary message types contained in this document are specific to particular markets, participants will use the same stream protocol messaging as defined in the NYSE Pillar Stream Protocol Specification. For more information on the Pillar trading platform and gateway rollout, please visit https://www.nyse.com/pillar.

1.2 Session Configuration by Market

Each session on the Pillar Gateway will be configured to access a single NYSE Group market. The market configuration will determine which specific Application Layer Payload message types may be transacted over that session. For details on the applicability of each message type to the various markets, please refer to the Application Layer Payload message formats.

1.3 Failure Recovery

Each session on the Pillar Gateway is assigned two pairs of destination Pillar IP addresses, and one port number used by all four IPs. The IP/Port pairs correspond to the Pillar Primary and DR production environments.

- **Primary Production Environment** – Pillar Binary Gateway users may be simultaneously logged in to both the primary and backup destination IP addresses, but the TG stream may only be open for writing on one destination IP address at any given time.
    - In the event that the primary destination becomes unavailable, the user should attempt to open the TG stream for writing on the secondary IP address. Cancel on Disconnect will be triggered if the outage was caused by a gateway failure or when write permission is removed from the primary IP address, honoring the Cancel on Disconnect configuration for the session.
    - In the event of an intraday session restart, both Primary and Secondary destination IP addresses will be temporarily unavailable.
        - All open orders entered on the affected session will be cancelled, including GTC orders, regardless of the Cancel on Disconnect configuration for the session.
        - Upon restart, additional streams may be available on the affected session:

- Old GT stream(s) – if the session restart was not accompanied by a software release rollback, the GT stream that was active prior to the outage will be available with the old StreamID and recoverable message data. In the event of multiple such intraday session restarts, the number of old GT streams will be equal to the number of restarts that occurred during the day. The old GT stream(s) will be advertised by StreamAvail messages.

- New GT, TG, and REF Streams – will be available with new StreamIDs. Specifically, the “sess_num” of the StreamID will increase, and this value will be equal for all three of these new streams. Compared to any old, recovered GT stream(s) described above, all new streams will have the highest “sess_num.”

  The sequence number on the new TG stream will reset to 1 and the GT and REF streams will follow start of day behavior. The updated sequence number for each stream will be advertised by StreamAvail messages.

- The specific sequence of StreamAvail publication is not guaranteed.

EXAMPLE - two intraday session restarts in succession, without software release rollback.

At start of day, there are three streams available:

- TG (Trader to Gateway)
- GT (Gateway to Trader)
- REF (Reference Data)

Upon first restart, updated sess_num will become available for all three stream types. At this point there will be four streams:

- TG (new - with sess_num increased)
- GT (new - with sess_num increased)
- REF (new - with sess_num increased)
- GT (old - with original sess_num at start of day. This may be opened for replay of old messages published by Pillar before the restart)

Upon a second restart within the same day:

- TG (newest - with sess_num increased again)
- GT (newest - with sess_num increased again)
- REF (newest - with sess_num increased again)
- GT (old - with sess_num following the first restart. This may be opened for replay of old messages published by Pillar after the first restart, but before the second)
- GT (oldest - with original sess_num at start of day. This may be opened for replay of old messages published by Pillar before the first restart.)

- **DR Production Environment** – In the event that the Pillar Primary Production environment becomes unavailable, Pillar Binary Gateway users may log in to the DR IP addresses configured for their sessions.
  - All open orders will be cancelled automatically, regardless of whether the user attempts to log back in or not and regardless of the Cancel on Disconnect configuration for the session.

- StreamIDs will change for each session. The values assigned will have no correlation to the Primary Production Environment StreamIDs, the sequence number on the TG stream will reset to 1, and the GT and REF streams will follow start of day behavior. The updated sequence number for each stream will be advertised by StreamAvail messages.

- Message data from the old streams that were active prior to the outage will not be recoverable.

- For more information, refer to the NYSE Pillar Stream Protocol Specification.

NYSE Pillar Risk Mitigation

In the event a matching engine enters an unexpected state, the Pillar Risk Mitigation process will be triggered.

- Gateway users will receive unsolicited cancels on all live orders on the impacted matching engine, including GTC, MOO, LOO, CUBE with a reason code '168 – Pillar Risk Mitigation'.

- The impacted matching engine will initiate an automatic recovery during which period new orders will be rejected with a reason code '76 – System not available'.

- Once the resumption is complete, users will need to resubmit GTC, MOO, LOO and CUBE orders.

1.4 Contact Us

The NYSE Group Market Support teams have a centralized phone number. Through this number, clients are able to reach all support contacts for Trading, Technical, Market Data and Client Relationship Services.

+1 212-896-2830

Follow the prompts for menu options.

2. Data Types

The following data types are used in Pillar Binary Gateway messages.

Type	Description
i32	32 bit signed Little Endian
i64	64 bit signed Little Endian
u8	8 bit Unsigned Little Endian
u16	16 bit Unsigned Little Endian
u32	32 bit Unsigned Little Endian
u64	64 bit Unsigned Little Endian
char	1 ASCII character
char(xx)	Fixed length string padded on the right with spaces
zchar(xx)	Fixed length string padded on the right with NUL (ASCII 0) characters
Price	Signed Little Endian 64 Bit with Price Scale of 8. Example – 123000000 = $1.23
uPrice	Unsigned Little Endian 64 Bit with Price Scale of 8. Example – 123000000 = $1.23
Timestamp	Unsigned Little Endian 64 bit since UNIX Epoch, in nanoseconds

***Bits/bytes reserved for future use* -** firms should populate all units denoted in this specification as "reserved for future use" with 0.

3. Pillar Message Streams

All inbound and outbound messaging on the Pillar Binary Gateway is conducted over streams. A stream is an append-only messaging sequence.

All messages transacted over Pillar message streams are classified as either Unsequenced or Sequenced.

- **Pillar Stream Protocol** – Unsequenced messages. They are used to manage and interact with Pillar message streams. For detailed information on stream functionality and the related unsequenced message types, please refer to the NYSE Pillar Stream Protocol specification.

- **Application Layer Payload** – Sequenced messages; must carry a sequence number which is incremented with each new message published to a given stream. The sequence number is contained in the data structure "SeqMsg," which must be present on all Application Layer Payload message types.

Both types of messages are transacted over the Pillar stream types shown below. Firms may read and/or write to these streams to the extent that those permissions are available. Availability is advertised via StreamAvail messages. The specific sequence of StreamAvail publication is not guaranteed.

Stream Type	Messaging Direction	Permissions	Description
TG	Inbound	Write	**"Trader to Gateway"** – individualized stream to which a particular firm routes all their Sequenced and Unsequenced messages destined for the Pillar trading platform.
GT	Outbound	Read	**"Gateway to Trader"** – individualized stream to which Pillar publishes outbound Sequenced and Unsequenced messages to a particular firm, including both transactional and Reference Data messages.
REF	Outbound	Read	**"Reference Data" –** individualized stream to which Pillar publishes Symbol, MPV Class, MPV Level, and Session Configuration Acknowledgment reference data.

4. Data Structures

4.1 MsgHeader

User Type: All

Stream Type: All

MsgHeader is a basic structure required in all Pillar Binary Gateway messages. It declares the message type and message length.

Field	Type	Offset	Len	Values
Type	u16	0	2	Message type. See Application Layer Payload message formats
Length	u16	2	2	Total message length, including this header + all message payload/add-ons that follow this header.

4.2 SeqMsgId

User Type: All

Stream Type: All

SeqMsgId serves as the unique identifier of each SeqMsg message. It is made up of a stream identifier and sequence number, the combination of which is globally unique across all firms transacting with the Pillar trading platform, and indefinitely unique across time.

Field	Type	Offset	Len	Values
stream_id	StreamId	0	8	Target stream identifier
Seq	u64	8	8	Message sequence number, starting from 1

4.3 SeqMsg

User Type: All

Stream Type: All

SeqMsg serves as the header for Application Layer Payload messages. As such, it is required at the beginning of each Application Layer Payload message type, and is immediately followed by the Application message itself (e.g., New Order, Execution Report, etc.). The main purpose of this header is to provide all Application messages with a unique sequence number and timestamp.

For the NYSE Options Bulk Quote, which transports from 1 to 20 individual Quote messages, the sequence number will increase by 1 for each Bulk Quote, regardless of the number of individual Quotes contained in the Bulk message. For example, if the sequence number is 10, and a user submits a Bulk Quote containing 10 individual Quote messages, the next sequence number would be 11.

Field	Type	Offset	Len	Values
Msghdr	MsgHeader	0	4	Type: 0x0905 Minimum Length = 32
Seqmsg	SeqMsgId	4	16	Globally unique message identifier
Reserved	u32	20	4	*Reserved field*
Timestamp	Timestamp	24	8	Time of message transmission.

Field	Type	Offset	Len	Values
Payload	MsgHeader	32	4	Message payload. The Application Layer Payload message (New Order, Execution Report, etc.) will begin here with its own MsgHeader

4.4 BitfieldOrderInstructions - Single-leg Options

User Type: Single-leg Options only - All users

Stream Type: TG, GT

BitfieldOrderInstructions is a data structure defining a number of order instructions, attributes, and modifiers.

Field	Offset	Width (Bits)	Values	Arca Options	American Options	Arca Options (Cross)	American Options (Cross)
Reserved	0	34	Bits reserved for future use	Yes	Yes	Yes	Yes
SecurityType	34	5	0 = Not Applicable 1 = OPT 2 = MLEG	1	1	1	1
CustomerOrFirm	39	5	Indicates sender's capacity 0 = Not Applicable 1 = Customer 2 = Options Firm 3 = Options Broker 4 = Options Market Maker 5 = Options Away Market Maker 6 = Prof Customer	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
OpenClose	44	2	Indicates sender's position 0 = Not Applicable 1 = Open 2 = Close	1 2	1 2	1 2	1 2
SubIDIndicator	46	5	When using Pillar Pre-trade Risk Controls and specifying both MPSubID and SelfTradeType on an order, allows the firm to specify whether it should be used for both Risk and STP purposes, or for Risk purposes only. See "Self-Trade Prevention" section of this spec for more details. 0 = use MPSubID for both Pre-Trade Risk Controls and STP (within an MPID)	0	0	0	0

Field	Offset	Width (Bits)	Values	Arca Options	American Options	Arca Options (Cross)	American Options (Cross)
			1 = use MPSubID for Pre-Trade Risk Controls only; STP at MPID level only	1	1		
SpecialOrdType	51	5	0 = No SpecialOrdType 1 = DMM Open/Re-open/Close with or without Auction (AOC) 2 = DMM Pre-auction 3 = DMM After-auction 4 = QCT 5 = Price Improvement CUBE 7 = AON CUBE (Solicitation) 9 = Cabinet 10 = QCC 11 = Customer to Customer Cross **Note:** Both sides of a Cross order must have the same value.	0	0	10 11	5 7 10 11
LocateReqd	56	2	0 = No LocateReqd 1 = LocateReq for SSH orders	0	0	0	0
RetailIndicator	58	5	0 = Not retail 1 = Retail order	0	0	0	0
AttributedQuote	63	5	0 = Not Attributed (equities) / Use current session configuration BOLD setting for the Username (options) 1 = Attributed for Market Data Feeds 2 = Include in Broker Volume 3 = Attributed for Market Data Feeds, and Include in Broker Volume 4 = BOLD - Expose order info only 5 = BOLD - Expose order info and Capacity only 6 = BOLD - Expose order info and Participant ID only 7 = BOLD - Expose order info, Capacity and Participant ID 8 = Do not BOLD	0	0 4 5 6 7 8	0	0
OrderCapacity	68	5	0 = Not Applicable 1 = Agency 2 = Principal 3 = Riskless Principal 4 = Error Account (NYSE Floor Broker only)	0	0	0	0
InterestType	73	5	0 = No InterestType 1 = Options MMQuote 2 = *Reserved for future use*	0	0	0	0

Field	Offset	Width (Bits)	Values	Arca Options	American Options	Arca Options (Cross)	American Options (Cross)
			3 = *Reserved for future use* 4 = Q-Order 5 = Capital Commitment Order (CCO) 6 = Capital Commitment Order (CCO) – partial fill contra-side				
TradingSessionID	78	5	1 = Early Trading Session 2 = Core Trading Session 3 = Late Trading Session 4 = Early & Core Trading Sessions 5 = Core & Late Trading Sessions 6 = Early, Core & Late Trading Sessions **Note**: for symbols trading on NYSE, all values that include Core designation (Core, Early/Core, Core/Late, and Early/Core/Late) will be allowed, if the order type supports the combination on other Pillar markets. However, for each of those values, Pillar will honor the applicable trading sessions included in the instruction based on Tape (B/C symbols - Early and Core; A symbols - Core only), and ignore the other trading sessions specified in the instruction (Tape B/C symbols - Late; Tape A symbols - Early and Late)	 2	 2	 2	 2
TimeInForce	83	5	1 = Day 2 = IOC 3 = At the Opening 4 = On Close 5 = GTX 6 = GTC 7 = FOK	1 2 3 6	1 2 3 5 6	 2	 2
ProactiveIfLocked	88	5	0 = No ProactiveIfLocked 1 = Proactive route 2 = Proactive trade non display (Non-display remove liquidity for non-displayed orders locked by contraside ALOs)	0 1	0 1	0	0
SelfTradeType	93	5	0 = Use current Session Configuration STP setting for the Username* 1 = No Self Trade Prevention 2 = Cancel Newest 3 = Cancel Oldest 4 = Cancel Both 5 = Cancel Decrement	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4

Field	Offset	Width (Bits)	Values	Arca Options	American Options	Arca Options (Cross)	American Options (Cross)
			*If 0 is specified, the explicit value (1-5) configured for the session will be sent back on response messages. **Note**: Value will be ignored for Cross messages				
CancelInsteadOfReprice	98	5	0 = Not Applicable (follow default order behavior) 1 = Cancel order instead of repricing – for LULD only 2 = Cancel if doesn't set NBBO on arrival or if needs to reprice for LULD 3 = Cancel order instead of repricing for any reason 4 = Once resting, allow to reprice once, then cancel instead of repricing 5 = Combination of value 2 and 3 6 = Combination of value 2 and 4	0 3 4	0 3 4	0	0
RoutingInst	103	5	0 = No RoutingInst Minimum fill matches vs aggregate volume both upon arrival AND when resting (must be entered with MinQty tag populated with a non-zero value) 1 = Non-routable 2 = Routable 3 = Directed (Primary Only) 4 = Directed + Routable (PO+S) 5 = Primary Market until 9:45 6 = Primary Market after 3:55 7 = BOTH Primary Market until 9:45 AND Primary Market after 3:55 8 = Minimum Fill (must be entered with MinQty field populated with a non-zero value) 9 = Complex Book Only (non-legging Complex Order)	0 1 2	0 1 2	0	0
ExtendedExecInst	108	5	0 = No ExtendedExecInst 1 = Add Liquidity Only (ALO) 2 = No trade against MPL 3 = No route to IOI 4 = No trade against MPL and no route to IOI 5 = Retail Order Type 1 6 = Retail Order Type 2 7 = Retail Provider 8 = Imbalance Offset 9 = Discretionary Peg 10 = Dark (Non-Displayed) Primary Peg 11 = *Reserved for future use* 12 = *Reserved for future use*	0 8	0 8	0	0

Field	Offset	Width (Bits)	Values	Arca Options	American Options	Arca Options (Cross)	American Options (Cross)
			13 = Add Liquidity Only (Non-taking ALO) 14 = Issuer Direct Offering (IDO) 17 = Complex Order Auction (COA)	13			
ExecInst	113	5	0 = No ExecInst 1 = *Reserved for future use* 2 = *Reserved for future use* 3 = Tracking Order 4 = ISO 5 = Primary Peg 6 = Market Peg 7 = Midpoint Liquidity 8 = Non displayed (Retail Price Improvement and Limit-Non Displayed orders) 9 = Trade-at ISO 10 = Last Sale Peg 11 = *Reserved for future use* 12 = *Reserved for future use* 13 = All-or-None (AON)	0 4	0 4	0	0
OrdType	118	5	1 = Market 2 = Limit 3 = Inside limit 4 = Pegged 5 = Stop 6 = Stop Limit 9 = AutoMatch Limit	1 2 5 6	1 2 5 6	2	1 2 9
Side	123	5	1 = Buy 2 = Sell 3 = Sell short 4 = Sell short exempt 5 = Cross 6 = Cross short 7 = Cross short exempt **Note:** One side of a Cross order must be 'Buy' and the other 'Sell'.	1 2	1 2	1 2	1 2

4.5 BitfieldOrderInstructions - Complex Options

User Type: Complex Options only - All users

Stream Type: TG, GT

BitfieldOrderInstructions is a data structure defining a number of order instructions, attributes, and modifiers.

The below data structure is the same bit field defined above under the section ‘BitfieldOrderInstructions - Single-leg Options’ but listed below with valid values specific to Complex orders.

Field	Offset	Width (Bits)	Values	Arca Options	American Options	Arca Options (Cross)	American Options (Cross)
Reserved	0	34	*Bits reserved for future use*	Yes	Yes	Yes	Yes
SecurityType	34	5	0 = Not Applicable 1 = OPT (Single-leg Option) 2 = MLEG (Complex/Multi-leg Option)	2	2	2	2
CustomerOrFirm	39	5	Indicates sender’s capacity 0 = Not Applicable 1 = Customer 2 = Options Firm 3 = Options Broker 4 = Options Market Maker 5 = Options Away Market Maker 6 = Prof Customer	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
OpenClose	44	2	Indicates sender’s position 0 = Not Applicable 1 = Open 2 = Close	0	0	0	0
SubIDIndicator	46	5	When using Pillar Pre-trade Risk Controls and specifying both MPSubID and SelfTradeType on an order, allows the firm to specify whether it should be used for both Risk and STP purposes, or for Risk purposes only. See “Self-Trade Prevention” section of this spec for more details. 0 = use MPSubID for both Pre-Trade Risk Controls and STP (within an MPID) 1 = use MPSubID for Pre-Trade Risk Controls only; STP at MPID level only	0 1	0 1	0	0
SpecialOrdType	51	5	0 = No SpecialOrdType 1 = DMM Open/Re-open/Close with or without Auction (AOC) 2 = DMM Pre-auction 3 = DMM After-auction 4 = QCT 5 = Price Improvement CUBE	0	0		5

Field	Offset	Width (Bits)	Values	Arca Options	American Options	Arca Options (Cross)	American Options (Cross)
			7 = AON CUBE (Solicitation) 9 = Cabinet 10 = QCC 11 = Customer to Customer Cross **Note:** Both sides of a Cross order must have the same value.			 10 11	7 10 11
LocateReqd	56	2	0 = No LocateReqd 1 = LocateReq for SSH orders	0	0	0	0
RetailIndicator	58	5	0 = Not retail 1 = Retail order	0	0	0	0
AttributedQuote	63	5	0 = Not Attributed (equities) / Use current session configuration BOLD setting for the Username (options) 1 = Attributed for Market Data Feeds 2 = Include in Broker Volume 3 = Attributed for Market Data Feeds, and Include in Broker Volume 4 = BOLD - Expose order info only 5 = BOLD - Expose order info and Capacity only 6 = BOLD - Expose order info and Participant ID only 7 = BOLD - Expose order info, Capacity and Participant ID 8 = Do not BOLD	0	0	0	0
OrderCapacity	68	5	0 = Not Applicable 1 = Agency 2 = Principal 3 = Riskless Principal 4 = Error Account (NYSE Floor Broker only)	0	0	0	0
InterestType	73	5	0 = No InterestType 1 = Options MMQuote 2 = *Reserved for future use* 3 = *Reserved for future use* 4 = Q-Order 5 = Capital Commitment Order (CCO) 6 = Capital Commitment Order (CCO) – partial fill contra-side	0	0	0	0
TradingSessionID	78	5	1 = Early Trading Session 2 = Core Trading Session 3 = Late Trading Session 4 = Early & Core Trading Sessions	2	2	2	2

Field	Offset	Width (Bits)	Values	Arca Options	American Options	Arca Options (Cross)	American Options (Cross)
			5 = Core & Late Trading Sessions 6 = Early, Core & Late Trading Sessions **Note**: for symbols trading on NYSE, all values that include Core designation (Core, Early/Core, Core/Late, and Early/Core/Late) will be allowed, if the order type supports the combination on other Pillar markets. However, for each of those values, Pillar will honor the applicable trading sessions included in the instruction based on Tape (B/C symbols - Early and Core; A symbols - Core only), and ignore the other trading sessions specified in the instruction (Tape B/C symbols - Late; Tape A symbols - Early and Late)				
TimeInForce	83	5	1 = Day 2 = IOC 3 = At the Opening 4 = On Close 5 = GTX 6 = GTC 7 = FOK	1 2 5 6	1 2 5 6	2	2
ProactiveIfLocked	88	5	0 = No ProactiveIfLocked 1 = Proactive route 2 = Proactive trade non display (Non-display remove liquidity for non-displayed orders locked by contraside ALOs)	0	0	0	0
SelfTradeType	93	5	0 = Use current Session Configuration STP setting for the Username* 1 = No Self Trade Prevention 2 = Cancel Newest 3 = Cancel Oldest 4 = Cancel Both 5 = Cancel Decrement *If 0 is specified, the explicit value (1-5) configured for the session will be sent back on response messages. Note: Value will be ignored for Cross messages	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
CancelInsteadOfReprice	98	5	0 = Not Applicable (follow default order behavior) 1 = Cancel order instead of repricing – for LULD only 2 = Cancel if doesn't set NBBO on arrival or if needs to reprice for LULD 3 = Cancel order instead of repricing for any reason	0 3	0 3	0	0

Field	Offset	Width (Bits)	Values	Arca Options	American Options	Arca Options (Cross)	American Options (Cross)
			4 = Once resting, allow to reprice once, then cancel instead of repricing 5 = Combination of value 2 and 3 6 = Combination of value 2 and 4	4	4		
RoutingInst	103	5	0 = No RoutingInst Minimum fill matches vs aggregate volume both upon arrival AND when resting (must be entered with MinQty tag populated with a non-zero value) 1 = Non-routable 2 = Routable 3 = Directed (Primary Only) 4 = Directed + Routable (PO+S) 5 = Primary Market until 9:45 6 = Primary Market after 3:55 7 = BOTH Primary Market until 9:45 AND Primary Market after 3:55 8 = Minimum Fill (must be entered with MinQty field populated with a non-zero value) 9 = Complex Book Only (non-legging Complex Order)	0 9	0 9	0	0
ExtendedExecInst	108	5	0 = No ExtendedExecInst 1 = Add Liquidity Only (ALO) 2 = No trade against MPL 3 = No route to IOI 4 = No trade against MPL and no route to IOI 5 = Retail Order Type 1 6 = Retail Order Type 2 7 = Retail Provider 8 = Imbalance Offset 9 = Discretionary Peg 10 = Dark (Non-Displayed) Primary Peg 11 = *Reserved for future use* 12 = *Reserved for future use* 13 = Add Liquidity Only (Non-taking ALO) 14 = Issuer Direct Offering (IDO) 17 = Complex Order Auction (COA)	0 17	0 17	0	0
ExecInst	113	5	0 = No ExecInst 1 = *Reserved for future use* 2 = *Reserved for future use* 3 = Tracking Order 4 = ISO 5 = Primary Peg 6 = Market Peg	0	0	0	0

Field	Offset	Width (Bits)	Values	Arca Options	American Options	Arca Options (Cross)	American Options (Cross)
			7 = Midpoint Liquidity 8 = Non displayed (Retail Price Improvement and Limit-Non Displayed orders) 9 = Trade-at ISO 10 = Last Sale Peg 11 = *Reserved for future use* 12 = *Reserved for future use* 13 = All-or-None (AON)				
OrdType	118	5	1 = Market 2 = Limit 3 = Inside limit 4 = Pegged 5 = Stop 6 = Stop Limit 9 = AutoMatch Limit	2	2	2	2 9
Side	123	5	1 = Buy 2 = Sell 3 = Sell short 4 = Sell short exempt 5 = Cross 6 = Cross short 7 = Cross short exempt **Note:** One side of a Cross order must be 'Buy' and the other 'Sell'.	1 2	1 2	1 2	1 2

4.6 BitfieldQuoteInst

User Type: Market Maker

Stream Type: TG, GT

BitfieldQuoteInstructions is a data structure defining a number of order instructions, attributes, and modifiers.

Field	Offset	Width (Bits)	Values	Arca Options	American Options
Side	0	2	1 = Buy 2 = Sell	1 2	1 2
MMQuoteType	2	3	0 = Standard 1 = Repricing 2 = Add Liquidity Only (Non-taking ALO) 3 = *Reserved for future use* 4 = Repricing Add Liquidity Only (Non-taking ALO)	0 1 2 4	0 1
Reserved	5	3	*Bits reserved for future use*	Yes	Yes

4.7 BitfieldFlowIndicator

User Type: All

Stream Type: GT

BitfieldFlowIndicator is a data structure defining whether the inbound message was throttled.

Field	Offset	Width (Bits)	Values	Arca Options	American Options
Throttled	0	1	0 = Inbound message was not throttled 1 = Inbound message was throttled	0 1	0 1
Reserved	1	7	*Bits reserved for future use*	Yes	Yes

4.8 OptionalOrderAddOn – Order-sending Firms

User Type: Single-leg and Complex Options - Order-sending Firms

Stream Type: TG, GT

A firm may choose to append this data structures to an Order or Cancel/Replace Request message. A maximum of one OptionalOrderAddOn structure may be sent on a single message.

If included on the order, the Exchange will also include it on certain outbound messages as specified in the "Application Layer Payload Messages" section of this specification.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0249 Length = 47	Yes	Yes
StopPx	Price	4	8	Trigger price for Stop and Stop Limit orders 0.01-9,999.99 ***Note**: Value must be 0 for Complex orders.	Yes*	Yes*
MaxFloor	u32	12	4	0 = No MaxFloor ***Note:** Value must be 0 for Complex orders.	Yes*	Yes*
DeliverToCompID	zchar(5)	16	5	Options MarketMaker MPID for Directed MM Order or Market Maker MPID for PFOF. If there is a default setup and the field is left blank, default will be used. To skip default setup, use "0". Only supported for American Options DOMM and American Options PFOF.		Yes
ClearingFirm	zchar(5)	21	5	Clearing number of CMTA. Numeric characters only, no preceding zeros.	Yes	Yes
OptionalData	zchar(16)	26	16	Clearing Optional Data Customer defined up to 16 characters; only printable ASCII characters allowed, excluding comma, semicolon, pipe delimiter, "at" symbol, greater	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				than/less than, ampersand (&) and single/double quotation mark.		
ClearingAccount	zchar(5)	42	5	OCC number if a non-default value is to be used Numeric characters only, no preceding zeros.	Yes	Yes

5. Reference Data

5.1 Start of Day

User Type: All

Stream Type: REF

A queue of Application Layer Payload messages will be provided as follows.

- **Underlying Symbol reference data**– For each Underlying Symbol with Options series available for trading on a given gateway session, an "Underlying Symbol Reference Data" message will be published. The message contains the numeric SymbolID used by the Exchange to uniquely identify that Underlying Symbol as well as basic information such as ListedMIC, UnderlyingType and LegalWidthMultipler.

- **Series reference data**– For each Options series available for trading on a given Options gateway session, an "Options Series Reference Data" message will also be published. The message contains the numeric SeriesID used by the Exchange to uniquely identify that Options security as well as relevant terms (MaturityDate, StrikePrice, etc.) of the option and the underlying security mapping keys (SymbolID, SymbolName). Instead of the full options symbology (Underlying security + Strike price + Maturity + Call/Put), firms must use the associated (Options series) SymbolID on each message requiring symbology.

To obtain the list of SymbolIDs required for order entry, firm applications will be expected to read request all the queued messages through at least one of their gateway sessions for a given NYSE Group market before they begin sending orders to the Pillar trading platform for that market.

- **For Options Market Maker sessions** – an additional "Options Market Maker Symbol Reference Data" message is published for each of the MM's assigned Underlying securities. Note: this message will not be sent on Risk Admin sessions.

- **Minimum Price Variant reference data** – Pillar will publish various messages that together define the MPVs of the securities available for trading on the given gateway session. The MPV messages are:
    - **Minimum Price Variant Class Reference Data** – a fixed length message that defines an MPV Class by name and identification number, and provides the value of the Retail Price Improvement MPV for that Class.
    - **Minimum Price Variant Level Reference Data** – a variable length message that defines one or more MPV Levels within a single MPV Class. Each level corresponds to a security's price range (e.g. above $3.00 or below $3.00), and has its own MPV value governing limit order entry for securities belonging to that MPV Class and Level.
- **MPID configuration settings** – An instance of the unsolicited "MPID Configuration" message will be published for each MPID configured on an individual gateway session. The message indicates the current status of the MPID – Active, Inactive, or Prospect. The firm may enter Application Layer Payload messages (e.g. Order and Cancel/Replace Requests) for Active MPIDs only.
- **MMID configuration settings** – An instance of the unsolicited "MMID Configuration" message will be published for each MMID configured on an individual gateway session. Note: this message will not be sent on Risk Admin sessions.
- **Session configuration settings** – An unsolicited "User Session Configuration Acknowledgment" message will be published, providing the firm with confirmation of their currently configured (default) settings for an individual gateway session.

Stream Type: GT

- **Risk Control configuration settings** – unsolicited "Session Configuration Acknowledgement" messages will be published to Risk Admin and Market Maker sessions with information regarding current Risk Control configurations carried over from the prior trading day. For details, see the "Session Configuration Acknowledgment" section of this specification.

5.2 Intraday

User Type: All

Stream Type: REF

During the course of a trading day, reference data may be updated as follows:

- **Underlying Symbol/Series additions and changes** – In the event of an intraday underlying symbol/series addition or change, a new "Underlying Symbol Reference Data" or "Series Reference Data" message will be published.

  The most recent reference data message available for a given security on the stream should be read by the firm application, and the old message with earlier sequence number may be disregarded.

- **For NYSE Options Market Maker sessions** – if there is an update to an MMID's underlying symbol appointments, an "Options Market Maker Symbol Appointment Reference Data" message will be published to the sessions of the assigned MM. Note: this message will not be sent on Risk Admin sessions.

- **MPID additions and status changes** – In the event that a new MPID is added intraday or an existing MPID is made active/inactive, a new "MPID Configuration" message will be published to all the gateway sessions configured to use that MPID. The message will indicate latest status.

- **MMID additions** – In the event that a new MMID is added intraday, a new "MMID Configuration" message will be published to all the gateway session configured to use that MMID. Note: this message will not be sent on Risk Admin sessions.

- **Requesting changes to session configuration settings** – Firms may request a change in certain subscription-based settings for an individual gateway session by sending a "Session Configuration Request" message via the "Trader to Gateway" (TG) stream.

  Pillar Binary Gateway will respond by publishing a new "Session Configuration Acknowledgment" message reflecting the updated settings.

  Session configuration changes made by NYSE Group staff on behalf of the firm will also produce these acknowledgment messages to the gateway.

Stream Type: GT

- **Risk Control configuration settings** – Risk Users may make intraday changes to Risk Control configurations via the NYSE Pillar Binary Gateway or NYSE Trade Ops Portal user interface. As a result, solicited and unsolicited "Session Configuration Acknowledgement" messages will be published to Risk Admin sessions with the updated configuration details. For details, see the "Session Configuration Acknowledgment" section of this specification.

5.3 Mapping Orders and Executions to Pillar Market Data

User Type: All

Stream Type: GT

The NYSE Pillar Binary Gateway provides order and deal identifiers as unique 8-byte integers in the following outgoing message types.

Gateway Message Type	Field(s) for Mapping
Order Acknowledgement	OrderID
Order Modify/Cancel Request Acknowledgment	OrderID
Order Priority Update Acknowledgement	OrderID
Execution Report	OrderID, DealID
Trade Bust/Correct	OrderID, DealID

To correlate the OrderID and TradeID values provided in the Pillar FIX Gateway with Pillar Market Data:

- The full 8 bytes of the gateway "OrderID" correspond to the 'OrderID' field in Pillar Market Data.
- Bytes 5 through 8 of the gateway "DealID" correspond to the 'TradeID' field in Pillar Market Data.
  - In all feeds, the MarketID and SystemID are provided in the Symbol Index Mapping, and these values are static for the trading day.
  - The table below shows the data structure of the 8-byte DealID value provided in the Pillar FIX Gateway as it maps to Pillar Market Data. This table assumes the client byte ordering is Little Endian. If the client byte ordering is Big Endian, the byte order is reversed.

Pillar Market Data Field Name	Offset	Size (Bytes)	Format	Description
Reserved	0	1	Binary	0
SystemID	1	1	Binary	Unique ID of the originating Pillar symbol partition. This value is found in the Symbol Index Mapping message's ID field
MarketID	2	2	Binary	ID of the Originating market in the Symbol Index Mapping
TradeID	4	4	Binary	Public TradeID as it will appear in Pillar Market Data products

For more information, please refer to the Pillar Market Data Common Client Specification at https://www.nyse.com/market-data/real-time.

6. Trading Services

6.1 Self-Trade Prevention

User Type: All

Stream Type: TG

NYSE Group offers a Self-Trade Prevention (STP) service. This service is designed to allow firms to better manage their order/quote flow and prevent unintended executions with themselves.

STP Firm Identifier - STP may be enforced using one of two alternative firm identifiers:

- **MPID based STP** - two orders/quotes with the same MPID + MPSubID (optional sub identifier) will be prevented from trading with each other.
- **ClientID based STP** - two orders/quotes with the same ClientID, an identifier registered with the Exchange, will be prevented from trading with each other regardless of whether the MPIDs are same or different. Firms may opt in to using the ClientID STP functionality by requesting it as a session level default on order entry gateway sessions that have one MPID assigned. The default will NOT be echoed back on order or bulk quote acknowledgements via binary gateway. To request this functionality, please contact Client Relationship Services at CRS@nyse.com.

- The above identifiers are mutually exclusive. An order/quote with a ClientID will always be allowed to trade with an order/quote that does not have a ClientID, even if they are from the same MPID.

STP Types:

- **STP Cancel Newest –** An incoming order/quote marked with this designation will not execute against opposite side resting interest that is marked with any of the STP Types. Instead, the incoming or repriced order/quote will be automatically cancelled back to the originator. The resting order/quote remains on the order book.

- **STP Cancel Oldest –** An incoming order/quote marked with this designation will not execute against opposite side resting interest that is also marked with any of the STP Types. Instead, the resting orders/quotes will be automatically cancelled back to the originator. The incoming order/quote will then continue to auto execute or be placed on the order book.

- **STP Cancel Both –** An incoming order/quote marked with this designation will not execute against opposite side resting interest that is also marked with any of the STP Types. Instead, both the incoming and the resting order/quote will be cancelled back automatically.

6.2 Message Throttling

User Type: All

Stream Type: TG

Messages from the member firm to Pillar are read at a rate of 500 messages per rolling 100 milliseconds. The message read rate includes all applicable Stream and Application Layer Payload message types.

- **Risk Limit Update Request message** - is weighted such that it counts toward the throttle calculation as follows:

  - **Bulk update to Activity-based Rolling Transaction/Volume/Percentage limit across all underlying symbols (SymbolID field null)** - counts as 5,000 messages, or a maximum of one per second. The session that entered the request to be throttled for one second for all subsequent message.

  - **All other Risk Limit Update Requests** - each request counts as 50 messages, or a maximum of 10 per 100 milliseconds.

- **New Bulk Quote message** - is counted as a single message regardless of the number of individual quotes inside it. For example, a bulk message with 5 quotes will count as 1 message towards the throttle calculation.

A session becomes throttled when the message count reaches a value of 500 during the time window. A session becomes un-throttled when there are no messages to read from the firm.

Firms must define on session login how Pillar Gateway should handle a throttled message once it is read:

1. **Queue and Process** – Throttled messages will be queued and processed in time sequence as the message read rate allows

2. **Queue and Reject** – Throttled messages will be queued and rejected as the message read rate allows

- New Order, Risk Limit Update Request, and Risk Action Request messages will be rejected <78 – Throttle Reject >
- Cancel, Modify and Bulk Cancel messages will be processed as if queued
- Cancel portions of Cancel/Replace messages will be processed as if queued. The Exchange will send the following response messages:
    - Cancel/Replace Reject with <78 – Throttle Reject>
    - UROUT for the cancelled order with BitfieldFlowIndicator, "Throttled" bit set to '1' (Inbound Message was Throttled)
    - New Bulk Quotes will be treated as cancel/replaces. A Bulk Quote Ack will be sent with <78 – Throttle Reject>, and the same side of the quote(s) from the same session will be cancelled with UROUTs for each cancelled quote
- Outbound messages will not be throttled and will be processed without impact to processing of inbound messages

6.3 Denial of Service Restrictions

Pillar maintains a running counter of log in attempts and session level rejects on a per SenderCompID/Target IP address basis over the course of a trading day. If either of the counters reaches 100, the SenderCompID/Target IP will go into Denial of Service Mode. Upon entering this mode Pillar will:

- Reset counters for the SenderCompID/Target IP to zero
- Cancel orders based on customer cancel on disconnect settings for the SenderCompID
- Disconnect the SenderCompID and refuse connection attempts to that specific TargetIP for 60 seconds

6.4 FIX Drop Copies

User Type: N/A - FIX only

Stream Type: N/A - FIX only

Drop copies of order activity transacted over the Pillar Binary Gateway are available via a separate FIX gateway interface. When ordering new FIX drop copy sessions, recipients may choose from the following configuration options.

- **Market Participant Filters** – receive drop copies of activity filtered by one of the following criteria:
    - SenderCompID(s) – a single or multiple order entry session SenderCompIDs
    - MPID(s) – a single or multiple MPIDs
    - Clearing Number - default clearing number for MPID or specified ClearingAccount (FIX-440) give-up (NYSE Arca & American Options), plus specified ClearingFirm (FIX-439) CMTA (Options markets only) for CMTA values known by the Exchange.

        Note: on a given execution, if ClearingAccount (FIX-440) and ClearingFirm (FIX-439) FIX tags are specified with different clearing numbers that map to the same clearing firm, a separate drop copy message will be generated for each value. If a single drop copy session is configured for both clearing numbers, both messages will go to that session. The combination of DealID (9483) + Side (54) may be used to compare such messages.

  - MMID(s) - a single or multiple MMIDs

- **Order Activity Filters** – receive drop copies of outbound messages for either:
  - **All order activity** – all Execution Reports (MsgType = 8) regardless of OrdStatus, and all Order Cancel Rejects (MsgType = 9)
  - **Fills and Partial Fills only** – only Execution Reports (MsgType = 8) with OrdStatus = 1 (Partially Filled) and 2 (Filled)

  Note - for Options Market Maker Quotes (NYSE Arca and American Options), only Fills and Partial Fills are available via drop copy, regardless of the filter selected above

FIX drop copy messages may be mapped to Pillar Binary Gateway messages delivered on GT Streams as follows:

- **ClOrdID (11)** = binary 'ClOrdID' represented in decimal/base 10 string format.
- **OrigClOrdID (41)** = binary 'OrigClOrdID' represented in decimal/base 10 string format.
- **ExecID (17)** = binary SeqMsgId ('seqmsg' field) converted to hexadecimal/base 16 string format, excluding leading zeros.
- **ExecRefID (19)** = binary 'RefSeqMsgID' converted to hexadecimal/base 16 string format (for Trade Bust/Correct only), excluding leading zeros.
- **SenderSubID (50)** = binary 'username' field from the Pillar Stream Protocol Login/Login Response messages. This represents the unique identifier (SenderCompID) of the originating binary order entry session.
- **TargetSubID (57)** = binary 'MarketMaker' field
- **OnBehalfOfCompID (115)** = binary 'DeliverToCompID'.
- **DeliverToCompID (128)** = binary 'MPID'.
- **OnBehalfOfSubID (116)** = binary 'MPSubID'.
- **Account (1)** = binary 'UserData'.
- **Options Market Maker Fills/Partial Fills for Bulk Quote** - the binary 'MMQuoteType' will be translated to FIX as follows:
  - OrdType (40) = 2 (Limit)
  - TimeInForce (59) = 0 (Day)
  - RoutingInst (9303) = N (Non-routable)
  - InterestType (9478) = 1 (Options Market Maker Quote)
  - ExtendedExecInst (9416) - corresponding to the MMQuoteType
    - N (Add Liquidity Only - Non-taking ALO)

        - Not specified
    - CancelInsteadOfReprice (20003) - corresponding to the MMQuoteType
        - 0 (Not applicable - follow default order behavior) - tag will be excluded from the message
        - 3 (Cancel order instead of repricing for any reason)

NYSE Arca/American Options - Post Trade Adjustment Messaging

Below table outlines the messages sent back on the Order Entry session and Drop Copy session as a result of various post trade adjustment events.

<table>
<tr><th colspan="2"></th><th>Trade Cancel (Bust)</th><th>Trade Correction</th><th>Trade Re-add</th><th>Contractual Trade Split (Outcry only)</th><th>All Other Post Trade Adjustments (TOP)</th></tr>
<tr><td rowspan="2">Trade Date</td><td>Order Entry Session</td><td>Yes [E]</td><td>Yes [E]</td><td>Yes [E]</td><td>Yes [E]</td><td>No</td></tr>
<tr><td>Drop Copy Session</td><td>Yes [E, A]</td><td>Yes [E, A]</td><td>Yes [E, A]</td><td>Yes [E, A]</td><td>Yes [A]</td></tr>
<tr><td rowspan="2">T+N</td><td>Order Entry Session</td><td>No</td><td>No</td><td>No</td><td>No</td><td>No</td></tr>
<tr><td>Drop Copy Session</td><td>Yes [A]</td><td>Yes [A]</td><td>Yes [A]</td><td>Yes [A]</td><td>Yes [A]</td></tr>
</table>

E - applies exclusively to execution messages
E, A - applies to execution and allocation messages
A - applies exclusively to allocation messages

6.5 GTC Restatement Messages

User Type: All users

Stream Type: GT

NYSE Arca Options and NYSE American Options provide unsolicited messages for prior day Good Till Cancel (GTC) orders over the GT stream of the session that originally entered the order.

- **GTC Loading** - a GTC Restatement Ack, identified with AckType = 17 (GTC Renewal / Restatement), is published for each prior day GTC order as it loaded for the day. In the event a prior day GTC order is canceled overnight due to underlying corporate action, delisting, etc. an unsolicited order reject will be published.

- **Done for Day** - at the market's Done for Day time, a Done for Day message (AckType = 12 with ReasonCode = 104: Done for Day) will be sent for each GTC order with remaining leaves quantity.

- **Series Expiration** - at the market's Done for Day time, an unsolicited cancel message (AckType = 11 with ReasonCode = 246: Series Expired) will be sent for each GTC order cancelled due to series expiration.

6.6 Options Market Maker Sessions

User Type: Market Maker

Stream Type: TG

- To quote in appointed symbols, market maker firms must establish one or more sessions configured as user type "Options Market Maker."

- **New Bulk Quote messages** - are exclusively available on these sessions, and will be rejected on sessions configured as any other user type (Customer, Service Bureau, etc.)

- **Market Maker orders** - may also be entered on Options Market Maker sessions, and must be designated with CustomerOrFirm = 4 (Options Market Maker). Orders designated with any other CustomerOrFirm value will be rejected.

  Alternatively, sessions configured as Customer or Service Bureau may be used to enter orders of all CustomerOrFirm designations, including Market Maker. See below for details regarding MPID/MMID assignment.

- **MMID required** - on all messages entered via these sessions. The combination of MPID + MMID (MarketMaker field) specified on the message must be valid and configured for use on the individual session.

6.7 Risk Controls

User Type: Risk Admin and Market Maker

Stream Type: TG

For Entering Firms and Market Makers using Pillar Risk Controls, the following message types are available via a dedicated Risk Admin session type (does not support order entry). In addition, Market Makers will receive risk acks/alerts on all their quote entry sessions and may send risk messages via any of those sessions.

These messages are implemented in binary protocol only, but Risk Control functionality applies to both FIX and Binary order flow mapping to the Risk Entities for which risk limits are configured.

- Risk Limit Update Request
- Risk Action Request
- Risk Control Acknowledgement
- Risk Control Alert

The firm may send Risk Limit Update Requests and Risk Action Requests (to query/update limits, reinstate, take kill switch action, etc.) and will receive Risk Control Acknowledgements and Alerts only for the specific MPIDs configured for use on the session, and for the MMIDs and SubIDs associated with those MPIDs.

7. Member Firm to Pillar - Application Layer Payload Messages

7.1 Session Configuration Request

User Type: All

Stream Type: TG

This message may be sent by the firm to change their configuration settings for a given gateway session, as defined by its Username. If accepted by the gateway, the updated settings will be applied on a go forward basis only. For example, a change in the SelfTradePrevention setting will be applied to future Order and Cancel/Replace Requests sent after the request is accepted, but will not be applied to open orders entered before the request was sent. Changes will be persisted for the life of the StreamID (that is, for the length of the trading day or until the next time Pillar restarts).

For NYSE Options Market Maker sessions - CancelOnDisconnect value 2 applies automatically and may not be changed.

In the future, additional fields may be added to the end of the message to support other configurations, using the "reserved" bytes shown below. Firms should be prepared to accept and process significant values in the reserved bytes.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0220 Length = 74	Yes	Yes
Username	char(16)	4	16	Unique identifier of the gateway session – SenderCompID.	Yes	Yes
CancelOnDisconnect	u8	20	1	1 = Enable Cancel on Disconnect; Cancel – Day; (This will cancel all orders for the Session EXCEPT– TIF = At the Opening, GTX, and Good Till Cancel)* 2 = Enable Cancel on Disconnect. Cancel – ALL orders for the Session* *Exclusions – The following orders are always excluded from cancellation during a Cancel on Disconnect event: - Immediate or Cancel (IOC) orders (for NYSE Arca & American Options, this covers all Cross Orders - CUBE, QCC, Customer to Customer) - NYSE Arca & American Options - GTC, Fill or Kill (FOK), and Open Outcry orders **Note**: the firm may only "upgrade" the Cancel on Disconnect subscription setting through the gateway Session Configuration Request. That is, if Cancel on Disconnect is Disabled by default, the request message can be used to Enable it (setting = 1 or 2). Or, if the default configuration value = 1, the request message can be used to set the configuration = 2. A change in configuration from 2 to 1 is not allowed through the request message, nor is Disabling Cancel on Disconnect. To make these changes, the firm must contact NYSE Group Market Support.	1 2	1 2

Field	Type	Offset	Len	Values	Arca Options	American Options
ThrottlePreference	u8	21	1	0 = Queue orders when throttled 1 = Reject orders when throttled	0 1	0 1
SelfTradePrevention	u8	22	1	Session level default for the STP value on all Order and Cancel/Replace requests entered on the session. **Note:** if the STP value is set on an individual Order or Cancel/Replace Request, that value will override this session level default. 1 = No Self Trade Prevention 2 = Cancel Newest 3 = Cancel Oldest 4 = Cancel Both 5 = Cancel Decrement	 1 2 3 4	 1 2 3 4
OrderPriorityUpdate AckSubscription	u8	23	1	0 = Not subscribed to receive the unsolicited "Order Priority Update Ack" message or unsolicited "Repricing Ack" message on the Session. 1 = Receive unsolicited "Order Priority Update Ack" message on the Session (for Reserve Order replenishment) 2 = Receive unsolicited "Order Priority Update Ack" message AND unsolicited "Repricing Ack" message on the Session.	0 1 2	0 1 2
BOLDDesignation	u8	24	1	**NYSE American Options -** Session level default for the BOLD setting on all Order and Cancel/Replace requests entered on the session. **Note:** if the BOLD value is set on an individual Order or Cancel/Replace Request, that value will override this session level default. 0 = Not Applicable/Do Not Change my Default 4 = BOLD - Expose order info only 5 = BOLD - Expose order info and Capacity only 6 = BOLD - Expose order info and Participant ID only 7 = BOLD - Expose order info, Capacity and Participant ID 8 = No BOLDDesignation defaulting	0	0 4 5 6 7 8

Field	Type	Offset	Len	Values	Arca Options	American Options
				For all other markets - this field will be treated as filler. Any value specified will not be processed		
Reserved	zchar(49)	25	49	*Bytes reserved for future use*		

7.2 Sequenced Filler Message

User Type: All

Stream Type: TG

This message type is used to increase the next expected sequence number of a TG stream by 1 on a given gateway session. An acknowledgment will not be sent for this message, which otherwise has no business meaning. The format consists only of an Application Layer Payload MsgHeader with a unique value for the 'Type' field. Once accepted and processed by the Pillar Binary Gateway, the updated value of the next expected sequence number will be reflected on the next StreamAvail message published to the TG Stream.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0282 Length = 4	Yes	Yes

7.3 New Order Single/Complex and Cancel/Replace Request

User Type: Single-leg and Complex Options - All users

Stream Type: TG

This message type is used as both a New Order message or a Cancel/Replacement message, as well as in conjunction with the New Order Cross message.

- **New Order** – Set the field 'OrigClOrdID' to zero (0).

- **Cancel/Replace Request** – Populate the field 'OrigClOrdID' with the ClOrdID of the order intended for replacement. The Cancel/Replace message is used to make changes to an order without preserving its ranking in the Exchange order book. The replacement order will get a new ClOrdID (equal to the ClOrdID of the Cancel/Replace Request), a new Timestamp, and a new OrderID. The following fields must be populated with the same values that were sent on the original order intended for replacement:
  - **MPID**
  - **MarketMaker**

Data Structures used in this Message:

- **BitfieldOrderInstructions** – This message includes a bitfield containing a number of order instructions. See the "Data Structures" section at the beginning of this specification for a definition of the positions and valid values of each bit.

- **OptionalOrderAddOn/OptionalSettlementTypeAddon** – This message is variable length, allowing the firm to send one optional add-on at the end of the message to make use of additional order attributes and modifiers. See the "Data Structures" section at the beginning of this specification for the field formats and valid values of the available add-ons.

***Note:** Order Modifier Deferral: All-Or-None ("AON"), Fill-or-Kill ("FOK"), Minimum Trade Size ("MTS") and Minimum Fill order modifiers have been deferred from the initial migration.*

Field	Type	Offset	Len	Values	Arca Options	American Options	Arca Options (Cross)	American Options (Cross)
Msghdr	MsgHeader	0	4	Type = 0x0248 Minimum Length = 100	Yes	Yes	Yes	Yes
SymbolID	u32	4	4	Identification number assigned to the security **Note:** Both sides of a Cross order must have the same value.	Yes	Yes	Yes	Yes
MPID	zchar(4)	8	4	Firm Identifier – MPID.	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options	Arca Options (Cross)	American Options (Cross)
				On Cancel/Replace request, must match the MPID of the order intended for replacement.				
MarketMaker	zchar(10)	12	10	This value represents a Market Maker (including LMM, Primary Specialist, Specialist and e-Specialist), agreed upon between the firm and the Exchange. These firms must provide their MMID along with its associated MPID on all orders intended to receive credit for satisfying their market making/liquidity obligations. This field must be specified when CustomerOrFirm is identified as Market Maker or Away Market Maker and will be rejected if populated for any other CustomerOrFirm value.	Yes	Yes	Yes	Yes
MPSubID	zchar(4)	22	4	Customer defined – identifies specific entity/trading desk of customer firm.	Yes	Yes	Yes	Yes
ClOrdID	u64	26	8	Unique ID of the message as assigned by the firm. Pillar will validate that the ClOrdID is unique for the combination of Username + MPID that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID. Customer defined. **Note:** For Complex orders, firms must specify one ClOrdID value for the entire Complex order.	Yes	Yes	Yes	Yes
OrigClOrdID	u64	34	8	Refers to the ClOrdID of a previously entered order. 0 = no OrigClOrdID	Yes	Yes	0	0
BitfieldOrderInstructions	BitfieldOrderInstructions (u128)	42	16	Bitfield containing various order attributes and modifiers. See data structure definition table for the positions and valid values of each bit.	Yes	Yes	Yes	Yes
Price	Price	58	8	0.01 - 9,999.99 **Note**: For Complex orders - • -214,748.36 - 214,748.36	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options	Arca Options (Cross)	American Options (Cross)
				• Net Limit price of the order - can be positive, negative or zero. A positive Sell price indicates the Seller is proposing to receive money for the order; a negative Sell price indicates that the Seller is proposing to pay money for the order. A positive Buy price indicates the Buyer is proposing to pay money; a negative Buy price indicates the Buyer is proposing to receive money. Zero is even. • Maximum of 2 decimal places.				
OrderQty	u32	66	4	1 - 999,999 **Note:** Both sides of a Cross order must have the same value.	Yes	Yes	Yes	Yes
MinQty	u32	70	4	0 = no MinQty Otherwise, Must be ≤ OrderQty **Note:** Value must be 0 for Complex orders.	0	0	0	0
UserData	zchar(10)	74	10	Customer defined up to 10 characters; only printable ASCII characters allowed, excluding comma, semicolon, pipe delimiter, "at" symbol, greater than/less than, ampersand (&) and single/double quotation mark.	Yes	Yes	Yes	Yes
LegOpenClose	u64	84	8	Indicates sender's position of each leg of a Complex order. 0 = Open (N/A for Single-leg Options and Equities) 1 = Close Although this Bitfield can hold up to 64 legs, a maximum of 12 legs are supported. Complex order messages with less than 2 or more than 12 legs will be rejected. Only those bits corresponding to the number of legs in the complex series may be populated with a value of 1, else the order will be rejected. E.g.: A 10-legged Complex order with the first two legs open, next three legs closed, next four legs open and the last leg close must have the following *LegOpenClose* value:	0 1	0 1	0 1	0 1

Field	Type	Offset	Len	Values	Arca Options	American Options	Arca Options (Cross)	American Options (Cross)
				00000000 00000000 00000000 00000000 00000000 00000000 00000010 00011100 This field only applies to Complex orders. LegOpenClose values must be provided in the order corresponding to the sequencing of the component legs, which is lowest LegSymbolID to highest LegSymbolID, and can be obtained via the Complex Series Request Acknowledgment or Pillar Market Data Complex Series Mapping. Value must be 0 for all non-complex (single-leg option) orders, else will be rejected.				
AuctionID	u64	92	8	CUBE Auction identifier supplied by Pillar Market Data to allow GTX responses to target specific CUBE auctions. If provided on non-GTX responses, the order will be rejected. 0 = no AuctionID	0	Yes	0	0
OptionalOrderAddOn		100	4	Data structure - optional add-on structure may be appended to the Order message to make use of additional functionality. If present, add-on always begins with the 4 byte 'msghdr' field. See data structure definition table for the positions and valid values of each bit.	Yes	Yes	0	0

7.4 Order Cancel Request

User Type: Single-leg and Complex Options - All users

Stream Type: TG

This message is used to cancel a single targeted order including complex orders.

For Complex orders, the request must be entered with the OrigClOrdID of the complex order (no leg level details), and will cancel the entire order along with all of its legs.

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

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0250 Length = 28	Yes	Yes
SymbolID	u32	4	4	Identification number assigned to the security	Yes	Yes
MPID	zchar(4)	8	4	Firm Identifier – MPID. Must match the MPID of the order intended for cancellation.	Yes	Yes
ClOrdID	u64	12	8	Unique ID of the message as assigned by the firm. Pillar will validate that the ClOrdID is unique for the combination of Username + MPID that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID. Customer defined.	Yes	Yes
OrigClOrdID	u64	20	8	Refers to the ClOrdID of a previously entered order.	Yes	Yes

7.5 Order Modify Request

User Type: Single-leg and Complex Options - All users

Stream Type: TG

This message is used to reduce order quantity while preserving the order's ranking in the Exchange order book as well as its original OrderID.

The modified order, however, will get a new ClOrdID (equal to the ClOrdID of the Modify Request).

Note: Reducing the total quantity to 0 will cancel the order.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0251 Length =34	Yes	Yes
SymbolID	u32	4	4	Identification number assigned to the security.	Yes	Yes
MPID	zchar(4)	8	4	Firm Identifier – MPID. Must match the MPID of the order intended for modification.	Yes	Yes
ClOrdID	u64	12	8	Unique ID of the message as assigned by the firm. Pillar will validate that the ClOrdID is unique for the combination of Username + MPID that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID. Customer defined.	Yes	Yes
OrigClOrdID	u64	20	8	Refers to the ClOrdID of a previously entered order.	Yes	Yes
OrderQty	u32	28	4	1 - 999,999 New desired order quantity. Note: Only a reduction in quantity is allowed via the Modify Request.	Yes	Yes
Side	u8	32	1	0 = no change in Side 1= buy 2 = sell 3 = sell short 4 = sell short exempt 5 = cross 6 = cross short 7 = cross short exempt	0	0
LocateReqd	u8	33	1	0 = No LocateReqd, or Not Applicable 1 = LocateReq for SSH orders	0	0

7.6 New Bulk Quote

User Type: Market Maker

Stream Type: TG

This message may be sent by an Options Market Maker to enter up to 20 Quote messages at once. The Quote messages must all be for the same Underlying security and there can only be one Quote message per Series/Side. Each Quote message within the packet is single sided. The packet is composed of a header section, followed by a minimum of one and up to 20 repeating groups.

Quote uniqueness is per session + MMID (MarketMaker field) + series + side. To quote multiple price levels of depth, use multiple MMIDs on the same session or use the same MMID across multiple sessions.

Note: in scenarios where Pillar rejects the entire New Bulk Quote message with an Application Layer Reject message, the "SymbolID" field of the reject message will be populated with the *underlying* symbol identifier.

Field	Type	Offset	Len	Values	Options Market Maker
Msghdr	MsgHeader	0	4	Type = 0x0243 Minimum Length = 60	Yes
MPID	zchar(4)	4	4	MPID linked to the MMID (MarketMaker field)	Yes
MarketMaker	zchar(10)	8	10	This value represents a Market Maker (including LMM, Primary Specialist, Specialist and e-Specialist), agreed upon between the firm and the Exchange.. This field must be specified on New Bulk Quote.	Yes
SubID	zchar(4)	18	4	Customer defined – Applies to all Quote messages in repeating group. Used for STP only	Yes
ClOrdID	u64	22	8	A client-assigned ID for this bulk quote message. This ID combined with the MPID, MMID (MarketMaker field), series index and side is a unique mapping for individual one-sided quotes.	Yes
SelfTradeType	u8	30	1	Applies to all Quote messages in repeating group. 0 = Use current Session Configuration STP setting for the Username* 1 = No Self Trade Prevention 2 = Cancel Newest 3 = Cancel Oldest 4 = Cancel Both 5 = Cancel Decrement *If 0 is specified, the explicit value (1-5) configured for the session will be sent back on response messages.	 0 1 2 3 4
GroupID	u32	31	4	User-defined takedown group. Applies to all Quote messages in repeating group.	Yes

Field	Type	Offset	Len	Values	Options Market Maker
MMSentTime	Timestamp	35	8	Customer provided sending time. CAT compliance Number of nanoseconds since Epoch. MMSentTime must be specified on New Bulk Quote.	Yes
→ Repeating group					
→ SeriesIndex	u32	43	4	Identification number assigned to the Options series.	Yes
→ BitFieldQuoteInst	u8	47	1	Bitfield (containing Side and Type)	Yes
→ Price	Price	48	8	0.00 - 9,999.99	Yes
→ OrderQty	u32	56	4	0 - 999,999	Yes

7.7 New Order Cross

User Type: Single-leg and Complex Options - All users

Stream Type: TG

This message can be used to enter cross orders.

Field	Type	Offset	Len	Values	Arca Options (Cross)	American Options (Cross)
Msghdr	MsgHeader	0	4	Type = 0x0222 Minimum Length = 249	Yes	Yes
CrossID	u64	4	8	Unique ID of the Cross as assigned by the firm. Pillar will validate that the CrossID is unique for the combination of SenderCompID + OnBehalfOfCompID (MPID) that entered the order, among open orders only. However, the firm is responsible for ensuring that the CrossID provided is unique among all orders sent for the full length of the trading day by the given SenderCompID + MPID.	Yes	Yes
AllocationPct	u8	12	1	Percentage of allocation a single stop price Covered order is willing to surrender. Valid values are 0 to 100.	0	Yes

Field	**Type**	**Offset**	**Len**	**Values**	**Arca Options (Cross)**	**American Options (Cross)**
				If the value provided results in a greater than standard allocation, then the max allowable quantity will be allocated. Must be set to 0 for QCC, Customer to Customer and CUBE orders defined as AutoMatch (market or limit) or AON.		
ClearingFirmExposed	zchar(5)	13	5	Clearing number of CMTA of the Exposed side of the Cross order. For CUBEs, this is the CUBE order.	Yes	Yes
ClearingAccountExposed	zchar(5)	18	5	OCC number of the Exposed side of the Cross order if a non-default value is to be used. For CUBEs, this is the CUBE order. Numeric characters only, no preceding zeros.	Yes	Yes
OptionalDataExposed	zchar(16)	23	16	Clearing Optional Data Customer defined up to 16 characters; only printable ASCII characters allowed, excluding comma, semicolon, pipe delimiter, "at" symbol, greater than/less than, ampersand (&) and single/double quotation mark.	Yes	Yes
ClearingFirmCovered	zchar(5)	39	5	Clearing number of CMTA of the Covered side of the Cross order. For CUBEs, this is the CUBE Contra order.	Yes	Yes
ClearingAccountCovered	zchar(5)	44	5	OCC number of the Covered side of the Cross order if a non-default value is to be used. For CUBEs, this is the CUBE Contra order. Numeric characters only, no preceding zeros.	Yes	Yes
OptionalDataCovered	zchar(16)	49	16	Clearing Optional Data Customer defined up to 16 characters; only printable ASCII characters allowed, excluding comma, semicolon, pipe delimiter, "at" symbol, greater than/less than, ampersand (&) and single/double quotation mark.	Yes	Yes
Reserved	Char(16)	65	16	*Bytes reserved for future use*	Yes	Yes
Exposed	New Order Message (7.3)	81	100	Exposed side of the Cross order. For CUBEs, this is the CUBE order.	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options (Cross)	American Options (Cross)
Covered	New Order Message (7.3)	181	100	Covered side of the Cross order. For CUBEs, this is the CUBE Contra order.	Yes	Yes

7.8 Bulk Cancel Request

User Type: Single-leg and Complex Options - All users

Stream Type: TG

Bulk Cancel actions

This message is used to bulk cancel multiple orders/Market Maker Quotes based on the combination of criteria specified in the message.

As with all Application Layer Payload messages, the 'MPID' field on the Bulk Cancel Request must be populated with a valid MPID configured for use on that session.

Separate capabilities are defined for local market makers using an Options Market Maker session vs. all other sessions (Customer, Service Bureau, etc.)

- **Options Market Maker sessions** - bulk cancel will apply to Market Maker Quotes and to orders designated with CustomerOrFirm = Market Maker only. Requests must specify an MPID, and may or may not specify an MMID (MarketMaker field). If an MMID is specified, the action will apply to that single MMID.

- **All other sessions** - bulk cancel will apply to orders designated with CustomerOrFirm = Customer, Firm, Broker, Away Market Maker, and Professional Customer only. Requests must specify a valid MPID, and must NOT specify an MMID (MarketMaker field).

At least one of the **TargetCancelUsername** or **TargetCancelMPID** fields must be populated, and determine the cancellation scope as follows:

TargetCancelUsername	TargetCancelMPID	Result
Populated	<blank>	**"Synthetic Cancel on Disconnect"** - cancel all MPIDs for the TargetCancelUsername (must match the Username of the session sending this Bulk Cancel Request), without disconnecting.
<blank>	**Populated**	**Market Wide MPID Cancel** - cancel the TargetCancelMPID (must be a valid MPID entitled for use on the session sending this Bulk Cancel Request) - across ALL Usernames on the given market.

Populated	**Populated**	Cancel combination of **TargetCancelUsername** (must match the Username of the session sending this Bulk Cancel Request) **+ TargetCancelMPID** (must be a valid MPID entitled for use on the session sending this Bulk Cancel Request).

- **Exclusions** – the following orders are always excluded from cancellation by a Bulk Cancel Request:
  - Immediate or Cancel (IOC) orders (including all Options Cross Orders - CUBE, Customer-to-Customer and QCC)
  - GTC, Fill or Kill (FOK), and Open Outcry orders

Bulk Cancel with Block and Unblock actions

This same message can be used to bulk cancel with block and unblock Market Maker Quotes and/or orders designated with CustomerOrFirm = Market Maker based on the combination of criteria specified in the message. These options will only be available for Options Market Maker sessions.

As with all Application Layer Payload messages, the 'MPID' field on the Bulk Cancel Request must be populated with a valid MPID configured for use on that session.

- **Options Market Maker sessions** - Requests must also specify an MMID (MarketMaker field), and optionally SymbolID or SymbolID + GroupID. If a SymbolID or SymbolID + GroupID is specified, the action will apply to only that criteria for the MMID. If not specified, the action will apply to all SymbolIDs for the MMID.

The cancel with block and unblock options are available for all Cancel Scope options. When Cancel Scope includes orders on a cancellation with block or unblock request, the action will apply to both complex and single-leg order entry.

A cancel with block may be sent from one Options Market Maker Session and an unblock may be sent over another Options Market Maker Session. When a cancel with block is requested globally by MMID, each SymbolID can be unblocked individually by SymbolID or globally by MMID. When a cancel with block is requested by SymbolID it can be unblocked using the same SymbolID or globally by MMID. When a cancel with block is requested by SymbolID along with a GroupID, it can be unblocked using the exact same criteria, SymbolID alone or globally by MMID.

New quotes or orders (including Cancel/replace and Modify messages) received while the MMID or MMID + SymbolID is blocked will be rejected with reason code 310, and new quotes or orders received while the SymbolID + GroupID is blocked will be rejected with reason code 329.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0223 Length = 65	Yes	Yes
SymbolID	u32	4	4	**Optional.** May be populated with an underlying symbol or Options series. If GroupID field is populated for cancel with block (*BulkAction=4*) and unblock (*BulkAction=5)*,	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				SymbolID must be populated with an underlying symbol. If populated, only quotes/orders for the underlying symbol or series will be cancelled.		
MPID	zchar(4)	8	4	Firm Identifier – MPID. For Market Makers, MPID linked to the MMID (MarketMaker field) specified.	Yes	Yes
MarketMaker	zchar(10)	12	10	This value represents a Market Maker (including LMM, Primary Specialist, Specialist and e-Specialist), agreed upon between the firm and the Exchange. These firms must provide their MMID along with its associated MPID on all orders intended to receive credit for satisfying their marking making/liquidity obligations. **For Options Market Maker sessions** - optional for cancel only actions, required for cancel with block and unblock actions. If populated, only quotes/orders for the specified MMID will be affected. If not populated, quotes/orders for all MMIDs and their associated MPIDs will be affected. **For all other sessions** - must NOT be specified.	Yes	Yes
ClOrdID	u64	22	8	Unique ID of the Bulk Cancel Request as assigned by the firm. Pillar will validate that the ClOrdID is unique for the combination of Username + MPID that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID. Customer defined.	Yes	Yes
MMSentTime	Timestamp	30	8	CAT compliance Number of nanoseconds since Epoch. **For Options Market Maker sessions** - must be specified.	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				For all other sessions - must NOT be specified.		
Side	u8	38	1	0 = No side (cancels both buy and sell) 1 = Buy 2 = Sell For cancel with block (*BulkAction = 4*) and unblock (*BulkAction = 5*) - only 0 is supported. If populated with 1 or 2, it will be rejected with reason code 019.	0 1 2	0 1 2
GroupID	u32	39	4	**For Options Market Maker sessions** - optional. If populated, only quotes with the specified GroupID will be cancelled. If populated for cancel with block and unblock, SymbolID field must be populated with an underlying symbol. **For all other sessions** - must NOT be specified.	Yes	Yes
TargetCancelUsername	char(16)	43	16	**Optional -** either TargetCancelUsername or TargetCancelMPID must be specified for cancel only actions. TargetCancelUsername is ignored for the block portion of the block and cancel (*BulkAction = 4*) and unblock (*BulkAction = 5*). May be populated with the Username of the session sending this Bulk Cancel Request. If populated, only quotes/orders originally entered via this Username will be cancelled.	Yes	Yes
BulkAction	u8	59	1	**For all sessions:** 0 = Not Applicable 1 = Cancel Single Leg only 2 = Cancel Complex only 3 = Cancel both Single Leg and Complex **For Options Market Maker sessions:** 4 = Block and Cancel 5 = Unblock Value must be 0, 4 or 5 when *CancelScope = 1*	0 1 2 3 4 5	0 1 2 3 4 5
CancelScope	u8	60	1	0 = Orders only 1 = Options MM Quotes only 2 = Both Orders and Options MM Quotes	0 1 2	0 1 2

Field	Type	Offset	Len	Values	Arca Options	American Options
				For Options Market Maker sessions - may be specified as 0, 1, or 2. **For all other sessions** - must be specified as 0.		
TargetCancelMPID	zchar(4)	61	4	**Optional -** either TargetCancelUsername or TargetCancelMPID must be specified for cancel only actions. TargetCancelMPID is ignored for block and cancel (*BulkAction = 4*) and unblock (*BulkAction = 5*). May be populated with a valid MPID entitled for use on the session sending this Bulk Cancel Request. If populated, only quotes/orders for the specified MPID will be cancelled. Firm Identifier – MPID. For Market Makers, MPID linked to the MMID (*MarketMaker* field) specified.	Yes	Yes

7.9 Risk Limit Update Request

User Type: Risk Admin and Market Maker

Stream Type: TG

This message allows firms using Pillar Risk Controls to set/update the risk configurations of Risk Entities for which they have "write" entitlements.

Please refer to the NYSE Pillar Risk Controls document for all functional detail regarding the use of Pillar Risk Controls, including:

- For each Risk Control Type - Risk Entity applicability, mandatory fields, and minimum/maximum limit values
- Options Market Makers - mandatory Activity-based Limits; unsolicited cancel & block breach across orders and quotes in underlying symbol upon Arbitrage or Intrinsic Value price check reject
- Frequently Asked Questions

De-activating Risk Controls - to turn off a Risk Control, Risk Users may set RiskControlActivation = 0 (off). In response, Pillar will default the limit to (-1) which indicates "no limit."

Updates for Activity-based Controls - may be specified individually per underlying symbol, or in bulk across all underlying symbols.

- **Individual underlying** - populate the SymbolID field
- **Bulk across ALL underlyings** - leave the SymbolID field null

- In both cases, a single Risk Control Acknowledgement will be sent in response if the Request is accepted

Limit Order Price Protection - Price Protection Limits are configured by limit price range - represented as RiskRangeID. A Risk User who chooses to configure limits must specify a valid value for each range.

Configuration is "all or none" - until Pillar accepts a limit for each range and the Risk User subsequently sends a request to activate their configurations, the Exchange default will apply for all ranges. To apply Multipliers on top of Exchange default limits, the Risk User must explicitly enter limits equal to the Exchange default in addition to specifying their Multiplier values.

Steps to configure:

- **Set Custom Limits** - send separate request messages with RiskControlType = 26 or 27 (Limit Order Price Protection - Single Leg or Complex Custom Limits) for each RiskRangeID value > 0, specifying both USDLimit and PercentageLimit. Note that both limits must be less than or equal to certain Exchange default values (requests without both fields populated as such will be rejected). The greater of the two limits - either USD or Percentage - will be applied on an order-by-order basis
- **Activate Custom Limits** - send one request message with RiskControlType = 26 or 27 (Limit Order Price Protection - Single Leg or Complex Custom Limits) and RiskRangeID = 0 (not applicable). If accepted, the configured limits for all RiskRangeIDs will be activated

To deactivate custom limits and return to Exchange default functionality, send one request message with RiskControlType = 26 or 27 (Limit Order Price Protection - Single Leg or Complex Custom Limits), RiskRangeID = 0 (not applicable), and RiskControlActivation = 0 (off). If accepted, Pillar will set the limit and RiskControlActivation = 0 for all ranges.

An attempt to set a limit of (-1) or RiskControlActivation = 0 for a RiskRangeID > 0 will be rejected.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0330 Length = 272	Yes	Yes
SymbolID	u32	4	4	Risk Entity – Symbol (equities) or Underlying Symbol (options). Identification number assigned to the security. **May optionally be populated for the following RiskControlTypes:** • Activity-based – Rolling Transaction • Activity-based – Rolling Volume • Activity-based – Rolling Percentage See guidance above this table for how the request is processed when SymbolID field is populated vs. null.	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				For all other RiskControlTypes – not applicable; will be ignored if populated.		
MPID	zchar(4)	8	4	Risk Entity. Firm Identifier – MPID. Required.	Yes	Yes
MarketMaker	zchar(10)	12	10	Risk Entity. Options Market Maker identifier – alphanumeric MMID associated with the specified MPID. Populate if applicable.	Yes	Yes
MPSubID	zchar(4)	22	4	Risk Entity – SubID associated with the specified MPID. Populate if applicable.	Yes	Yes
FloorBrokerFirmCRD	u32	26	4	Risk Entity – CRD of NYSE Floor Broker Firm. Populate if applicable.		
ClearingNumber	zchar(5)	30	5	*Reserved for future use.* Risk Entity – Clearing Number associated with the specified MPID. Populate if applicable.		
ClOrdID	u64	35	8	Unique ID of request as assigned by the firm. The firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID. Pillar will not systemically enforce this. Customer defined.	Yes	Yes
RiskUserCRD	u32	43	4	Risk User – CRD of the firm that owns the risk control represented by this message.	Yes	Yes
RiskUserType	char	47	1	Risk User – type of firm that owns the risk control represented by this message. E = Entering Firm C = Clearing Firm F = NYSE Floor Broker Firm O = Options Market Maker Firm	 E C O	 E C O
RiskControlType	u8	48	1	0 = Not Applicable 1 = Single Order Max Qty 2 = Single Order Max Notional Value 3 = *Reserved for future use* 4 = *Reserved for future use* 5 = Gross Credit (Open + Executed)	 1 2	 1 2

Field	Type	Offset	Len	Values	Arca Options	American Options
				6 = Maximum Duplicative Orders 7 = *Reserved for future use* 8 = Activity-based – Rolling Transaction 9 = Activity-based – Rolling Volume 10 = Activity-based – Rolling Percentage 11 = Activity-based – Global Risk Mitigation Protection for Transaction/Volume/Percentage 12 = Reject ISO 13 = Reject Market Orders (except MOO) 14 = Reject MOO 15 = *Reserved for future use* 16 = *Reserved for future use* 17 = Reject Early Trading Session designation 18 = Reject Late Trading Session designation 19 = Reject Restricted Symbol (underlying) 20 = Reject Sell Short for Symbol 21 = Reject Sell Short Exempt for Symbol 22 = Single Order Maximum Quantity as Percentage of Symbol ADV 23 = Limit Order Price Protection Equities - Custom Limits 24 = Limit Order Price Protection Equities - Early/Late Trading Multiplier 25 = Limit Order Price Protection Equities - Closing Only Multiplier 26 = Limit Order Price Protection Options - Single Leg Custom Limits 27 = Limit Order Price Protection Options - Complex Custom Limits 28 = Require LocateBroker on Sell Short and Sell Short Exempt orders	6 8 9 10 11 12 13 14 19 26 27	6 8 9 10 11 12 13 14 19 26 27
RiskControlActivation	u8	49	1	0 = Risk Control turned off 1 = Risk Control turned on	0 1	0 1
USDLimit	i64	50	8	Integer US Dollar limit. **Must be specified for the following RiskControlTypes:** • Single Order Max Notional Value • Gross Credit (Open + Executed) **For all other RiskControlTypes** – not applicable, should be set to 0 and will be ignored if populated with any other value.	Yes	Yes
TimeLimit	i32	58	4	Microsecond time period.	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				Must be specified for the following RiskControlTypes: • Activity-based – Rolling Transaction • Activity-based – Rolling Volume • Activity-based – Rolling Percentage • Activity-based – Global Risk Mitigation Protection for Transaction/Volume/ Percentage **For all other RiskControlTypes** – not applicable, should be set to 0 and will be ignored if populated with any other value.		
PercentageLimit	i32	62	4	Percentage (%). **Must be specified for the following RiskControlTypes:** • Activity-based – Percentage **For all other RiskControlTypes** – not applicable, should be set to 0 and will be ignored if populated with any other value.	Yes	Yes
CountLimit	i32	66	4	Integer count. **Must be specified for the following RiskControlTypes:** • Activity-based – Rolling Transaction. Represents max # transactions over rolling time period • Activity-based – Rolling Volume. Represents max # contracts executed over rolling time period • Activity-based – Global Risk Mitigation Protection – Transaction/Volume/ Percentage. Represents max # breaches over rolling time period **For all other RiskControlTypes** – not applicable, should be set to 0 and will be ignored if populated with any other value.	Yes	Yes
BreachAction Request	u8	70	1	0 = Not Applicable 1 = Notifications Only 2 = Cancel Non-Auction Orders & Block 3 = Block Only **For the following RiskControlTypes** – must be set as 1/2/3: • Activity-based – Rolling Transaction • Activity-based – Rolling Volume	0 1 2 3	0 1 2 3

Field	Type	Offset	Len	Values	Arca Options	American Options
				• Activity-based – Rolling Percentage • Gross Credit (Open + Executed) **For all other RiskControlTypes** – must be set as 0.		
IOCAttribution	u8	71	1	0 = Not Applicable 1 = Include IOC and GTX orders in activity-based calculations and cancellations 2 = Exclude IOC and GTX orders from activity-based calculations and cancellations **For the following RiskControlTypes** - must be set as 1 or 2: • Activity-based – Rolling Transaction • Activity-based – Rolling Volume • Activity-based – Rolling Percentage **For all other RiskControlTypes** – must be set as 0.	0 1 2	0 1 2
Reserved	zchar(200)	72	200	*Bytes reserved for future use*	Yes	Yes

7.10 Risk Action Request

User Type: Risk Admin and Market Maker

Stream Type: TG

This message allows firms using Pillar Risk Controls to query Risk Entities for current configurations/calculations/status, invoke Kill Switch actions, and Approve Reinstatement following a breach with "Block" instructions.

All actions must be performed per individual Risk Entity + RiskControlType (bulk actions not supported via this message).

SymbolID - must be populated to Query or Approve Reinstatement for Activity-based Rolling Transaction/Volume/ Percentage risk controls.

Please refer to the NYSE Pillar Risk Controls document for all functional detail regarding the use of Pillar Risk Controls, including:

- For each Risk Control Type - Risk Entity applicability, mandatory fields, and minimum/maximum limit values
- Options Market Makers - mandatory Activity-based Limits; unsolicited cancel & block breach across orders and quotes in underlying symbol upon Arbitrage or Intrinsic Value price check reject
- Process for reinstatement following a limit breach with Block or Cancel & Block automated breach action
- Frequently Asked Questions

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0331 Length = 250	Yes	Yes
SymbolID	u32	4	4	Risk Entity – Symbol (equities) or Underlying Symbol (options). Identification number assigned to the security. **Required to Query (RiskActionType = 1) or Approve Reinstatement (RiskActionType = 7) for the following RiskControlTypes:** • Activity-based – Rolling Transaction • Activity-based – Rolling Volume • Activity-based – Rolling Percentage **For all other RiskControlTypes** – not applicable; will be ignored if populated. **May be specified for RiskActionType** - Kill Switch commands.	Yes	Yes
MPID	zchar(4)	8	4	Risk Entity. Firm Identifier – MPID. Required.	Yes	Yes
MarketMaker	zchar(10)	12	10	Risk Entity. Options Market Maker identifier – alphanumeric MMID associated with the specified MPID. Populate if applicable.	Yes	Yes
MPSubID	zchar(4)	22	4	Risk Entity – SubID associated with the specified MPID. Populate if applicable.	Yes	Yes
FloorBrokerFirmCRD		26	4	Risk Entity – CRD of NYSE Floor Broker Firm. Populate if applicable.		
ClearingNumber	zchar(5)	30	5	*Reserved for future use.* Risk Entity – Clearing Number associated with the specified MPID. Populate if applicable.		
ClOrdID	u64	35	8	Unique ID of request as assigned by the firm. The firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				of the trading day by the given Username + MPID. Pillar will not systemically enforce this.		
RiskUserCRD	u32	43	4	Risk User – CRD of the firm that owns the risk control represented by this message.	Yes	Yes
RiskUserType	char	47	1	Risk User – type of firm that owns the risk control represented by this message. E = Entering Firm C = Clearing Firm F = NYSE Floor Broker Firm O = Options Market Maker Firm	 E C O	 E C O
RiskControlType	u8	48	1	0 = Not Applicable 1 = Single Order Max Qty 2 = Single Order Max Notional Value 3 = *Reserved for future use* 4 = *Reserved for future use* 5 = Gross Credit (Open + Executed) 6 = Maximum Duplicative Orders 7 = *Reserved for future use* 8 = Activity-based – Rolling Transaction 9 = Activity-based – Rolling Volume 10 = Activity-based – Rolling Percentage 11 = Activity-based – Global Risk Mitigation Protection for Transaction/Volume/Percentage 12 = Reject ISO 13 = Reject Market Orders (except MOO) 14 = Reject MOO 15 = *Reserved for future use* 16 = *Reserved for future use* 17 = Reject Early Trading Session designation 18 = Reject Late Trading Session designation 19 = Reject Restricted Symbol (underlying) 20 = Reject Sell Short for Symbol 21 = Reject Sell Short Exempt for Symbol 22 = Single Order Maximum Quantity as Percentage of Symbol ADV 23 = Limit Order Price Protection Equities - Custom Limits 24 = Limit Order Price Protection Equities - Early/Late Trading Multiplier 25 = Limit Order Price Protection Equities - Closing Only Multiplier 26 = Limit Order Price Protection Options - Single Leg Custom Limits	 1 2 6 8 9 10 11 12 13 14 19 26	 1 2 6 8 9 10 11 12 13 14 19 26

Field	Type	Offset	Len	Values	Arca Options	American Options
				27 = Limit Order Price Protection Options - Complex Custom Limits 28 = Require LocateBroker on Sell Short and Sell Short Exempt orders	27	27
RiskActionType	u8	49	1	0 = Not Applicable 1 = Query Risk Entity for current Risk Control configs/calculations/status 2 = Kill Switch – Block 3 = Kill Switch – UnBlock 4 = Kill Switch – Cancel Auction Orders 5 = Kill Switch – Cancel Non-Auction Orders 6 = Kill Switch – Cancel GTC Orders 7 = Approve Reinstatement 8 = Risk Entity Reinstated (all necessary reinstatement approvals received; reinstatement processed)	 1 2 3 4 5 6 7	 1 2 3 4 5 6 7
Reserved	zchar(200)	50	200	*Bytes reserved for future use*	Yes	Yes

7.11 New Complex Series Request

User Type: Complex Options only - All users

Stream Type: TG

This message type is used to create a new complex series as defined in the message.

Note: in scenarios where Pillar rejects the New Complex Series Request message with an Application Layer Reject message, the "SymbolID" field of the reject message will be populated with the underlying symbol identifier.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0357 Minimum Length = 16	Yes	Yes
ClOrdID	u64	4	8	Unique ID of the message as assigned by the firm. Pillar will validate that the ClOrdID is unique for the combination of Username + MPID that entered the	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID. Customer defined.		
MPID	zchar(4)	12	4	Firm Identifier – MPID. Must match the MPID of the order intended for modification.	Yes	Yes
→ Repeating Group A maximum of 12 legs can be defined.						
→ LegSymbolID	u32	16	4	Identification number assigned to the security.	Yes	Yes
→ LegRatioQty	u16	20	2	The ratio of quantity for this individual leg. 1 - 65,535 Leg order quantity is determined by OrderQty*LegRatioQty, the resulting value cannot exceed 999,999. The ratio restriction of 3:1 will be enforced for all orders in Pillar Binary.	Yes	Yes
→ LegSide	u8	22	1	1 = Buy 2 = Sell	1 2	1 2

8. Pillar to Member Firm - Application Layer Payload Messages

8.1 Underlying Symbol Reference Data

User Type: All users

Stream Type: REF

This message is published for each Underlying symbol for which a gateway session is configured to trade. It provides the firm with necessary Underlying information needed to manage related Options series.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0233 Length = 58	Yes	Yes
TransactTime	u64	4	8	Exchange application time.	Yes	Yes
SymbolID	u32	12	4	Identification number assigned to the security	Yes	Yes
NYSESymbol	char(24)	16	24	Pillar Market Data Symbology	Yes	Yes
ListedMIC	zchar(4)	40	4	Market Identifier Code (MIC) of Primary Market	Yes	Yes
UnderlyingType	char	44	1	Identifies what type of security the underlying symbols is A = ADR C = Common stock D = Debentures E = ETF F = Foreign H = ADS I = Units M = Misc others L = Index linked notes N = Bonds O = Ordinary shares P = Preferred stock R = Rights S = Beneficiary interest T = Structured notes U = Closed end fund W = Warrant X = Index Z = Options	 A C D E F H I M L N O P R S T U W X Z	 A C D E F H I M L N O P R S T U W X Z
MaxOrderPrice	Price	45	8	Maximum allowable order entry price	Yes	Yes
MPVClassID	u16	53	2	Identification number assigned to the MPVClass	Yes	Yes
TestSymbolIndicator	u8	55	1	0 = Production Symbol 1 = Test Symbol	0 1	0 1
ChannelID	u8	56	1	TXN of Underlying	Yes	Yes
LegalWidthMultiplier	u8	57	1	Multiplier applied to standard legal width. For example: • If the legal width is 200% - the value in this field will be 2	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				• If the legal width is 2,000% - the value in this field will be 20		

8.2 Series Reference Data

User Type: All users

Stream Type: REF

This message is published for each security traded on the market for which a gateway session is configured to trade. It provides the firm with the information needed to enter orders for those options, including series index, full OSI symbology and series type. All orders must be submitted using the series index.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0X0234 Length = 67	Yes	Yes
TransactTime	u64	4	8	Exchange application time	Yes	Yes
SeriesIndex	u32	12	4	Options series index	Yes	Yes
SymbolID	u32	16	4	Underlying symbol index	Yes	Yes
OCCSymbolRoot	char(24)	20	24	OCC root for Option series	Yes	Yes
PutOrCall	u8	44	1	Call or Put indicator 0 = Put 1 = Call	 0 1	 0 1
StrikePrice	uPrice	45	8	Strike price	Yes	Yes
MaturityDate	zchar(8)	53	8	Maturity year month day yyyy mm dd	Yes	Yes
ContractMultiplier	u32	61	4	Number of Underlying shares per option contract. Ties directly to the root symbol underlying. Usually set to 100.	Yes	Yes
SeriesType	u8	65	1	0 = Standard	0	0
ClosingOnlyIndicator	u8	66	1	0 = Standard Series 1 = Closing Only Series	0 1	0 1

8.3 Complex Series Reference Data

User Type: Complex Options only - All users

Stream Type: REF

A complex series is defined from the perspective of the buyer (i.e. Buy aligned). Pillar sequences the component legs from a Complex Series Request or a FIX order from lowest LegSymbolID to highest LegSymbolID. After sequencing the component legs, using the first component leg, if the leg is to Buy, the complex series is defined and published to Pillar Market Data. If the first leg is to Sell, the side of all component legs are reversed and published to Pillar Market Data.

No Complex series reference data is provided in Binary. Complex security definitions are provided via the Pillar Market Data feed.

8.4 Minimum Price Variant Class Reference Data

User Type: All

Stream Type: REF

This message defines a single MPV Class by name and Identification number, and provides attributes belonging to that class.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0230 Length = 50	Yes	Yes
TransactTime	Timestamp	4	8	Exchange application time.	Yes	Yes
MPVClassName	zchar(20)	12	20	Name of the Minimum Price Variant (MPV) Class.	Yes	Yes
MPVClassID	u16	32	2	Identification number assigned to the MPVClass.	Yes	Yes
RPIMPV	uPrice	34	8	Numeric value of the Minimum Price Variation for Retail Price Improvement (RPI) orders for securities belonging to the MPVClass. **NYSE Arca & American Options** - not applicable; will be populated with 0.	0	0
LULDMPV	uPrice	42	8	Numeric value of the Minimum Price Variation for LULD bands for securities belonging to the MPVClass. **NYSE Arca & American Options** - not applicable; will be populated with 0.	0	0

8.5 Minimum Price Variant Level Reference Data

User Type: All

Stream Type: REF

Data Structures used in this Message: This variable length message defines one or more MPV Levels within a single MPV Class. The data structure "MPVLevelDefinition" is embedded in the message for that purpose, and one or more instances of the structure may be present depending on the number of MPV Levels currently in use by the MPV Classes.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0231, Minimum Length = 12	Yes	Yes
TransactTime	Timestamp	4	8	Exchange application time.	Yes	Yes
MPVLevelDefinition	MPVLevel Definition	12	50	Data structure - see format below. Each instance of the data structure defines a single MPV Level within the MPV Class. In variable length "MPV Level Reference Data" message, multiple MPVLevel data structures may be present to define various MPV levels within the MPV Class.	Yes	Yes

MPVLevelDefinition is a data structure which defines the following attributes for a given 'MPVLevelName':

- **A security price range ('Price')** – for example, less than $3.00 or above $3.00.
- **Quoting Minimum Price Variation ('Quoting MPV') –** the quoting MPV value associated with the price range, which governs limit order entry and quoting for securities belonging to the MPV Level.
- **Trading Minimum Price Variation ('Trading MPV')** – the trading MPV value associated with the price range, which governs trading for securities belonging to the MPV level.

Field	Type	Offset	Len	Values
MPVLevelName	char(24)	0	24	Name of the Minimum Price Variant (MPV) Level. Naming convention includes the MPVClassName.
Price	uPrice	24	8	Order entry Limit price range for the MPVLevel defined in this message
QuotingMPV	uPrice	32	8	Numeric value of the Quoting Minimum Price Variation for the MPVLevel and Price defined in this message.
TradingMPV	uPrice	40	8	Numeric value of the Trading Minimum Price Variation for the MPVLevel and Price defined in this message.
MPVClassID	u16	48	2	Identification number assigned to the MPVClass.

8.6 MPID Configuration

User Type: All

Stream Type: REF

An instance of this message is provided, unsolicited, at start of day for each MPID configured on a gateway session. It indicates the current status of the MPID.

The message will also be provided intraday in the event of an intraday MPID addition or change to an existing MPID configuration.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0272 Length = 83	Yes	Yes
TransactTime	Timestamp	4	8	Exchange application time.	Yes	Yes
MPIDStatus	u8	12	1	Indicates the status of the MPID. 1 = Active 2 = Inactive 3 = Prospect	 1 2 3	 1 2 3
MPID	zchar(4)	13	4	Firm Identifier - MPID	Yes	Yes
Username	char(16)	17	16	Unique identifier of the gateway session – SenderCompID.	Yes	Yes
Reserved	char(50)	33	50	Bytes reserved for future use	Yes	Yes

8.7 MMID Configuration*

***Firms are advised NOT to use this message, as it will be eliminated in a future release. Instead, use the message "Options Market Maker Symbol Appointment Reference Data."**

User Type: All

Stream Type: REF - except Risk Admin sessions, which will not receive this message

An instance of this message is provided, unsolicited, at start of day for each MMID configured on a gateway session. It will also be provided intraday in the event of an intraday MMID addition.

The message provides the alphanumeric representation of a Market Maker or LMM. These firms must provide their MMID (MarketMaker field) along with its associated MPID on all orders intended to receive credit for satisfying their marking making/liquidity obligations.

When an MPID is assigned to a session, all MMIDs associated with that MPID are automatically made available for use on that session.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0273 Length = 142	Yes	Yes
TransactTime	Timestamp	4	8	Exchange application time.	Yes	Yes
MarketMaker	char(10)	12	10	This value represents a Market Maker (including LMM, Primary Specialist, Specialist and e-Specialist), agreed upon between the firm and the Exchange. These firms must provide this value in the MarketMaker field, and its associated MPID in the MPID field, on all orders/quotes intended to receive credit for satisfying their marking making/liquidity obligations. This value must be specified in the MarketMaker field of orders with CustomerOrFirm identified as Market Maker or Away Market Maker, and will be rejected if populated for any other CustomerOrFirm value. This value must be specified in the MarketMaker field of all Options Market Maker - New Bulk Quote messages.	Yes	Yes
MMID	u32	22	4	**NYSE Arca & American Options** - not applicable; will be populated with 0.	0	0
Username	char(16)	26	16	Unique identifier of the gateway session–SenderCompID.	Yes	Yes
Reserved	char(100)	42	100	Bytes reserved for future use	Yes	Yes

8.8 Options Market Maker Symbol Appointment Reference Data

User Type: Single-leg Options only - Market Maker

Stream Type: REF - except Risk Admin sessions, which will not receive this message

This message is provided to Market Makers for each of their appointed underlying symbols. It is published at start of day to all sessions configured for use by the Market Maker firm.

The message will also be provided intraday in the event of an intraday Symbol Appointment addition/removal as reflected in the AppointmentStatus field, or a change in the MMType as represented by that field.

Field	Type	Offset	Len	Values	Arca Options Market Maker	American Options Market Maker
Msghdr	MsgHeader	0	4	Type = 0x0833 Length = 106	Yes	Yes
TransactTime	Timestamp	4	8	Exchange application time	Yes	Yes
SymbolID	u32	12	4	Underlying symbol index	Yes	Yes
NYSESymbol	char(24)	16	24	Underlying symbol NYSE symbology	Yes	Yes
MarketMaker	zchar(10)	40	10	This value represents the alphanumeric representation of a Market Maker or LMM, agreed upon between the firm and the Exchange. These firms must provide their MMID along with its associated MPID on all orders intended to receive credit for satisfying their marking making/liquidity obligations. This field must be specified when CustomerOrFirm is identified as Market Maker or Away Market Maker, and will be rejected if populated for any other CustomerOrFirm value.	Yes	Yes
MPID	zchar(4)	50	4	Market Maker MPID	Yes	Yes
MMType	u8	54	1	1 = NYSE Arca Options Lead Market Maker 2 = NYSE Arca Options Market Maker -- 1 = NYSE American Options Market Maker 2 = NYSE American Options Specialist 3 = NYSE American Options e-Specialist 4 = NYSE American Options DOMM 5 = NYSE American Options Specialist & DOMM 6 = NYSE American Options e-Specialist & DOMM	1 2	 1 2 3 4 5 6
AppointmentStatus	u8	55	1	0 = Not appointed for underlying symbol 1 = Appointed for underlying symbol	0 1	0 1
Reserved	char(50)	56	50	Bytes reserved for future use	Yes	Yes

8.9 Session Configuration Acknowledgement

User Type: All

Stream Type:

- REF

This message is provided, unsolicited, at start of day. The message indicates the currently configured (default) settings for the gateway session, as defined by its Username.

This acknowledgment is also provided in response to a Session Configuration Request. The 'AckStatus' field indicates whether the request was accepted or rejected. In either case, the values sent in the message indicate the current settings.

Notes on Throttle Preference:

- Throttle preference must be specified in the Pillar Stream Protocol when opening a TG stream via the "Open" request message
- Stream Open request message and Session Configuration Request/Ack are independent of each other
- The value set in Open request always takes precedent, but will not trigger an update to the Session Configuration Ack
- To change settings intraday for a stream that is already open, the firm can send a Session Configuration Request, and will receive an Ack for the updated setting

For Options Market Maker sessions - Cancel-on-Disconnect is applied to the session by default and cannot be changed.

In the future, additional fields may be added to the end of the message to support other configurations, using the "reserved" bytes shown below. Firms should be prepared to accept and process significant values in the reserved bytes.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0221 Length = 98	Yes	Yes
TransactTime	Timestamp	4	8	Exchange application time.	Yes	Yes
UserSessionType	u8	12	1	Defines the permission type assigned to the gateway session. UserSessionType controls the message types and values available to the session. 1 = Customer (all asset clases) and/or Equities Market Maker 2 = Service Bureau 3 = Designated Market Maker (DMM) 4 = Options Market Maker 5 = Third Party Algo Vendor 6 = NYSE Floor Broker 7 = Direct to NYSE Floor Broker 12 = Risk Admin	1 2 4 12	1 2 4 12

Field	Type	Offset	Len	Values	Arca Options	American Options
UserSessionStatus	u8	13	1	Indicates the status of the gateway session. 1 = Active (permission to open streams for reading and writing) 2 = Inactive (permission to open read-only streams) 3 = Prospect (permission to open read-only streams)	 1 2 3	 1 2 3
Username	char(16)	14	16	Unique identifier of the gateway session – SenderCompID.	Yes	Yes
MIC	char(4)	30	4	Market Identifier Code (MIC) of the connected market. AMXO = NYSE American Options ARCO = NYSE Arca Options ARCX = NYSE Arca Equities XASE = NYSE American Equities XCHI = NYSE Chicago Equities XCIS = NYSE National Equities XNYS = NYSE	ARCO	AMXO
CancelOnDisconnect	u8	34	1	0 = Cancel on Disconnect Disabled 1 = Enable Cancel on Disconnect; Cancel – Day; (This will cancel all orders for the Session EXCEPT TIF = 2-At the Opening and 5-GTX and 1 - Good Till Cancel)* 2 = Enable Cancel on Disconnect. Cancel – ALL orders for the Session* *Exclusions – The following orders are always excluded from cancellation during a Cancel on Disconnect event: - Immediate or Cancel (IOC) orders (for NYSE Arca & American Options, this covers all Cross Orders - CUBE, QCC, Customer to Customer) - On NYSE Arca & American Options - GTC, Fill or Kill (FOK), and Open Outcry orders	0 1 2	0 1 2
ThrottlePreference	u8	35	1	0 = Queue orders when throttled 1 = Reject orders when throttled	0 1	0 1
ThrottleWindow	u16	36	2	Time period over which the ThrottleThreshold is enforced. Represented in milliseconds.	Yes	Yes
ThrottleThreshold	u16	38	2	Maximum number of inbound messages allowed over the time period specified by ThrottleWindow.	Yes	Yes
SymbolEligibility	u8	40	1	Session level permission to control order entry based on type of symbol.		

Field	Type	Offset	Len	Values	Arca Options	American Options
				1 = All Symbols (Production and Test Symbols) 2 = Test Symbols only	1 2	1 2
MaxOrderQuantity	u32	41	4	Maximum allowable OrderQty for Order and Cancel/Replace Requests entered on the gateway session.	Yes	Yes
SelfTradePrevention	u8	45	1	Session level default for the STP value on all Order and Cancel/Replace requests entered on the session. **Note**: if the STP value is set on an individual Order or Cancel/Replace Request, that value will override this session level default. 1 = No Self Trade Prevention 2 = Cancel Newest 3 = Cancel Oldest 4 = Cancel Both 5 = Cancel Decrement	1 2 3 4	1 2 3 4
OrderPriorityUpdateAckSubscription	u8	46	1	0 = Not subscribed to receive the unsolicited "Order Priority Update Ack" message on the Session 1 = Receive unsolicited "Order Priority Update Ack" message on the Session (for Reserve Order replenishment) 2 = Receive unsolicited "Order Priority Update Ack" message AND unsolicited "Repricing Ack" message on the Session.	0 1 2	0 1 2
AckStatus	u8	47	1	0 = Unsolicited/Start of Day 1 = User Request Valid 2 = User Request Invalid (Rejected)	0 1 2	0 1 2
BOLDDesignation	u8	48	1	**NYSE American Options** - Session level default for the BOLD setting on all Order and Cancel/Replace requests entered on the session. Note: if the BOLD value is set on an individual Order or Cancel/Replace Request, that value will override this session level default. 0 = Not Applicable/Do Not Change my Default 4 = BOLD - Expose order info only 5 = BOLD - Expose order info and Capacity only 6 = BOLD - Expose order info and Participant ID only 7 = BOLD - Expose order info, Capacity and Participant ID 8 = No BOLDDesignation defaulting	0	0 4 5 6 7 8

Field	Type	Offset	Len	Values	Arca Options	American Options
				For all other markets - this field will be treated as filler. Any value specified will not be processed		
Reserved	zchar(49)	49	49	*Bytes reserved for future use*	Yes	Yes

8.10 Order and Cancel/Replace Acknowledgement

User Type: Single-leg and Complex Options - All users

Stream Type: GT

This message is provided by the Exchange in response to an Order/Cancel Replace Request or New Order Cross. It is represented by 'AckType' values New Interest Ack, Pending Replace, and Replaced.

For Complex, this message is only sent at complex (parent) level.

For Cross orders, this message will be sent for each side of the cross.

Data Structures used in this Message:

- **BitfieldOrderInstructions** – This message includes a bitfield containing a number of order instructions. See the "Data Structures" section at the beginning of this specification for a definition of the positions and valid values of each bit.

- **BitfieldFlowIndicator** – This message includes a bitfield indicating whether the inbound message was throttled. See the "Data Structures" section at the beginning of this specification for a definition of the positions and valid values of each bit.

- **OptionalOrderAddOn/OptionalSettlementTypeAddOn** – This variable length message follows the format of the order being modified or cancelled. If the order included an "OptionalOrderAddOn" or "OptionalSettlementType AddOn" data structure, this message will echo it back. If omitted from the order, this acknowledgement will be sent without an add-on. See the "Data Structures" section at the beginning of this specification for the field formats and valid values of the available add-ons.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0269, Minimum Length = 137	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
SymbolID	u32	4	4	Identification number assigned to the security	Yes	Yes
MPID	zchar(4)	8	4	Firm Identifier - MPID	Yes	Yes
MarketMaker	zchar(10)	12	10	This value represents a Market Maker (including LMM, Primary Specialist, Specialist and e-Specialist), agreed upon between the firm and the Exchange. These firms must provide their MMID along with its associated MPID on all orders intended to receive credit for satisfying their marking making/liquidity obligations. This field must be specified when CustomerOrFirm is identified as Market Maker or Away Market Maker, and will be rejected if populated for any other CustomerOrFirm value.	Yes	Yes
MPSubID	zchar(4)	22	4	Customer defined – identifies specific entity/trading desk of customer firm.	Yes	Yes
ClOrdID	u64	26	8	Unique ID of the message as assigned by the firm. Pillar will validate that the ClOrdID is unique for the combination of Username + MPID that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID. Customer defined.	Yes	Yes
OrigClOrdID	u64	34	8	Refers to the ClOrdID of a previously entered order.	Yes	Yes
BitfieldOrderInstructions	BitfieldOrder Instructions (u128)	42	16	Bitfield containing various order attributes and modifiers. See data structure definition table for the positions and valid values of each bit.	Yes	Yes
Price	Price	58	8	0.01 - 9,999.99 **Note:** For Complex orders - • -214,748.36 - 214,748.36 • Net Limit price of the order - can be positive, negative or zero. A positive Sell price indicates the Seller is proposing to receive money for the order; a negative Sell price indicates that the Seller is proposing to pay money for the order. A positive Buy price indicates the Buyer is	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				proposing to pay money; a negative Buy price indicates the Buyer is proposing to receive money. Zero is even. • Maximum of 2 decimal places.		
OrderQty	u32	66	4	1 - 999,999	Yes	Yes
MinQty	u32	70	4	0 = no MinQty Otherwise, Must be ≤ OrderQty	Yes	Yes
UserData	zchar(10)	74	10	Customer defined up to 10 characters; only printable ASCII characters allowed, excluding comma, semicolon, pipe delimiter, "at" symbol, greater than/less than, ampersand (&) and single/double quotation mark.	Yes	Yes
TransactTime	Timestamp	84	8	Exchange application time.	Yes	Yes
OrderID	u64	92	8	Unique identifier of most recent order as assigned by the Exchange. Published externally to market data feeds	Yes	Yes
LeavesQty	u32	100	4	0 - 999,999	Yes	Yes
WorkingPrice	Price	104	8	0.01 - 9,999.99 **Note:** For Complex orders - • -214,748.36 - 214,748.36 • Working Price can be positive, negative or zero. • Maximum of 2 decimal places.	Yes	Yes
WorkingAway FromDisplay	u8	112	1	0 = Working Price is equal to Display Price 1 = Working Price is different from Display Price	0 1	0 1
PreLiquidityIn dicator	zchar(4)	113	4	0 = None 1 = Candidate for setting a new displayed bid or offer on the local market 4 = Candidate for setting a new displayed bid or offer on the local market and joining the NBBO 5 = Candidate for setting a new displayed bid or offer on the local market and setting the NBBO	0 1 4 5	0 1 4 5
ReasonCode	u16	117	2	These reason codes are provided by the matching engine and qualify the event that produced the message. See Appendix for list of values.	Yes	Yes
AckType	u8	119	1	1 = New Interest 2 = Order Priority Update – New OrderID 3 = Order Priority Update – Same OrderID 4 = Bulk Cancel Ack 5 = Pending Cancel	1	1

Field	Type	Offset	Len	Values	Arca Options	American Options
				6 = Pending Replace 7 = Pending Modify 8 = Replaced 9 = Modified 10 = Eligible for Cross 11 = Canceled 12 = Done for Day 13 = Billable Cancel – Adding Liquidity 14 = Billable Cancel – Removing Liquidity 15 = Billable Cancel – Subdollar Adding Liquidity 16 = Billable Cancel – Subdollar Removing Liquidity 17 = GTC Renewal/Restatement	6 8 17	6 8 17
BitfieldFlowIndicator	BitfieldFlow Indicator	120	1	Bitfield indicating whether the inbound message was throttled. See data structure definition table for the positions and valid values of each bit.	Yes	Yes
LegOpenClose	u64	121	8	Indicates sender's position 0 = Open 1 = Close Although this Bitfield can hold up to 64 legs, a maximum of 12 legs are supported. Complex order messages with less than 2 or more than 12 legs will be rejected. Only those bits corresponding to the number of legs in the complex series may be populated with a value of 1, else the order will be rejected. **E.g.:** A 10-legged Complex order with the first two legs open, next three legs closed, next four legs open and the last leg close must have the following *LegOpenClose* value: 00000000 00000000 00000000 00000000 00000000 00000000 00000010 00011100 This field only applies to Complex orders. LegOpenClose values must be provided in the order corresponding to the sequencing of the component legs, which is lowest LegSymbolID to highest LegSymbolID, and can be obtained via the Complex Series Request Acknowledgment or Pillar Market Data Complex Series Mapping.	 0 1	 0 1

Field	Type	Offset	Len	Values	Arca Options	American Options
				Value must be 0 for all non-complex (single-leg option) orders, else will be rejected.		
AuctionID	u64	129	8	CUBE Auction identifier supplied by Pillar Market Data to allow GTX responses to target specific CUBE auctions. If provided on non-GTX responses, the order will be rejected.	Yes	Yes
OptionalOrder AddOn		137	4	Data structure - optional add-on structure may be appended to the Order message to make use of additional functionality. If present, add-on always begins with the 4 byte '*msghdr*' field. See data structure definition table for the positions and valid values of each bit.	Yes	Yes

8.11 Bulk Quote Acknowledgment

User Type: Single-leg Options - Market Maker

Stream Type: GT

This message is provided by the Exchange in response to a New Bulk Quote, as well as for Cancels and Done for Day messages against Market Maker Quotes. Done for Day messages are sent for all open quotes at the Done for Day time 4:45pm ET (30 minutes from late series market close).

Depending on session configuration, this message may also be sent unsolicited by the Exchange for Repricing quotes to notify the Market Maker of a working or display price update.

Data Structures used in this Message:

- **BitfieldFlowIndicator** – This message includes a bitfield indicating whether the inbound message was throttled. See the "Data Structures" section at the beginning of this specification for a definition of the positions and valid values of each bit.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type:0x0294 Minimum Length:66	Yes	Yes
TransactTime	Timestamp	4	8	Exchange application time.	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
MPID	zchar(4)	12	4	Firm Identifier - MPID	Yes	Yes
MarketMaker	zchar(10)	16	10	This value represents a Market Maker (including LMM, Primary Specialist, Specialist and e-Specialist), agreed upon between the firm and the Exchange. This field must be specified on New Bulk Quote.	Yes	Yes
SubID	zchar(4)	26	4	SubID applied to STP	Yes	Yes
ClOrdID	u64	30	8	A client-assigned ID for this bulk quote message. This ID combined with the MPID, MMID (MarketMaker field), series index and side is a unique mapping for individual one-sided quotes.	Yes	Yes
BitfieldFlowIndicator	BitfieldFlowIndicator	38	1	Indicates if message was throttled 0 = Inbound message was not throttled 1 = Inbound message was throttled	 0 1	 0 1
SelfTradeType	u8	39	1	Indicates value received on Bulk Quote. 0 = Use current Session Configuration STP setting for the Username* 1 = No Self Trade Prevention 2 = Cancel Newest 3 = Cancel Oldest 4 = Cancel Both 5 = Cancel Decrement *If 0 is specified, the explicit value (1-5) configured for the session will be sent back on response messages.	 0 1 2 3 4	 0 1 2 3 4
GroupID	u32	40	4	Indicates User-defined value received on Bulk Quote. Applies to all Quote messages in repeating group.	Yes	Yes
RepeatingGroups	u8	44	1	Indicates the number of repeating groups included in the message. Will be set to 0 for an ack where all quotes are accepted.	Yes	Yes
→ Repeating Group						
→ QuoteAck	QuoteAck Repeating Group	45	21	Quote ack structure containing repeating group. For more details on how this will be populated, and the number of quotes contained, see the	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				'QuoteAck Repeating Group' section of this document.		

8.12 QuoteAck Repeating Group

User Type: Single-leg Options only - Market Maker

BinQuoteAck is a data structure defining the repeating group of the Bulk Quote. One group per Quote message, in order received.

For responses to a New Bulk Quote, this repeating group structure will only contain quotes that have been rejected.

For unsolicited modifies, replaces, cancels, Done for Day and Repricing Quote Acks, this repeating group will contain the details of the quote that has been updated.

Field	Type	Offset	Len	Values	Arca Options	American Options
SeriesIndex	u32	0	4	Options Series ID	Yes	Yes
Side	u8	4	1	1 = Buy 2 = Sell	1 2	1 2

Field	Type	Offset	Len	Values	Arca Options	American Options
AckType	u8	5	1	1 = New Interest 2 = Order Priority Update – New OrderID 3 = Order Priority Update – Same OrderID 4 = Bulk Cancel Ack 5 = Pending Cancel 6 = Pending Replace 7 = Pending Modify 8 = Replaced 9 = Modified 10 = Eligible for Cross 11 = Canceled 12 = Done for Day 13 = Billable Cancel – Adding Liquidity 14 = Billable Cancel – Removing Liquidity 15 = Billable Cancel – Subdollar Adding Liquidity 16 = Billable Cancel – Subdollar Removing Liquidity 17 = GTC Renewal/Restatement 18 = individual Market Maker Quote Reject	3 5 6 7 8 9 11 18	3 5 6 7 8 9 11 18
Price	Price	6	8	Working price 0.00 - 9,999.99	Yes	Yes
Quantity	u32	14	4	0 - 999,999	Yes	Yes
ReasonCode	u16	18	2	Processing outcome	Yes	Yes
WorkingAwayFromDisplay	u8	20	1	0 = Working Price is equal to Display Price 1 = Working Price is different from Display Price	0 1	0 1

8.13 Order Single/Complex Modify/Cancel Request Acknowledgment and UROUT

User Type: Single-leg and Complex Options - All users

Stream Type: GT

This message is used as a Modify Request Acknowledgement, a Cancel Request Acknowledgment, a UROUT, and a Billable Cancel. Firms may be able to distinguish the use case by the 'AckType' field.

- **Modify Request Acknowledgement** – Represented by 'AckType' values Pending Modify and Modified.
- **Cancel Request Ack** – Represented by 'AckType' values Bulk Cancel Ack and Pending Cancel.
  - A single Bulk Cancel ack will be returned with reason code 137 that identifies the orders and/or quotes in the request are cancelled. UROUTs will follow for each order. Quotes will not return a UROUT in

response to a Bulk Cancel request. Reason code 137 will also be provided when a request to cancel with block or unblock is processed.

- **UROUT** – Indicates the firm's order has been cancelled by the Exchange. Represented by 'AckType' values Canceled and Done for Day. Done for Day messages are sent for all open orders at the Done for Day time 4:45pm ET (30 minutes from late series market close).

Data Structures used in this Message:

- **BitfieldFlowIndicator** – This message includes a bitfield indicating whether the inbound message was throttled. See the "Data Structures" section at the beginning of this specification for a definition of the positions and valid values of each bit.

For Complex, this message is only sent at complex (parent) level.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0278 Minimum Length = 112	Yes	Yes
TransactTime	Timestamp	4	8	Exchange application time.	Yes	Yes
SymbolID	u32	12	4	Identification number assigned to the security	Yes	Yes
MPID	zchar(4)	16	4	Firm Identifier – MPID	Yes	Yes
OrderID	u64	20	8	Unique identifier of most recent order as assigned by the Exchange. Published externally to market data feeds	Yes	Yes
RefClOrdID	u64	28	8	Unique ID of the message as assigned by the firm. Pillar will validate that the ClOrdID is unique for the combination of Username + MPID that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID. Customer defined. **On Modify/Cancel Request Acknowledgements:** Refers to the ClOrdID of the incoming Modify, Cancel, or Bulk Cancel Request. **On UROUTs (order cancellation):** - Solicited UROUTs – this field will refer to the ClOrdID of the incoming Cancel or Bulk Cancel Request.	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				- Self Trade Prevention UROUTs – this field will refer to the ClOrdID of the contra-side order that triggered the STP cancellation. (Note: when STP cancellation occurs against a contra-side order entered in the FIX protocol, this field will be populated only if the FIX ClOrdID is all numeric; else it will be populated with 0) - All other unsolicited UROUTs – this field will be set to 0.		
OrigClOrdID	u64	36	8	Refers to the ClOrdID of a previously entered order.	Yes	Yes
Price	Price	44	8	0.01 - 9,999.99 **Note:** For Complex orders- • -214,748.36 - 214,748.36 • Net Limit price of the order - can be positive, negative or zero. A positive Sell price indicates the Seller is proposing to receive money for the order; a negative Sell price indicates that the Seller is proposing to pay money for the order. A positive Buy price indicates the Buyer is proposing to pay money; a negative Buy price indicates the Buyer is proposing to receive money. Zero is even. • Maximum of 2 decimal places.	Yes	Yes
OrderQty	u32	52	4	0 - 999,999 For Bulk Cancel Ack, this field will be set to 0.	Yes	Yes
LeavesQty	u32	56	4	0 - 999,999	Yes	Yes
Side	u8	60	1	0 = No Side 1 = Buy 2 = Sell 3 = Sell short 4 = Sell short exempt 5 = Cross 6 = Cross short 7 = Cross short exempt	0 1 2	0 1 2
LocateReqd	u8	61	1	0 = No LocateReqd 1 = Locate required for sell short orders 2 = Locate NOT required for sell short order	0	0
ReasonCode	u16	62	2	These reason codes are provided by the matching engine and qualify the event that produced the message. See Appendix for list of values.	Yes	Yes
AckType	u8	64	1	1 = New Interest 2 = Order Priority Update – New OrderID		

Field	Type	Offset	Len	Values	Arca Options	American Options
				3 = Order Priority Update – Same OrderID 4 = Bulk Cancel Ack 5 = Pending Cancel 6 = Pending Replace 7 = Pending Modify 8 = Replaced 9 = Modified 10 = Eligible for Cross 11 = Canceled 12 = Done for Day 13 = Billable Cancel – Adding Liquidity 14 = Billable Cancel – Removing Liquidity 15 = Billable Cancel – Subdollar Adding Liquidity 16 = Billable Cancel – Subdollar Removing Liquidity 17 = GTC Renewal / Restatement 18 = individual Market Maker Quote Reject	4 5 7 9 11 12 17	4 5 7 9 11 12 17
BitfieldFlowIndicator	BitfieldFlowIndicator	65	1	Bitfield indicating whether the inbound message was throttled. See data structure definition table for the positions and valid values of each bit.	Yes	Yes
UserData	zchar(10)	66	10	Customer defined up to 10 characters; only printable ASCII characters allowed, excluding comma, semicolon, pipe delimiter, "at" symbol, greater than/less than, ampersand (&) and single/double quotation mark.	Yes	Yes
GroupID	u32	76	4	May be populated for AckType = 4 (Bulk Cancel Ack); Not Applicable for all other AckType values. Cancels, Blocks or Unblocks all quotes that have a GroupID equal to the value provided in this field. **For Options Market Maker sessions** - may optionally be specified. **For all other sessions** - must NOT be specified.	Yes	Yes
MarketMaker	zchar(10)	80	10	This value represents a Market Maker (including LMM, Primary Specialist, Specialist and e-Specialist), agreed upon between the firm and the Exchange. These firms must provide their MMID along with its associated MPID on all orders intended to receive credit for satisfying their marking making/liquidity obligations. This field must be specified when CustomerOrFirm is identified as Market Maker or Away Market Maker, and	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				will be rejected if populated for any other CustomerOrFirm value.		
TargetCancel Username	char(16)	90	16	May be populated for AckType = 4 (Bulk Cancel Ack). Not Applicable for all other AckType values. If populated, only quotes/orders originally entered via this Username will be cancelled.	Yes	Yes
TargetCancel MPID	zchar(4)	106	4	May be populated for AckType = 4 (Bulk Cancel Ack). Not Applicable for all other AckType values. If populated, only quotes/orders for the specified MPID will be cancelled. Firm Identifier – MPID. For Market Makers, MPID linked to the MMID (MarketMaker field) specified.	Yes	Yes
BulkAction	u8	110	1	Applicable for AckType = 4 (Bulk Cancel Ack); Not Applicable for all other AckType values. **For all sessions:** 0 = Not Applicable 1 = Cancel Single-leg only 2 = Cancel Complex only 3 = Cancel both Single-leg and Complex **For Options Market Maker sessions:** 4 = Block and Cancel 5 = Unblock Value must be 0, 4 or 5 when *CancelScope = 1*	 0 1 2 3 4 5	 0 1 2 3 4 5
CancelScope	u8	111	1	Applicable for AckType = 4 (Bulk Cancel Ack); Not Applicable for all other AckType values. 0 = Orders only 1 = Options MM Quotes only 2 = Both Orders and Options MM Quotes **For Options Market Maker sessions** - may be specified as 0, 1, or 2. **For all other sessions** - must be specified as 0.	 0 1 2	 0 1 2

8.14 Order Priority Update Acknowledgment

User Type: Single-leg and Complex Options - All users

Stream Type: GT

Depending on session configuration, this message is sent unsolicited by the Exchange to notify the firm of a Reserve Order replenishment event. This is represented by the 'AckType' value Order Priority Update – New OrderID. The Ack indicates that the displayed portion of a Reserve Order has been replenished according to the order's 'MaxFloor'. The replenishment order is assigned a new OrderID, which is provided in the message.

This message is also sent unsolicited by the Exchange to notify the firm of a working or display price update, represented by the 'AckType' value Order Priority Update – Same OrderID.

For Complex, this message is only sent at complex (parent) level.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0268 Length = 64	Yes	Yes
TransactTime	Timestamp	4	8	Exchange application time	Yes	Yes
SymbolID	u32	12	4	Identification number assigned to the security	Yes	Yes
MPID	zchar(4)	16	4	Firm Identifier – MPID	Yes	Yes
OrderID	u64	20	8	Unique identifier of most recent order as assigned by the Exchange. Published externally to market data feeds.	Yes	Yes
ClOrdID	u64	28	8	Unique ID of the message as assigned by the firm. Pillar will validate that the ClOrdID is unique for the combination of Username + MPID that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID. Customer defined.	Yes	Yes
WorkingPrice	Price	36	8	0.01 - 9,999.99 **Note:** For Complex orders - • -214,748.36 - 214,748.36 • Working Price can be positive, negative or zero. • Maximum of 2 decimal places.	Yes	Yes
OrderQty	u32	44	4	1 - 999,999 **Reserve Replenishment (AckType = 2)** - represents the displayed quantity.	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				Repricing (AckType = 3) - represents the leaves quantity of the order.		
WorkingAway FromDisplay	u8	48	1	0 = Working Price is equal to Display Price 1 = Working Price is different from Display Price	0 1	0 1
PreLiquidity Indicator	zchar(4)	49	4	0 = None 1 = Candidate for setting a new displayed bid or offer on the local market Note: Order Priority Update Acks will only be populated with value 0 or 1. The value 1 will be returned when the original order ack was populated with 1, 4, or 5.	0 1	0 1
AckType	u8	53	1	1 = New Interest 2 = Order Priority Update – New OrderID (reserve order replenishment) 3 = Order Priority Update – Same OrderID (repricing) 4 = Bulk Cancel Ack 5 = Pending Cancel 6 = Pending Replace 7 = Pending Modify 8 = Replaced 9 = Modified 10 = Eligible for Cross 11 = Canceled 12 = Done for Day 13 = Billable Cancel – Adding Liquidity 14 = Billable Cancel – Removing Liquidity 15 = Billable Cancel – Subdollar Adding Liquidity 16 = Billable Cancel – Subdollar Removing Liquidity 17 = GTC Renewal / Restatement 18 = individual Market Maker Quote Reject	 2 3	 2 3
UserData	zchar(10)	54	10	Customer defined up to 10 characters; only printable ASCII characters allowed, excluding comma, semicolon, pipe delimiter, “at” symbol, greater than/less than, ampersand (&) and single/double quotation mark.	Yes	Yes

8.15 Execution Report

User Type: Single-leg and Complex Options - All users

Stream Type: GT

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

For Complex, execution notification is sent at both complex (parent) and leg levels. Execution correction is only sent at leg level. The following fields will not be available for complex level execution notifications:

- DealID
- LiquidityIndicator
- ContraMarketMaker
- ContraClearingFirm
- ContraMPID
- ContraOpenClose
- ContraCustomerOrFirm
- ContraClearingAccount
- ContraCrossType
- ContraCoveredOrUncovered
- OpenClose

For Cross orders, each side of the cross will receive an execution report.

Data structures used within the message:

- If the executed order was originally sent with a data structure "OptionalOrderAddOn" or if the Cross order was included Exposed or Covered fields related to ClearingFirm, ClearingAccount or OptionalData the Exchange will include the data structure "OptionalReportAddOn" in this execution report.
- Otherwise, this message will be sent without an add-on. See the "Data Structures" section at the beginning of this specification for the field formats and valid values of the available add-ons.
- For NYSE Arca and American cross messages, a separate message will be provided for each side of the cross.

For a list of post trade adjustment messages sent back on Order Entry session and Drop Copy session, please refer to the "FIX Drop Copy" section of this document.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0295 Minimum Length = 136	Yes	Yes
TransactTime	u64	4	8	Exchange application time	Yes	Yes
SymbolID	u32	12	4	Identification number assigned to the security	Yes	Yes
MPID	zchar(4)	16	4	Firm Identifier – MPID	Yes	Yes
OrderID	u64	20	8	Unique identifier of most recent order as assigned by the Exchange. Published externally to market data feeds.	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
ClOrdID	u64	28	8	Unique ID of the message as assigned by the firm. Pillar will validate that the ClOrdID is unique for the combination of Username + MPID that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID. Customer defined.	Yes	Yes
DealID	u64	36	8	Unique identifier of a transaction, assigned by the Exchange to both Execution reports representing the two sides of a single trade. Published externally to market data feeds.	Yes	Yes
LastPx	Price	44	8	Price of current partial fill or fill message 0.01 - 9,999.99 **Note:** For Complex orders - • -214,748.36 - 214,748.36 • Last price can be positive, negative or zero. • Maximum of 2 decimal places.	Yes	Yes
LeavesQty	u32	52	4	0 - 999,999	Yes	Yes
CumQty	u32	56	4	1 - 999,999	Yes	Yes
LastQty	u32	60	4	Quantity of current partial fill or fill message 1 - 999,999	Yes	Yes
LiquidityIndicator	zchar(4)	64	4	On Partial Fills and Fills: See Appendix for values.	Yes	Yes
MultilegReportingType	u8	68	1	Indicates the type of Execution Report. (e.g.: used with multi-leg securities, such as option strategies, spreads, etc.). 0 = Not Applicable 1 = Single-leg security 2 = Individual leg of a multi-leg security 3 = Multi-leg security	1 2 3	1 2 3
Reserved	u8	69	1	*Reserved for future use*	0	0
Reserved	u16	70	2	*Reserved for future use*	0	0
LocateReqd	u8	72	1	0 = No LocateReqd 1 = Locate required for sell short orders 2 = Locate NOT required for sell short orders	0	0
ParticipantType	u8	73	1	0 = Not Applicable 1 = Customer 2 = Market Maker/LMM	0	0

Field	Type	Offset	Len	Values	Arca Options	American Options
				3 = DMM 4 = SLP 5 = NYSE Floor Broker/NYSE Chicago IB		
ReasonCode	u16	74	2	These reason codes are provided by the matching engine and qualify the event that produced the message. See Appendix for list of values.	Yes	Yes
UserData	zchar(10)	76	10	Customer defined up to 10 characters; only printable ASCII characters allowed, excluding comma, semicolon, pipe delimiter, "at" symbol, greater than/less than, ampersand (&) and single/double quotation mark.	Yes	Yes
Side	u8	86	1	1 = Buy 2 = Sell 3 = Sell short 4 = Sell short exempt 5 = Cross 6 = Cross short 7 = Cross short exempt	1 2	1 2
MarketMaker	zchar(10)	87	10	This value represents a Market Maker (including LMM, Primary Specialist, Specialist and e-Specialist), agreed upon between the firm and the Exchange. These firms must provide their MMID along with its associated MPID on all orders intended to receive credit for satisfying their marking making/liquidity obligations. This field must be specified when CustomerOrFirm is identified as Market Maker or Away Market Maker and will be rejected if populated for any other CustomerOrFirm value.	Yes	Yes
ContraMarketMaker	zchar(10)	97	10	Alphanumeric MMID of contra local or away MM.	Yes	Yes
ContraClearingFirm	zchar(5	107	5	Contra party clearing number of CMTA, if any - 5 digits. Numeric characters only, no preceding zeros.	Yes	Yes
ContraMPID	zchar(4)	112	4	Contra party Firm Identifier - MPID	Yes	Yes
ContraOpenClose	u8	116	1	Indicates sender's position. 0 = Not Applicable 1 = Open 2 = Close	 0 1 2	 0 1 2
ContraCustomerOrFirm	u8	117	1	Capacity of the order 0 = Not Applicable 1 = Customer	 0 1	 0 1

Field	Type	Offset	Len	Values	Arca Options	American Options
				2 = Firm 3 = Broker 4 = Market Maker 5 = Away Market Maker 6 = Prof customer	2 3 4 5 6	2 3 4 5 6
ContraClearingAccount	zchar(5)	118	5	Contra party clearing number - 5 digits Numeric characters only, no preceding zeros.	Yes	Yes
ContraCrossType	u16	123	2	0 = Not Applicable 5 =Price Improvement CUBE 7 = AON CUBE (Solicitation) 10 = QCC 11 = Customer to Customer Cross	0 10 11	0 5 7 10 11
ContraCoveredOrUncovered	u8	125	1	Identifies the Exposed or Covered Side when the contra side was Cross. 0 = Not Applicable 1 = Exposed 2 = Covered	 0 1 2	 0 1 2
CoveredOrUncovered	u8	126	1	Identifies the Exposed and Covered Side of each order in the Cross. 0 = Not Applicable 1 = Exposed 2 = Covered	 0 1 2	 0 1 2
CrossID	u64	127	8	Unique ID of the Cross as assigned by the firm.	Yes	Yes
OpenClose	u8	135	1	Indicates sender's position. 0 = Not Applicable 1 = Open 2 = Close	 0 1 2	 0 1 2
Optional Add Ons		136	4	Data structure: "OptionalOrderAddOn - Order-sending Firms" If present, add-on always begins with the 4 byte 'msghdr' field. See data structure definition table for the positions and valid values of each bit.	Yes	Yes

8.16 Trade Bust/Correct

User Type: Single-leg and Complex Options - All users

Stream Type: GT

This message is sent as a result of a report bust or correction (NYSE Arca Options and NYSE American Options only).

For Complex, this message is only sent at leg level.

For a list of post trade adjustment messages sent back on Order Entry session and Drop Copy session, please refer to the "FIX Drop Copy" section of this document.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0293 Length = 85	Yes	Yes
TransactTime	Timestamp	4	8	Exchange application time.	Yes	Yes
SymbolID	u32	12	4	Identification number assigned to the security.	Yes	Yes
MPID	zchar(4)	16	4	As entered on the order originally executed in the transaction that is busted or corrected. Firm Identifier – MPID	Yes	Yes
OrderID	u64	20	8	OrderID of the order originally executed in the transaction that is busted or corrected. Unique identifier of most recent order as assigned by the Exchange. Published externally to market data feeds.	Yes	Yes
ClOrdID	u64	28	8	ClOrdID of the order originally executed in the transaction that is busted or corrected. Pillar will validate that the ClOrdID is unique for the combination of Username + MPID that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID. Customer defined.	Yes	Yes
RefSeqMsgID	SeqMsgId	36	16	Contains the SeqMsgID of the transaction (original Execution Report) that is busted or corrected	Yes	Yes
DealID	u64	52	8	Busts - original DealID of the transaction that is being busted. Corrections - new DealID for the corrected transaction. Unique identifier of a transaction, assigned by the Exchange to both Execution reports representing the two sides of a single trade. Published externally to market data feeds.	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
LastPx	Price	60	8	Busts - original execution price Corrections - corrected price 0.01 - 9,999.99 **Note:** For Complex orders - • -214,748.36 - 214,748.36 • Last price can be positive, negative or zero. • Maximum of 2 decimal places.	Yes	Yes
LastQty	u32	68	4	Busts - original execution quantity Corrections - corrected execution quantity 1 - 999,999	Yes	Yes
ReasonCode	u16	72	2	These reason codes are provided by the matching engine and qualify the event that produced the message. See Appendix for list of values.	Yes	Yes
UserData	zchar(10)	74	10	Customer defined up to 10 characters; only printable ASCII characters allowed, excluding comma, semicolon, pipe delimiter, "at" symbol, greater than/less than, ampersand (&) and single/double quotation mark.	Yes	Yes
BustCorrectIndicator	u8	84	1	0 = Trade Bust 1 = Trade Correction	0 1	0 1

8.17 Application Layer Reject

User Type: Single-leg and Complex Options - All users

Stream Type: GT

This message informs the firm that a request has been rejected. The type of request message being rejected is identified in the RejectType field.

For Options Market Maker sessions - this message may be used to reject an entire New Bulk Quote, in which case the "SymbolID" field will be populated with the *underlying* symbol identifier.

- Standing Market Maker quotes are not cancelled due to an Application Layer Reject.

For Options Complex Series - this message is used to reject a Complex Series Request message, in which case the "SymbolID" field will be populated with the *underlying symbol* identifier.

The field 'ReasonCode' provides further detail on why the message has been rejected. See Appendix for a list and descriptions of the Pillar Reason Codes.

For Complex, this message is only sent at complex (parent) level.

For Cross orders, an application reject will be sent for each side of the cross.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0267 Length = 45	Yes	Yes
TransactTime	Timestamp	4	8	Exchange application time.	Yes	Yes
SymbolID	u32	12	4	Identification number assigned to the security	Yes	Yes
MPID	zchar(4)	16	4	Firm Identifier – MPID	Yes	Yes
ClOrdID	u64	20	8	ClOrdID of the message that is rejected (incoming message). Pillar will validate that the ClOrdID is unique for the combination of Username + MPID that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID. Customer defined.	Yes	Yes
ReasonCode	u16	28	2	These reason codes are provided by the matching engine and qualify the event that produced the message. See Appendix for list of values.	Yes	Yes
RejectType	u8	30	1	1 = Order/Cancel Replace reject 2 = Modify Request reject 3 = Cancel Request reject 4 = Bulk Cancel Request reject 5 = New Bulk quote reject 6 = Manual Action Response reject 7 = Risk Limit Update Request reject 8 = Bulk Cancel Request reject (Options) 9 = Cross Order reject 10 = New Complex Series Request reject 11 = Risk Action Request reject	1 2 3 5 7 8 10 11	1 2 3 5 7 8 9 10 11
UserData	zchar(10)	31	10	Customer defined up to 10 characters; only printable ASCII characters allowed, excluding comma, semicolon, pipe delimiter, "at" symbol, greater than/less than, ampersand (&) and single/double quotation mark.	Yes	Yes
Reserved	char(4)	41	4	*Bytes reserved for future use*	Yes	Yes

8.18 Risk Control Acknowledgement

User Type: Risk Admin and Market Maker

Stream Type: GT

For firms using Pillar Risk Controls, this message provides the current configurations and calculations of a Risk Entity. Pillar may send it in the following ways:

- **Solicited**
  - Ack for Risk Limit Update Request
  - Ack for Risk Action Request

- **Unsolicited** - sent to all Risk Users with "read" entitlements for the Risk Entity. This may include both the firm who set a Risk Control as well as those with read only entitlement.
  - Start of Day - Risk Control configs carried over from the previous day will be sent to entitled Risk Users
  - Intraday notification of configuration changes enacted by Risk Users via
    - NYSE Pillar Trade Ops Portal
    - Gateway - Risk Limit Update Request, Risk Action Request

Single Ack for Activity-based Risk Controls - Pillar will respond to a single Risk Limit Update Request or Risk Action Request with a single instance of the Risk Control Acknowledgement. For risk controls that have an automated breach action associated with it, the BreachActionRequest value originally specified via the Risk Limit Update Request will be echoed back on a single Risk Control Acknowledgement message in the BreachActionResponse field.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0332 Length = 314	Yes	Yes
SymbolID	u32	4	4	Risk Entity – Symbol (equities) or Underlying Symbol (options). Identification number assigned to the security. **May optionally be populated for the following RiskControlTypes:** • Activity-based – Rolling Transaction • Activity-based – Rolling Volume • Activity-based – Rolling Percentage	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				Populated = apply limit to individual underlying only Not Populated = apply limit to ALL underlyings for the specified risk entity **For all other RiskControlTypes** – not applicable; will be ignored if populated.		
MPID	zchar(4)	8	4	Risk Entity. Firm Identifier – MPID. Required.	Yes	Yes
MarketMaker	zchar(10)	12	10	Risk Entity. Options Market Maker identifier – alphanumeric MMID associated with the specified MPID. Populate if applicable.	Yes	Yes
MPSubID	zchar(4)	22	4	Risk Entity – SubID associated with the specified MPID. Populate if applicable.	Yes	Yes
FloorBrokerFirmCRD	u32	26	4	Risk Entity – CRD of NYSE Floor Broker Firm. Populate if applicable.		
ClearingNumber	zchar(5)	30	5	*Reserved for future use.* Risk Entity – Clearing Number associated with the specified MPID. Populate if applicable.		
ClOrdID	u64	35	8	Unique ID of request as assigned by the firm. The firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID. Pillar will not systemically enforce this. **Solicited Ack** - will be populated with the ClOrdID of the corresponding Risk Limit Update Request or Risk Action Request **Unsolicited Ack** - will be set as 0.	Yes	Yes
RiskAckType	u8	43	1	0 = Solicited Ack 1 = Unsolicited Ack	0 1	0 1
RiskUserCRD	u32	44	4	Risk User – CRD of the firm that owns the risk control represented by this message.	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
RiskUserType	char	48	1	Risk User – type of firm that owns the risk control represented by this message. E = Entering Firm C = Clearing Firm F = NYSE Floor Broker Firm O = Options Market Maker Firm	 E C O	 E C O
RiskControlType	u8	49	1	0 = Not Applicable 1 = Single Order Max Qty 2 = Single Order Max Notional Value 3 = *Reserved for future use* 4 = *Reserved for future use* 5 = Gross Credit (Open + Executed) 6 = Maximum Duplicative Orders 7 = *Reserved for future use* 8 = Activity-based – Rolling Transaction 9 = Activity-based – Rolling Volume 10 = Activity-based – Rolling Percentage 11 = Activity-based – Global Risk Mitigation Protection for Transaction/Volume/Percentage 12 = Reject ISO 13 = Reject Market Orders (except MOO) 14 = Reject MOO 15 = *Reserved for future use* 16 = *Reserved for future use* 17 = Reject Early Trading Session designation 18 = Reject Late Trading Session designation 19 = Reject Restricted Symbol (underlying) 20 = Reject Sell Short for Symbol 21 = Reject Sell Short Exempt for Symbol 22 = Single Order Maximum Quantity as Percentage of Symbol ADV 23 = Limit Order Price Protection Equities - Custom Limits 24 = Limit Order Price Protection Equities - Early/Late Trading Multiplier 25 = Limit Order Price Protection Equities - Closing Only Multiplier 26 = Limit Order Price Protection Options - Single Leg Custom Limits 27 = Limit Order Price Protection Options - Complex Custom Limits 28 = Require LocateBroker on Sell Short and Sell Short Exempt orders	1, 2, 6, 8, 9, 10, 11, 12, 13, 14, 19, 26, 27	1, 2, 6, 8, 9, 10, 11, 12, 13, 14, 19, 26, 27

Field	Type	Offset	Len	Values	Arca Options	American Options
RiskControlActivation	u8	50	1	0 = Risk Control turned off 1 = Risk Control turned on	0 1	0 1
RiskActionType	u8	51	1	0 = Not Applicable 1 = Query Risk Entity for current Risk Control configs/calculations/status 2 = Kill Switch – Block 3 = Kill Switch – UnBlock 4 = Kill Switch – Cancel Auction Orders 5 = Kill Switch – Cancel Non-Auction Orders 6 = Kill Switch – Cancel GTC Orders 7 = Approve Reinstatement 8 = Risk Entity Reinstated (all necessary reinstatement approvals received; reinstatement processed)	0 1 2 3 4 5 6 7	0 1 2 3 4 5 6 7
USDLimit	i64	52	8	Integer US Dollar limit. **Must be specified for the following RiskControlTypes:** • Single Order Max Notional Value • Gross Credit (Open + Executed) **For all other RiskControlTypes** – not applicable, should be set to 0 and will be ignored if populated with any other value.	Yes	Yes
TimeLimit	i32	60	4	Microsecond time period. **Must be specified for the following RiskControlTypes:** • Activity-based – Rolling Transaction • Activity-based – Rolling Volume • Activity-based – Rolling Percentage • Activity-based – Global Risk Mitigation Protection for Transaction/Volume/Percentage **For all other RiskControlTypes** – not applicable, should be set to 0 and will be ignored if populated with any other value.	Yes	Yes
PercentageLimit	i32	64	4	Percentage (%). **Must be specified for the following RiskControlTypes:** • Activity-based – Percentage **For all other RiskControlTypes** – not applicable, should be set to 0 and will be ignored if populated with any other value.	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
CountLimit	i32	68	4	Integer count. **Must be specified for the following RiskControlTypes:** • Activity-based – Rolling Transaction. Represents max # transactions over rolling time period • Activity-based – Rolling Volume. Represents max # contracts executed over rolling time period • Activity-based – Global Risk Mitigation Protection – Transaction/Volume/ Percentage. Represents max # breaches over rolling time period **For all other RiskControlTypes** – not applicable, should be set to 0 and will be ignored if populated with any other value.	Yes	Yes
BreachActionResponse	u8	72	1	0 = Not Applicable 1 = Notification 2 = Cancel Non-Auction Orders 3 = Block **For the following RiskControlTypes** – must be set as 1/2/3: • Activity-based – Rolling Transaction • Activity-based – Rolling Volume • Activity-based – Rolling Percentage • Gross Credit (Open + Executed) **For all other RiskControlTypes** – must be set as 0.	0 1 2 3	0 1 2 3
IOCAttribution	u8	73	1	0 = Not Applicable 1 = Include IOC and GTX orders in Activity-based calculations and cancellations 2 = Exclude IOC and GTXorders from activity-based calculations and cancellations **For the following RiskControlTypes** - must be set as 1 or 2: • Activity-based – Rolling Transaction • Activity-based – Rolling Volume • Activity-based – Rolling Percentage **For all other RiskControlTypes** – must be set as 0.	0 1 2	0 1 2

Field	Type	Offset	Len	Values	Arca Options	American Options
USDCalculation1	i64	74	8	Integer US Dollar calculation. **For the following RiskControlTypes** – will be populated with the **Open: ALL ORDERS calculation.** • Gross Credit (Open + Executed) **For all other RiskControlTypes** – will be set as 0.	0	0
USDCalculation2	i64	82	8	Integer US Dollar calculation. **For the following RiskControlTypes** – will be populated with the **Open: AUCTION ORDERS calculation.** • Gross Credit (Open + Executed) **For all other RiskControlTypes** – will be set as 0.	0	0
USDCalculation3	i64	90	8	Integer US Dollar calculation. **For the following RiskControlTypes** – will be populated with the **Executed: ALL ORDERS calculation.** • Gross Credit (Open + Executed) **For all other RiskControlTypes** – will be set as 0.	0	0
USDCalculation4	i64	98	8	Integer US Dollar calculation. **For the following RiskControlTypes** – will be populated with the **Executed: AUCTION ORDERS calculation.** • Gross Credit (Open + Executed) **For all other RiskControlTypes** – will be set as 0.	0	0
CountCalculation	u32	106	4	Integer count. **For the following RiskControlTypes** – will be populated with current calculation in Pillar.	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				• Activity-based – Global Risk Mitigation Protection – Transaction/Volume/Percentage. Represents # breaches over rolling time period **For all other RiskControlTypes** – will be set as 0.		
BlockedByBreach Indicator	u8	110	1	0 = Not Blocked by Breach 1 = Blocked by Breach 2 = Blocked by Arbitrage Check (Options Market Maker only) 3 = Blocked by Intrinsic Value Check (Options Market Maker only)	0 1 2 3	0 1 2 3
BlockedByKillSwit chIndicator	u8	111	1	0 = Not Blocked by Kill Switch 1 = Blocked by Kill Switch	0 1	0 1
ReinstatementRe quiredbySelf	u8	112	1	Indicates whether Reinstatement Approval from SELF (the Risk User to which this message is sent) is required for this Risk Entity upon breach 0 = Not Required 1 = Required	0 1	0 1
ReinstatementRe quiredbyOther	u8	113	1	Indicates whether Reinstatement Approval from OTHER Risk User(s) is required for this Risk Entity upon breach 0 = Not Required 1 = Required	0 1	0 1
Reserved	zchar(200)	114	200	*Bytes reserved for future use*	Yes	Yes

8.19 Risk Control Alert

User Type: Risk Admin and Market Maker

Stream Type: GT

For firms using Pillar Risk Controls, this message provides notification of threshold, breach, reinstatement and kill switch events.

Single Alert for Activity-based Risk Breach - upon breach of an Activity-based limit, Pillar will notify the firm with a single instance of the Risk Control Alert. The BreachActionRequest value originally specified via the Risk Limit Update Request will be echoed back on a single Risk Control Alert message in the BreachActionResponse field.

Options Market Maker Arbitrage & Intrinsic Value Breach - a Market Maker Quote or Market Maker order reject as a result of the Arbitrage or Intrinsic Value price checks (mandatorily applied in Pillar) will result in an automated risk breach action of Cancel Non-Auction Orders and Block across orders and quotes for the Underlying Symbol + MPID + MMID (MarketMaker field).

To re-enter the market, the MM must approve reinstatement via the Risk Action Request or the NYSE Pillar Trade Ops Portal. For more information, please refer to the **NYSE Pillar Risk Controls** document.

Arbitrage and Intrinsic Value rejects on non-MM orders do not trigger a breach.

UROUTs - upon breach due to Activity-based (transaction, volume, percentage), GRMP, Arbitrage Check (Options MM), Intrinsic Value Check (Options MM):

- UROUTs will follow for each cancelled order, including Market Maker Orders
- UROUTs will not be sent for Market Maker Quotes that get cancelled. The Risk Alert message serves as confirmation of the scope of quotes cancelled upon breach

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0333 Length = 305	Yes	Yes
SymbolID	u32	4	4	Risk Entity – Symbol (equities) or Underlying Symbol (options). Identification number assigned to the security. **May optionally be populated for the following RiskControlTypes:** • Activity-based – Rolling Transaction • Activity-based – Rolling Volume • Activity-based – Rolling Percentage • Activity-based – Global Risk Mitigation Protection for Transaction/Volume/ Percentage Populated = apply limit to individual underlying only Not Populated = apply limit to ALL underlyings for the specified risk entity **For all other RiskControlTypes** – not applicable.	Yes	Yes
MPID	zchar(4)	8	4	Risk Entity. Firm Identifier – MPID. Required.	Yes	Yes
MarketMaker	zchar(10)	12	10	Risk Entity. Options Market Maker identifier – alphanumeric MMID associated with the specified MPID. Populated if applicable.	Yes	Yes
MPSubID	zchar(4)	22	4	Risk Entity – SubID associated with the specified MPID.	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				Populated if applicable.		
FloorBrokerFirmCRD	u32	26	4	Risk Entity – CRD of NYSE Floor Broker Firm. Populated if applicable.		
ClearingNumber	zchar(5)	30	5	*Bytes reserved for future use.* Risk Entity – Clearing Number associated with the specified MPID. Populate if applicable.		
RiskUserCRD	u32	35	4	Risk User – CRD of the firm receiving this message.	Yes	Yes
RiskUserType	char	39	1	Risk User – type of firm receiving this message. E = Entering Firm C = Clearing Firm F = NYSE Floor Broker Firm O = Options Market Maker Firm	 E C O	 E C O
RiskControlType	u8	40	1	0 = Not Applicable 1 = Single Order Max Qty 2 = Single Order Max Notional Value 3 = *Reserved for future use* 4 = *Reserved for future use* 5 = Gross Credit (Open + Executed) 6 = Maximum Duplicative Orders 7 = *Reserved for future use* 8 = Activity-based – Rolling Transaction 9 = Activity-based – Rolling Volume 10 = Activity-based – Rolling Percentage 11 = Activity-based – Global Risk Mitigation Protection for Transaction/Volume/Percentage 12 = Reject ISO 13 = Reject Market Orders (except MOO) 14 = Reject MOO 15 = *Reserved for future use* 16 = *Reserved for future use* 17 = Reject Early Trading Session designation 18 = Reject Late Trading Session designation 19 = Reject Restricted Symbol (underlying) 20 = Reject Sell Short for Symbol 21 = Reject Sell Short Exempt for Symbol 22 = Single Order Maximum Quantity as Percentage of Symbol ADV	0 1 2 6 8 9 10 11 12 13 14 19	0 1 2 6 8 9 10 11 12 13 14 19

Field	Type	Offset	Len	Values	Arca Options	American Options
				23 = Limit Order Price Protection Equities - Custom Limits 24 = Limit Order Price Protection Equities - Early/Late Trading Multiplier 25 = Limit Order Price Protection Equities - Closing Only Multiplier 26 = Limit Order Price Protection Options - Single Leg Custom Limits 27 = Limit Order Price Protection Options - Complex Custom Limits 28 = Require LocateBroker on Sell Short and Sell Short Exempt orders	26 27	26 27
USDLimit	i64	41	8	Integer US Dollar limit. **Must be specified for the following RiskControlTypes:** • Single Order Max Notional Value • Gross Credit (Open + Executed) **For all other RiskControlTypes** – not applicable.	Yes	Yes
TimeLimit	i32	49	4	Microsecond time period. **Must be specified for the following RiskControlTypes:** • Activity-based – Rolling Transaction • Activity-based – Rolling Volume • Activity-based – Rolling Percentage • Activity-based – Global Risk Mitigation Protection for Transaction/Volume/Percentage **For all other RiskControlTypes** – not applicable.	Yes	Yes
PercentageLimit	i32	53	4	Percentage (%). **Must be specified for the following RiskControlTypes:** • Activity-based – Percentage **For all other RiskControlTypes** – not applicable.	Yes	Yes
CountLimit	i32	57	4	Integer count. **Must be specified for the following RiskControlTypes:** • Activity-based – Rolling Transaction. Represents max # transactions over rolling time period • Activity-based – Rolling Volume. Represents max # contracts executed over rolling time period	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
				• Activity-based – Global Risk Mitigation Protection – Transaction/Volume/ Percentage. Represents max # breaches over rolling time period **For all other RiskControlTypes** – not applicable.		
BreachAction Response	u8	61	1	0 = Not Applicable 1 = Notification 2 = Cancel Non-Auction Orders 3 = Block **For the following RiskControlTypes** – must be set as 1/2/3: • Activity-based – Rolling Transaction • Activity-based – Rolling Volume • Activity-based – Rolling Percentage • Gross Credit (Open + Executed) **For Activity-based – Global Risk Mitigation Protection for Transaction/Volume/ Percentage** – always configured as 2 (Cancel Non-Auction Orders) and 3 (Block) **For all other RiskControlTypes** – must be set as 0.	0 1 2 3	0 1 2 3
IOCAttributio n	u8	62	1	0 = Not Applicable 1 = Include IOC and GTX orders in Activity-based calculations and cancellations 2 = Exclude IOC and GTXorders from activity-based calculations and cancellations **For the following RiskControlTypes** - must be set as 1 or 2: • Activity-based – Rolling Transaction • Activity-based – Rolling Volume • Activity-based – Rolling Percentage **For all other RiskControlTypes** – must be set as 0.	0 1 2	0 1 2
USDCalculati on1	i64	63	8	Integer US Dollar calculation. **For the following RiskControlTypes** – will be populated with the **Open: ALL ORDERS calculation.**	0	0

Field	Type	Offset	Len	Values	Arca Options	American Options
				• Gross Credit (Open + Executed) **For all other RiskControlTypes** – will be set as 0.		
USDCalculation2	i64	71	8	Integer US Dollar calculation. **For the following RiskControlTypes** – will be populated with the **Open: AUCTION ORDERS calculation.** • Gross Credit (Open + Executed) **For all other RiskControlTypes** – will be set as 0.	0	0
USDCalculation3	i64	79	8	Integer US Dollar calculation. **For the following RiskControlTypes** – will be populated with the **Executed: ALL ORDERS calculation.** • Gross Credit (Open + Executed) **For all other RiskControlTypes** – will be set as 0.	0	0
USDCalculation4	i64	87	8	Integer US Dollar calculation. **For the following RiskControlTypes** – will be populated with the **Executed: AUCTION ORDERS calculation.** • Gross Credit (Open + Executed) **For all other RiskControlTypes** – will be set as 0.	0	0
CountCalculation	u32	95	4	Integer count. **For the following RiskControlTypes** – will be populated with current calculation in Pillar. • Activity-based – Global Risk Mitigation Protection – Transaction/Volume/Percentage. Represents # breaches over rolling time period **For all other RiskControlTypes** – will be set as 0.	Yes	Yes

Field	Type	Offset	Len	Values	Arca Options	American Options
RiskActionType	u8	99	1	0 = Not Applicable 1 = Query Risk Entity for current Risk Control configs/calculations/status 2 = Kill Switch – Block 3 = Kill Switch – UnBlock 4 = Kill Switch – Cancel Auction Orders 5 = Kill Switch – Cancel Non-Auction Orders 6 = Kill Switch – Cancel GTC Orders 7 = Approve Reinstatement 8 = Risk Entity Reinstated (all necessary reinstatement approvals received; reinstatement processed)	0 2 3 8	0 2 3 8
ThresholdBreachLevel	u8	100	1	0 = Not Applicable 1 = Greater than 50% 2 = Greater than 75% 3 = Greater than 90% 4 = Greater than 100% **For the following RiskControlTypes** – must be set as 1/2/3/4: • Gross Credit (Open + Executed) **For all other RiskControlTypes** – will be set as 0.	0	0
BlockedByBreachIndicator	u8	101	1	0 = Not Blocked by Breach 1 = Blocked by Breach 2 = Blocked by Arbitrage Check (Options Market Maker only) 3 = Blocked by Intrinsic Value Check (Options Market Maker only)	0 1 2 3	0 1 2 3
BlockedByKillSwitchIndicator	u8	102	1	0 = Not Blocked by Kill Switch 1 = Blocked by Kill Switch	0 1	0 1
ReinstatementRequiredbySelf	u8	103	1	Indicates whether Reinstatement Approval from SELF (the Risk User to which this message is sent) is required for this Risk Entity upon breach 0 = Not Required 1 = Required	0 1	0 1
ReinstatementRequiredbyOther	u8	104	1	Indicates whether Reinstatement Approval from OTHER Risk User(s) is required for this Risk Entity upon breach 0 = Not Required 1 = Required	0 1	0 1
Reserved	zchar(200)	105	200	*Bytes reserved for future use*	Yes	Yes

8.20 Complex Series Request Acknowledgement

User Type: Complex Options - All users

Stream Type: GT

This message is provided by the Exchange in response to a new complex series request.

Field	Type	Offset	Len	Values	Arca Options	American Options
Msghdr	MsgHeader	0	4	Type = 0x0358 Minimum Length = 42	Yes	Yes
TransactTime	Timestamp	4	8	Exchange application time.	Yes	Yes
ClOrdID	u64	12	8	Unique ID of the message as assigned by the firm. Pillar will validate that the ClOrdID is unique for the combination of Username + MPID that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID. Customer defined.	Yes	Yes
ReasonCode	u16	20	2	These reason codes are provided by the matching engine and qualify the event that produced the message. See Appendix for list of values.	Yes	Yes
SymbolID	u32	22	4	The symbol id of the complex instrument.	Yes	Yes
Side	u8	26	1	1 = Buy (Default) 2 = Sell	1	1
RepeatingGroups	u8	27	1	Indicates the number of repeating groups included in the message.	Yes	Yes
→ Repeating Group						
→ LegSymbolID	u32	28	4	Identification number assigned to the option series.	Yes	Yes
→ LegRatioQty	u16	32	2	The ratio of quantity for this individual leg. 1 - 65,535 Leg order quantity is determined by OrderQty*LegRatioQty, the resulting value cannot exceed 999,999.	Yes	Yes
→ LegSide	u8	34	1	1 = Buy 2 = Sell	1 2	1 2

9. Appendix A: Liquidity Indicators

Pillar will populate the 'LiquidityIndicator' field on Execution Report fills. This value represents the conditions under which an order was executed and whether it added or removed liquidity from the Exchange order book. Billing rates are determined in part by this value.

A list of Liquidity Indicators is available at the web link below:

https://www.nyse.com/publicdocs/nyse/NYSE_Pillar_Reason_Codes_and_Liquidity_Indicators.xlsx

10. Appendix B: Pillar Reason Codes

Pillar will return a set of event reason codes in the 'ReasonCode' field on messages from the exchange to firm. These codes qualify the event that produced the message.

A list of Pillar Reason Codes is available at the web link below:

https://www.nyse.com/publicdocs/nyse/NYSE_Pillar_Reason_Codes_and_Liquidity_Indicators.xlsx

11. Appendix C: Order Types

An inventory of the options order types and modifiers available to firms via the Pillar Binary Gateway is available at the web link below:

https://www.nyse.com/publicdocs/NYSE_Pillar_Binary_Gateway_Order_Type_Matrix.xlsx

12. Document Version History

Date	Spec Version #	Change Summary
3/12/2024	3.20	Order type support now available: • Arca Options - Single Leg and Complex Customer to Customer Cross • American Options - Single Leg and Complex Customer to Customer Cross, Complex CUBE and Complex CUBE AON
11/3/2023	3.19	Added support for GroupID field with Cancel and Block, and Unblock actions. • Appendix B - added Pillar Reason Code 329 Order types pending rule approval: • American Options - Customer to Customer Cross
10/2/2023	3.18	Added 0 as a valid value for *BOLDDesignation* for ARCO Order types pending rule approval: • Arca Options - Single Leg and Complex Customer to Customer Cross

		• American Options - Complex Customer to Customer Cross, CUBE and CUBE AON
6/28/23	3.17	NYSE Arca & American Options supported functionality to be available in September 2023: • Added support for additional Pre-trade Risk Controls for orders only (except Limit Order Price Protection applies to both orders and Market Maker Quotes) - Max Duplicative Orders, Reject ISO, Reject Market Orders (except MOO), Reject MOO, Reject Restricted Symbol, Limit Order Price Protection - Single Leg & Complex • Removed applicability of Single Order Max Quantity & Single Order Max Notional Value to Market Maker Quotes. Orders only will continue to be subject to these risk controls • Streamlined messaging for Risk Control Acknowledgement & Risk Control Alert o Risk Controls section - updated session entitlements based on MPIDs configured for use on the session & the MMIDs/SubIDs associated with those MPIDs, instead of all identifiers associated with the firm's CRD o *BreachActionResponse* field - value 2 is updated from Cancel Non-Auction Orders to represent Cancel Non-Auction Orders & Block o A single ack or alert message will be sent in response to a request and upon Activity-based limit breach, instead of multiple messages that separately represent notification, cancel non-auction orders & block Updated data type of field *MPVClassName* in Minimum Price Variant Class Reference Data message.
6/6/2023	3.16	Added support for tags *OptionalDataExposed* and *OptionalDataCovered* within message type *New Order Cross*. Updated data type of field *BOLDDesignation* in *Session Configuration Request*. Appendix A: Addition of MIAX Sapphire routing code
5/8/2023	3.15	Removed ExecInst = 8 (Non-Displayed) as a valid instruction Removed MinQty as a valid instruction Options Market Maker Symbol Appointment values for MMType for NYSE American Options

		Added valid value 9 (Cross Order reject) for tag RejectType for Application Layer Reject Appendix A: Addition of MEMX Options routing code Appendix B: R308 modified from 'COA Not Running' to 'Auction Not Running' Appendix B: Addition of reject codes: 311-328 NYSE Arca & American Options supported functionality to be available in September 2023 • Added a new message type "New Order Cross". • Updated the New Order message section and BitfieldOrderInstructions to support Cross Orders. • Complex *Price* support from -99,999.99 - 99,999.99 to -214,748.36 - 214,748.36 • *SpecialOrdType* - value "11" Customer to Customer Cross • *IOCAttribution* - Exclusion of GTX orders from activity-based calculations and cancellations • Updated Liquidity Indicators
2/10/2023	3.14	Self-Trade Prevention - added support for ClientID based STP. Message Throttling - added message weights for Risk Limit Update Request. Updated Liquidity Indicators for NYSE American Options in support of CUBE and Market Makers. Removed Facilitating CUBE codes as Price Improvement CUBE will be available for all order sizes in NYSE American Options.
12/21/2022	3.13	Removed ALO order and quote support for American options
9/15/2022	3.12	Identified that Done for Day messages are sent out 30 minutes following the late series close time (4:45p). Bulk Cancel Request has been updated to support the Blocking and Unblocking of market maker orders from market maker sessions.
9/7/2022	3.11	Message Throttling - updated details on counting New Bulk Quote message toward the throttle rate.
8/24/2022	3.10	Message Throttling - added details on counting New Bulk Quote message toward the throttle rate.
8/10/2022	3.9	Trading Services - added section "Pillar Denial of Service Restrictions" Message Throttling - added details for "Queue and Reject" handling of New Bulk Quote messages

		Risk Control Alert - UROUTs will be suppressed for Market Maker Quotes cancelled upon breach due to Activity-based Risk, GRMP, Arbitrage Check, and Intrinsic Value Check
7/22/2022	3.8	Added the value range supported for LegRatioQty Added clarification to identify that Application Rejects in response to a Bulk Quote request will not result in the cancellation of standing quotes. Added clarification to LegOpenClose that it must be provided in the order of lowest LegSymbolID to highest LegSymbolID
7/6/2022	3.7	Added a note under New Order Single section to inform the deferral of AON, FOK and MTS order types.
5/12/2022	3.6	Added additional details for the Bulk Quote Acknowledgement, specifically to identify that the repeating group will be 0 when all quotes in a New Bulk Quote have been accepted.
4/8/2022	3.5	Added support for tag *MultilegReportingType* along with a u8 and u16 reserve fields in place of the previously unused DisplayLiqInd in Execution Report. Modified the support of the Bulk Quote Acknowledgement, specifically the QuoteAck Repeating Group will only represent rejected quotes in response to a New Bulk Quote message.
2/9/2022	3.4	GTC Restatement Messages - clarified that for options series expiration, Pillar will send an unsolicited cancel message (AckType = 11) at market close time. Underlying Symbol Reference Data - in UnderlyingType field, added value I = Units. Session Configuration Acknowledgement - in UserSessionType field, added value 12 = Risk Admin. Order Single/Complex Modify/Cancel Request Acknowledgment and UROUT - clarified that OrderQty field will be set to 0 for Bulk Cancel Ack. Risk Action Request - clarified that SymbolID field must be populated to Query or Approve Reinstatement for Activity-based Rolling Transaction/Volume/Percentage risk controls. Risk Control Alert - clarified that RiskUserType field describes the firm receiving the message, consistent with RiskUserCRD field.
11/3/2021	3.3	Series Reference Data message - updated data type of OCCSymbolRoot field as char(24) instead of zchar(24). MMID Configuration & Options Market Maker Symbol Appointment Reference Data messages - clarification that these messages will not be sent to Risk Admin sessions.

		Session Configuration Acknowledgement - corrected length of the last field (reserved bytes) as Char(49) instead of Char(50). Added support to Market Maker sessions for Risk Control messages as indicated in following sections of spec - Risk Controls, Risk Limit Update Request, Risk Action Request, Risk Control Acknowledgement, Risk Control Alert. Added support for cancel with block and unblock actions for Market Maker quotes in the Bulk Cancel request. Clarified that Market Maker quotes cancelled due to a Bulk Cancel request will not receive individual UROUT messages. Message Throttling - normalized Risk Admin session throttle rate to 500 messages per rolling 100 milliseconds, same as all other session types. Order Priority Update Acknowledgement - clarified that for repricing ack, OrderQty field will be populated with the leaves quantity of the order. Fields OptionalData and UserData - clarified that single quotation marks are prohibited, in addition to double quotation marks. Fields TransactTime and RepeatingGroups added to the following messages: Bulk Quote Acknowledgment, Complex Series Request Acknowledgement Appendix B - added Pillar Reason Code 310.
9/24/2021	3.2	While mapping orders and executions to NYSE Market Data, *GTCIndicator* will always be 0. Corrected Document Version History for v3.1 (8/13/21) - the Data Type "Price" is signed and "uPrice" is unsigned, consistent with definitions elsewhere in the specification. Added note to *DeliverToCompID* to indicate that it is only supported for American Options DOMM and American Options PFOF. Application Layer Reject - clarified that this message is used to reject those request messages indicated in the RejectType field. Risk Control Alert - clarified that the RiskUserCRD field of this message type refers to the CRD of the firm receiving the message. BitfieldOrderInstructions - Single-leg Options - Support for ' Proactive trade non display' removed from *ProactiveIfLocked* field. Appendix A - clarified that liquidity code OL applies to all options market participants. Appendix B - added Pillar Reason Codes 307-309.

8/13/2021	3.1	Data Types - updated definition of "Price" to be signed integer; added new data type "uPrice" as unsigned integer. Clarified fields throughout spec as one of these two types. Options Market Maker Symbol Appointment Reference Data message - length of the '*Reserved*' field is updated from 106 to 50. *ExtendedExecInst* value for COA orders changed from 15 to 17. Updated *ClearingFirm* and *ClearingAccount* field descriptions to clarify that only numeric characters are allowed, and no preceding zeros allowed. MMID Configuration message - firms are advised NOT to use this message, as it will be eliminated in a future release. Instead, use the message Options Market Maker Symbol Appointment Reference Data. On all order and Market Maker Quote related messages, changed label of *MMID* field to be *MarketMaker* (alphanumeric format), and *ContraMMID* field to be *ContraMarketMaker* (alphanumeric format). New Bulk Quote message - clarified that *MMSentTime* must be specified. Risk Control Messages: - Clarified *RiskUserCRD* and *RiskUserType* field descriptions to reflect that these fields refer to the owner of the risk control represented by the message - CountCalculation - will be populated only for Activity-based - Global Risk Mitigation Protection (GRMP) risk control type Appendix B - added code 400
7/16/2021	3.0	Removed Equity related details. GTC Restatement Messages - clarification that at GTC load time, a prior day GTC order canceled overnight due to underlying corporate action, delisting, etc. will result in an unsolicited order reject. At market close, a GTC order cancelled due to series expiration will receive a Done for Day message. Bulk Cancel Request - when CancelScope = 1, BulkAction must be 0. Added AuctionID tag to 'New Order Single/Complex and Cancel/Replace Request', and 'Order and Cancel/Replace Acknowledgement' messages. Invalid values removed from RiskControlType tag in 'Risk Limit Update Request', 'Risk Action Request' and 'Risk Control Alert' messages.New Liquidity Indicators added to Appendix A. Appendix B - updated text for Pillar Reason Codes 238, 298, 299, 303; added codes 304-306.

5/28/2021	2.2	Execution Report - Variant 2 (options only) - updated size/data type of OpenClose field to u8; corrected message offset for "Optional Add Ons." Removed support for electronic Cabinet orders. Options Market Maker Symbol Appointment Reference Data - clarified that Pillar will send an instance of this message intraday upon change in MMType for a given underlying symbol appointment. Complex Order/Cancel-replace - added detail to LegOpenClose field regarding validation of number of legs in the complex series. New Bulk Quote - added clarification regarding quote uniqueness and quoting at multiple price levels. Application Layer Reject Variant 2 message - for options complex series, this message is used to reject a Complex Series Request message, in which case the "SymbolID" field will be populated with the underlying symbol identifier. Risk Controls: - Updated values in fields: o RiskControlType - added support for value 0 (Not Applicable) on Risk Action Request, Risk Control Acknowledgement, and Risk Control Alert messages o RiskActionType - added support for value 0 on Risk Control Acknowledgement and Risk Control Alert messages o IOCAttribution - clarification that value must be set to 1 or 2 for Activity-based Risk Controls - Risk Control Acknowledgement message - changed name of field BreachActionRequest to BreachActionResponse - Risk Control Acknowledgement and Risk Control Alert messages - updated details on number of ack and alert messages to expect for Activity-based Risk Controls - Message Throttling - added throttle rate of 100 messages per 100 milliseconds for Risk Admin sessions Cancel on Disconnect and Bulk Cancel - added note that Fill or Kill (FOK) and Open Outcry orders are excluded from cancellation. Appendix A - added support for liquidity indicators "OL" and "RBN" Appendix B - added Pillar Reason Codes 284-289 and 293-303. Updated text for codes 20 and 80 to cover series in addition to symbol ("symbol/series").
4/26/2021	2.1	New Pillar Reason Codes added to Appendix B. i32 and i64 added to table under Data Type section.

		LegOpenClose - length of field is changed from 2 to 8 bytes; clarification that this field must be set to 0 for all non-complex (single-leg option and equity) orders, else will be rejected. Data type of WorkingPrice field for options is changed from 'Price' to 'i64'. Data type of SymbolID filed in 'Complex Series Request Acknowledgement' message is changed from 'zchar(24)' to 'u32'. Trade Bust/Correct - Variant 2 - clarification that for complex order busts/corrections, this message will be sent at the leg level only. Application Layer Reject - Variant 2 - added values to RejectType field - 7 (Risk Limit Update Request reject), 10 (New Complex Series Request reject), and 11 (Risk Action Request reject). FIX Drop Copies - Market Participant Filters - Clearing Number - added note regarding message delivery when the values specified in ClearingAccount (FIX-440) and ClearingFirm (FIX-439) FIX tags map to the same clearing firm. Added note to state the numeric requirement of ClearingFirm field. Risk Controls: - Removed support for Clearing Firm users and the Risk Entities MPID + Clearing Number and MPID + SubID + Clearing Number - Activity-based rolling time windows - clarification that minimum value is 100,000 microseconds and maximum value is 300,000,000 microseconds; corrected description of TimeLimit field as microsecond level granularity

3/12/2021	2.0	NYSE Arca and American Options:
		- Added support for Risk Controls
		  o Added section Trading Services → Risk Admin Sessions
		  o Added message types - Risk Limit Update Request, Risk Action Request, Risk Control Acknowledgement, Risk Control Alert
		- Various message types - clarification that all reference data messages will be published to Stream Type: REF only (not GT)
		- MMID Configuration message - updated descriptions of MarketMaker and MMID fields. Clarified that this message will be sent intraday in the event of an intraday MMID addition.
		- MPID Configuration message - clarified that this message will be sent intraday in the event of an intraday MPID addition.
		- Options Market Maker Symbol Appointment Reference Data message
		  o msghdr - corrected message Length as 106 bytes
		  o SymbolID - corrected data type as u32
		- Session Configuration Request/Acknowledgement - corrected BOLDDesignation values for NYSE American Options
		- SelfTradeType field - if 0 is specified, the explicit value (1-5) configured for the session will be sent back on response messages

		- Bulk Cancel Request Variant 2 message
		    o Added values to BulkAction field to specify cancellation of single leg, complex, or both types of orders
		    o Clarification that if MMID field is not populated, quotes/orders for all MMIDs associated with all MPIDs configured for use on that session will be cancelled
		- Order Single Modify/Cancel Request Acknowledgment and UROUT Variant 2 message - added TargetCancelMPID field
		- Application Layer Reject Variant 2 message - for Options Market Maker sessions, this message may be used to reject the entire New Bulk Quote, in which case the "SymbolID" field will be populated with the *underlying* symbol identifier
		- Pillar Reason Codes (Appendix) - added new reason codes for options markets
		- Added support for Complex Series request and Complex order support (these changes also affect the below single-leg option messages):
		    o Data type of price field in Variant 2 of the following messages changed from 'price' to 'i64':
		        ▪ New order and Cancel/Replace
		        ▪ Order and Cancel/Replace Acknowledgement
		        ▪ Order Modify/Cancel Request Acknowledgment
		        ▪ Execution Report
		    o A new field 'LegOpenClose' added to Variant 2 of the following messages:
		        ▪ New order and Cancel/Replace
		        ▪ Order and Cancel/Replace Acknowledgement
		    o Message length change in Variant 2 of the following messages:
		        ▪ New order and Cancel/Replace
		        ▪ Order and Cancel/Replace Acknowledgement
		        ▪ Execution Report

1/13/2021	1.1	NYSE Arca and American Options:
		- Series Reference Data - updated values in SeriesType field.
		- Session Configuration Request/Acknowledgement - added BOLDDesignation = 8 for No BOLDDesignation defaulting
		- Options Market Maker Symbol Appointment Reference Data - added field AppointmentStatus and details regarding intraday changes to underlying symbol appointments
		- Added message types:
		    o Order Cancel Request - Variant 2 (options only)
		    o Order Modify Request - Variant 2 (options only)
		- Bulk Cancel Request - Variant 2 (options only)
		    o TargetCancelUsername - renamed field; previously entitled "Username"

		o TargetCancelMPID - added new field o Added processing details for the above fields - Cancel/Replace Request - clarification that MPID and MMID must be the same as the original order intended for replacement - Execution Report - Variant 2 (options only): o ParticipantType - added value 0 (Not Applicable) o LiquidityIndicator - updated field description and values - Trade Bust/Correct - Variant 2 (options only) - added values to BustCorrectIndicator field - Removed support for ExtendedExecInst = 1 (Add Liquidity Only); only value 13 = Add Liquidity Only (Non-Taking ALO) will be supported - Removed support for MMQuoteType = 3 (Taking ALO) and 5 (Taking Repricing ALO)
11/9/2020	1.0	Added support for NYSE Arca and American Options - single leg orders, reference data, GTC restatement acknowledgments, market maker quoting, and bulk cancelation. Added section “Message Variant 2”; re-titled certain existing message types as “Variant 1 (equities only).” Added placeholders for the following functionality - complex orders, cross orders, risk controls.