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# **NYSE Pillar Gateway Binary Protocol Specification**

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NYSE  
NYSE Arca Equities  
NYSE American Equities  
NYSE National Equities

March 29, 2019  
SPEC VERSION 3.2  
PROTOCOL VERSION 1.1

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# 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	NYSE Arca Options
NYSE Arca Equities	NYSE Amex Options
NYSE American Equities	NYSE Bonds
NYSE National Equities	

## 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, 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.”

Additionally, sequence numbers on the new streams will start with 1. The new values 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, and sequence numbers on the streams will start with 1. The new values 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 MOO, LOO, MOC, LOC, 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 MOO, LOO, MOC, and LOC orders.

## **1.4 Contact Us**

The NYSE Group Market Support teams have a centralized phone number: +1 212-896-2830. 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
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	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	<b>“Trader to Gateway”</b> – individualized stream to which a particular firm routes all their Sequenced and Unsequenced messages destined for the Pillar trading platform.
GT	Outbound	Read	<b>“Gateway to Trader”</b> – individualized stream to which Pillar publishes all outbound Sequenced and Unsequenced messages to a particular firm, including both transactional and Reference Data messages.



<b>REF</b>	Outbound	Read	<b>"Reference Data"</b> – individualized stream to which Pillar publishes Symbol, MPV Class, MPV Level, and Session Configuration Acknowledgment reference data.
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## 4. Data Structures

### 4.1 MsgHeader

Target Audience: 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
<b>type</b>	u16	0	2	Message type. See Application Layer Payload message formats
<b>length</b>	u16	2	2	Total message length, including this header + all message payload/add-ons that follow this header.

### 4.2 SeqMsgId

Target Audience: All

SeqMsgId serves as the unique identifier of each SeqMsg message on the TG (Trader to Gateway) and GT (Gateway to Trader) streams. 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
<b>stream_id</b>	StreamId	0	8	Target stream identifier
<b>seq</b>	u64	8	8	Message sequence number, starting from 1

### 4.3 SeqMsg

Target Audience: 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.

Field	Type	Offset	Len	Values
<b>msghdr</b>	MsgHeader	0	4	Type: 0x0905, Minimum Length = 32
<b>seqmsg</b>	SeqMsgId	4	16	Globally unique message identifier
<b>reserved</b>	u32	20	4	Reserved field
<b>timestamp</b>	Timestamp	24	8	Time of message transmission.
<b>payload</b>	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

Target Audience: All

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

Field	Offset	Width (Bits)	Values	NYSE	American EQ	National EQ	Arca EQ
<b>Reserved</b>	0	13	Bits reserved for future use	Yes	Yes	Yes	Yes
<b>SpecialOrdType</b>	13	4	0 = No SpecialOrdType 1 = DMM Open/Re-open/Close with or without Auction (AOC) 2 = DMM Pre-auction 3 = DMM After-auction	0 1 2 3	0	0	0
<b>LocateReqd</b>	17	1	0 = No LocateReqd 1 = LocateReq for SSH orders	0 1	0 1	0 1	0 1
<b>RetailIndicator</b>	18	1	0 = Not retail 1 = Retail order	0 1	0	0	0 1
<b>AttributedQuote</b>	19	3	0 = Not Attributed 1 = Attributed for Market Data Feeds 2 = Include in Broker Volume 3 = Attributed for Market Data Feeds, and Include in Broker Volume	0	0 1	0 1	0 1
<b>OrderCapacity</b>	22	3	1 = Agency 2 = Principal 3 = Riskless Principal 4 = Error Account (NYSE Floor Broker only)	1 2 3	1 2 3	1 2 3	1 2 3
<b>InterestType</b>	25	3	0 = No InterestType 1 = <i>Reserved for future use</i>	0	0	0	0

Field	Offset	Width (Bits)	Values	NYSE	American EQ	National EQ	Arca EQ
			2 = <i>Reserved for future use</i> 3 = <i>Reserved for future use</i> 4 = Q-Order 5 = Capital Commitment Order (CCO) 6 = Capital Commitment Order (CCO) – partial fill contra-side	5 6	4	4	4
<b>TradingSessionID</b>	28	3	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)	1 2  4* 5* 6*	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
<b>TimeInForce</b>	31	3	1 = Day 2 = IOC 3 = At the Opening 4 = On Close	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
<b>ProactivelyLocked</b>	34	3	0 = No ProactivelyLocked 1 = Proactive route 2 = Proactive trade non display (Non-display remove liquidity for non-displayed orders locked by contraside ALOs)	0	0 1	0 1 2	0 1 2

Field	Offset	Width (Bits)	Values	NYSE	American EQ	National EQ	Arca EQ
<b>SelfTradeType</b>	37	3	0 = Use current Session Configuration STP setting for the Username	0	0	0	0
			1 = No Self Trade Prevention	1	1	1	1
			2 = Cancel Newest	2	2	2	2
			3 = Cancel Oldest	3	3	3	3
			4 = Cancel Both		4	4	4
			5 = Cancel Decrement		5	5	5
<b>CancellInstead OfReprice</b>	40	4	0 = Not applicable (follow default order behavior)	0	0	0	0
			1 = Cancel order instead of repricing – for LULD only		1	1	1
<b>RoutingInst</b>	44	4	0 = No RoutingInst	0	0	0	0
			1 = Non-routable	1	1	1	1
			2 = Routable	2	2	2	2
			3 = Directed (Primary Only)		3	3	3
			4 = Directed + Routable (PO+S)		4	4	4
			5 = Primary Market until 9:45		5	5	5
			6 = Primary Market after 3:55		6	6	6
			7 = BOTH Primary Market until 9:45 AND Primary Market after 3:55		7	7	7
			8 = Minimum Fill (must be entered with MinQty field populated with a non-zero value)	8	8	8*	8*
			*Support introduced beginning on a date announced via Trader Update				
<b>ExtendedExecInst</b>	48	4	0 = No ExtendedExecInst	0	0	0	0
			1 = Add Liquidity Only (ALO)	1		1	1
			2 = No trade against MPL		2	2	2
			3 = No route to IOI			3	3
			4 = No trade against MPL and no route to IOI			4	4
			5 = Retail Order Type 1	5			5
			6 = Retail Order Type 2*				6*
			7 = Retail Provider	7			7
			8 = Imbalance Offset	8	8		8
			9 = Discretionary Peg		9		
			10 = Dark (Non-Displayed) Primary Peg		10		
			*Support eliminated on a date announced via Trader Update				

Field	Offset	Width (Bits)	Values	NYSE	American EQ	National EQ	Arca EQ
<b>Execlnst</b>	52	4	0 = No Execlnst 1 = <i>Reserved for future use</i> 2 = <i>Reserved for future use</i> 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	0          4          7 8   9 10	0          3 4 5 6 7 8   9	0          3 4 5 6 7 8   9	0          3 4 5 6 7 8   9
<b>OrdType</b>	56	4	1 = Market 2 = Limit 3 = Inside limit 4 = Pegged	1 2   4	1 2 3 4	1 2 3 4	1 2 3 4
<b>Side</b>	60	4	1 = buy 2 = sell 3 = sell short 4 = sell short exempt 5 = cross 6 = cross short 7 = cross short exempt	1 2 3 4	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6

## 4.5 BitfieldFlowIndicator

Target Audience: All

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

Field	Offset	Width (Bits)	Values	NYSE	American EQ	National EQ	Arca EQ
<b>Throttled</b>	0	1	0 = Inbound message was not throttled 1 = Inbound message was throttled	0 1	0 1	0 1	0 1
<b>Reserved</b>	1	7	Bits reserved for future use	Yes	Yes	Yes	Yes

## 4.6 OptionalOrderAddOn – Equities Customer

Target Audience: Equities customers.

This is one of two data structures that a firm may choose to append to an Order or Cancel/Replace Request message. A maximum of one OptionalOrderAddOn structures may be sent on a single message – either the “Equities Customer” add-on or the “NYSE Floor Broker” add-on.

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	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0241, Length = 41	Yes	Yes	Yes	Yes
<b>DeliverToCompID</b>	zchar(5)	4	5	NYSE Agency Code or Floor Trader Badge.  Options Market Maker for Directed Order				
<b>MaxFloor</b>	u32	9	4	0 = No MaxFloor  Otherwise, must be entered in Round Lots.	Yes	Yes	Yes	Yes
<b>Reserved</b>	char(4)	13	4	Reserved for future use.	Yes	Yes	Yes	Yes
<b>Reserved</b>	char(8)	17	8	Reserved for future use.	Yes	Yes	Yes	Yes
<b>OffsetPrice</b>	Price	25	8	0 = No OffsetPrice  Otherwise, value must be greater than or equal to the minimum offset value (\$0.01) and must be in multiples of \$0.01.	Yes	Yes	Yes	Yes
<b>EffectiveTime</b>	Timestamp	33	8	Reserved for future use.				

## 4.7 OptionalOrderAddOn – NYSE Floor Broker

Target Audience: NYSE Broker Systems

This is one of two data structures that a firm may choose to append to an Order or Cancel/Replace Request message. A maximum of one OptionalOrderAddOn structures may be sent on a single message – either the “Equities Customer” add-on or the “NYSE Floor Broker” add-on.

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	NYSE Floor
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0242, Length = 50	Yes
<b>ParentFirmMPID</b>	zchar(4)	4	4	1 to 4 alpha characters	Yes
<b>ParentFirmCLOrdID</b>	u64	8	8	Refers to the CLOrdID of a parent firm order. Unique ID of the new Order, Cancel/Replace, Cancel, Modify, or 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
<b>IntroducingBadgelD</b>	zchar(4)	16	4	1 – 4 numeric characters	Yes
<b>BillTo</b>	zchar(5)	20	5	If the Broker will be billed for all NYSE transaction fees set value to “ALGO”. Otherwise, it should be set to the firm identifier assigned to the Algo Vendor.	Yes
<b>MaxFloor</b>	u32	25	4	0 = No MaxFloor  Otherwise, must be entered in Round Lots.	Yes
<b>Reserved</b>	char(4)	29	4	Reserved for future use.	Yes
<b>DOrderAuctionPrice</b>	Price	33	8	0 = No DOrderAuctionPrice  Otherwise, 0.01 - 999,999.99	Yes
<b>OffsetPrice</b>	Price	41	8	0 = No OffsetPrice  Otherwise, value must be greater than or equal to the minimum offset value (\$0.01) and must be in multiples of \$0.01.	Yes
<b>Reserved</b>	char(1)	49	1	Reserved for future use.	Yes

## 4.8 OptionalReportAddOn – NYSE Floor Broker

Target Audience: NYSE Broker Systems

This is a data structure that the Exchange will include on Execution Reports for an order originally sent by NYSE Floor Broker Systems and appended with the data structure “OptionalOrderAddOn – NYSE Floor Broker”.

Field	Type	Offset	Len	Values	NYSE Floor
msghdr	MsgHeader	0	4	Type = 0x0291, Length = 21	Yes
ParentFirmMPID	zchar(4)	4	4	1 to 4 alpha characters	Yes
ParentFirmCLOrdID	u64	8	8	Refers to the CLOrdID of a parent firm order. Unique ID of the new Order, Cancel/Replace, Cancel, Modify, or 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
BillTo	zchar(5)	16	5	If the Broker will be billed for all NYSE transaction fees set value to “ALGO”. Otherwise, it should be set to the firm identifier assigned to the Algo Vendor.	Yes

## 5. Reference Data

### 5.1 Start of Day

The “Gateway to Trader” (GT) and “Reference Data” (REF) streams contain a queue of Application Layer Payload messages as follows.

- **Symbol reference data** – For each symbol available for trading on a given gateway session, Pillar will publish a “Symbol Reference Data” message. The message contains the SymbolID used by the Exchange to uniquely identify that security as well as other information governing order entry for it such as RoundLotSize, MaxOrderPrice, and MPVClassName.



Instead of ticker symbol, firms must use the associated SymbolID on each message requiring symbology. As such, firm applications will be expected to read request all the queued messages on their GT or REF stream 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 DMM sessions** - an additional “DMM Symbol Reference Data” message is published for each of the firm’s assigned securities.

- **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 \$1.00 or below \$1.00), 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. The message provides the character representation of a Market Maker, LMM, SLP, SLMM or DMM and the integer MMID value assigned to it (remains static from day to day). 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.
- **Session configuration settings** – An unsolicited “User Session Configuration Acknowledgment” message will be published to the REF stream, providing the firm with confirmation of their currently configured (default) settings for an individual gateway session.

## 5.2 Intraday

At any time during the course of a trading day, symbol reference data may be updated, MPID statuses may change, and firms may choose to change their session configuration settings.

- **Symbol additions and changes** – In the event of an intraday symbol addition or a change to an existing symbol’s reference data, a new “Symbol Equities Reference Data” message will be appended to the end of the GT and REF streams.

In that case, the most recent reference data message available for that symbol on the stream should be read by the firm application, and the old message with earlier sequence number may be disregarded.

**For DMM sessions** - if the update is to a Tape A symbol, a new “DMM Symbol Reference Data” message will be published to the sessions of the assigned DMM firm.

- **MPID status changes** – In the event that the status of an MPID changes intraday (typically by request of the firm), a new “MPID Configuration” message will be appended to the end of the GT and REF streams of all the gateway sessions configured to use that MPID. The new message will indicate the updated, current status.
- **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 appending to the GT and REF streams 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.

- **DMM Symbol Subscription** - the DMM firm may transfer subscription for a given symbol from one session to another. For details, see the “Symbol Subscription Request” and “Symbol Subscription Acknowledgement” sections of this specification.

## 5.3 Mapping Orders and Executions to NYSE XDP Market Data

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 to XDP
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 XDP 2.1 products:

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

XDP Field Name	Offset	Size (Bytes)	XDP Format	Description
<b>GTCIndicator</b>	0	1	Binary	In NYSE Pillar, this value will always be: 0 = Day Order
<b>SystemID</b>	1	1	Binary	Unique ID of the originating Pillar symbol partition. This value is found in the Symbol Index Mapping message's ID field
<b>MarketID</b>	2	2	Binary	ID of the Originating market in the Symbol Index Mapping
<b>TradeID</b>	4	4	Binary	Public TradeID as it will appear in XDP products

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

## 6. Trading Services

### 6.1 Self-Trade Prevention

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

- **STP Cancel Newest** – An incoming order marked with this designation will not execute against opposite side resting interest that is also marked with the STP designation for the same MPID + MPSubID (optional sub identifier). Instead, the incoming order or repriced order will be automatically cancelled back to the order originator. The resting order remains on the order book.
- **STP Cancel Oldest** – An incoming order marked with this designation will not execute against opposite side resting interest that is also marked with the STP designation for the same MPID + MPSubID (optional sub identifier). Instead, the resting order will be automatically cancelled back to the order originator. The incoming order will then continue to auto execute or be placed on the order book.
- **STP Cancel Both** – An incoming order marked with this designation will not execute against opposite side resting interest that is also marked with the STP designation for the same MPID + MPSubID (optional sub identifier). Instead, both the incoming order and the resting order will be cancelled back automatically.
- **STP Cancel Decrement** – An incoming order marked with this designation will not execute against opposite side resting interest marked with any of the STP designations for the same MPID + MPSubID (optional sub identifier). Instead, if both orders are equivalent in quantity, both orders will be cancelled back to the order originator. If the orders are not equivalent in quantity, the larger order is decremented by the quantity of the smaller order, and the smaller order is fully cancelled.

### 6.2 Message Throttling

Inbound messages from a given session are read at a rate of 500 messages per rolling 100 milliseconds (including all Stream and Application Layer Payload message types), according to the conditions below.

For DMM sessions - note that each individual message inside a multi-message counts toward the throttle limit.

Read State	Condition
Reading	$n \leq 500$
Not Reading	$n > 500$

$n$  is reset to 0 when  $C - T > 100$  milliseconds, where:

$n$  = number of messages firm sent during the current 100 millisecond window

$C$  = current time

$T$  = average point in time when  $n$  messages were sent by firm

When Pillar Gateway reads a message at time  $C$ :

$n$  is updated to  $n + 1$

$T$  is recalculated as  $T + (C - T)/(n + 1)$

A session becomes Throttled when  $n$  reaches a value of 500. 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 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)
  - Outbound messages will not be throttled and will be processed without impact to processing of inbound messages

**For DMM multi-message** - regardless of session configuration selected upon login, Pillar Gateway will always treat a multi-message as Queue and Process. TG Begin, TG End, and all messages in between will be queued and processed even if the session is configured for queue and reject.

## 6.3 FIX Drop Copies

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
- **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)

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 'MMID' field (integer representation), converted to its corresponding 'MarketMaker' field value (character representation), according to the MMID Configuration message.
- **OnBehalfOfCompID (115)** = binary 'DeliverToCompID'.
- **DeliverToCompID (128)** = binary 'MPID'.
- **DeliverToSubID (129)** = binary 'MPSubID'.
- **Account (1)** = binary 'UserData'.

## 6.4 Binary Echo Sessions

Binary Echo sessions may be established to provide duplicate copies of outgoing messages transacted over one or more of a firm's order entry sessions. A Binary Echo Session is configured with two streams as follows:

- **GT Stream** – provides aggregated copies of original messages from the GT streams of one or more specified order entry sessions. All original messages are included, except Reference Data message types, which are filtered out from delivery on the Binary Echo Session.

Messages delivered over this stream are formatted with two “SeqMsg” data structures. The first serves as the message header for the binary echo GT stream itself, with the SeqMsgID containing its StreamID and a sequentially incrementing sequence number.

The second “SeqMsg” data structure is an identical copy of the header from the original message sent over the order entry GT stream, with the SeqMsgID containing the original StreamID and sequence number. This is followed by the Application Layer Payload from the original message.

Binary Echo GT Stream Message Format:

	Field	Type	Offset	Len	Values
<b>SeqMsg structure of the message transmitted on Binary Echo GT Stream</b>	<b>msghdr</b>	MsgHeader	0	4	Type: 0x0905, Minimum Length = 64
	<b>seqmsg</b>	SeqMsgId	4	16	Globally unique message identifier
	<b>reserved</b>	u32	20	4	Reserved field
	<b>timestamp</b>	Timestamp	24	8	Time of message transmission.
<b>SeqMsg structure of original message from Order Entry GT Stream</b>	<b>msghdr</b>	MsgHeader	32	4	Type: 0x0905, Minimum Length = 32
	<b>seqmsg</b>	SeqMsgId	36	16	Globally unique message identifier
	<b>reserved</b>	u32	52	4	Reserved field
	<b>timestamp</b>	Timestamp	56	8	Time of message transmission.
<b>Application Layer Payload of original message from Order Entry GT Stream</b>	<b>payload</b>	MsgHeader	64	4	Message payload. The Application Layer Payload message (New Order, Execution Report, etc.) will begin here with its own MsgHeader

- **REF Stream** – provides a single stream of Reference Data messages for use by the Binary Echo Session.

## 7. Member Firm to Pillar - Application Layer Payload Messages

### 7.1 Session Configuration Request

Target Audience: 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).

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	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0220, Length = 74	Yes	Yes	Yes	Yes
<b>Username</b>	char(16)	4	16	Unique identifier of the gateway session – SenderCompID.	Yes	Yes	Yes	Yes
<b>CancelOnDisconnect</b>	u8	20	1	1 = Enable Cancel on Disconnect; Cancel – Day; Directed Orders (This will cancel all orders for the Session EXCEPT Auction orders – TIF = 2-At the Opening and 7-On Close)*	1	1	1	1
				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:  - Primary Close Only Market/Limit (PO + MOC/LOC) orders for NYSE symbols after 3:45 PM  - MOO/LOO orders for 1 minute prior to the Core Opening Auction	2	2	2	2

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				<p>- MOC/LOC orders during Closing Auction freeze; on NYSE, for primary symbols - MOC/LOC orders after the MOC/LOC cancellation cutoff time</p> <p>- On NYSE, for primary symbols - all orders after scheduled closing time</p> <p>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.</p> <p>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.</p>				
<b>ThrottlePreference</b>	u8	21	1	0 = Queue orders when throttled	0	0	0	0
				1 = Reject orders when throttled	1	1	1	1
<b>SelfTradePrevention</b>	u8	22	1	<p>Session level default for the STP value on all Order and Cancel/Replace requests entered on the session.</p> <p>Note: if the STP value is set on an individual Order or</p>				



Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				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	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
<b>OrderPriorityUpdateAckSubscription</b>	u8	23	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)	0  1	0  1	0  1	0  1
<b>Reserved</b>	char(50)	24	50	Bytes reserved for future use	Yes	Yes	Yes	Yes

## 7.2 Sequenced Filler Message

Target Audience: 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	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0282, Length = 4	Yes	Yes	Yes	Yes

## 7.3 New Order Single and Cancel/Replace Request

Target Audience: All

Stream Type: TG

This single message type is used as both a New Order message or a Cancel/Replacement message destined for either the NYSE Pillar Trading Engine or the NYSE Broker Systems (future phase).

- **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.

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** – This message is variable length, allowing the firm to send up to one of two optional add-ons 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.

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0240, Minimum Length = 65	Yes	Yes	Yes	Yes
<b>SymbolID</b>	u32	4	4	Identification number assigned to the security	Yes	Yes	Yes	Yes
<b>MPID</b>	zchar(4)	8	4	Firm Identifier – MPID.  On Cancel/Replace request, must match the MPID of the order intended for replacement.	Yes	Yes	Yes	Yes
<b>MMID</b>	u32	12	4	This value represents the integer representation of a Market Maker, LMM, SLP, SLMM or DMM, 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	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				credit for satisfying their marking making/liquidity obligations.				
<b>MPSubID</b>	char	16	1	Customer defined – identifies specific entity/trading desk of customer firm.	Yes	Yes	Yes	Yes
<b>ClOrdID</b>	u64	17	8	<p>Unique ID of the new Order, Cancel/Replace, Cancel, Modify, or Bulk Cancel request as assigned by the firm.</p> <p>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.</p> <p>Customer defined.</p>	Yes	Yes	Yes	Yes
<b>OrigClOrdID</b>	u64	25	8	Refers to the ClOrdID of a previously entered order.	Yes	Yes	Yes	Yes
<b>BitfieldOrder Instructions</b>	BitfieldOrder Instructions	33	8	<p>Bitfield containing various order attributes and modifiers.</p> <p>See data structure definition table for the positions and valid values of each bit.</p>	Yes	Yes	Yes	Yes
<b>Price</b>	Price	41	8	0.000001-999999.999999	Yes	Yes	Yes	Yes
<b>OrderQty</b>	u32	49	4	1 - 999,999,999	Yes	Yes	Yes	Yes
<b>MinQty</b>	u32	53	4	<p>0 = no MinQty</p> <p>Otherwise, Must be <math>\geq</math> Round Lot and <math>\leq</math> OrderQty</p>	Yes	Yes	Yes	Yes
<b>UserData</b>	char(8)	57	8	Customer defined up to 8 characters; only printable	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				ASCII characters allowed.				
<b>OptionalOrderAddOn</b>		65	4	<p>Data structure - one of two optional add-on structures may be appended to the Order message to make use of additional functionality.</p> <p>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.</p>	Yes	Yes	Yes	Yes

## 7.4 Order Cancel Request

Target Audience: All

Stream Type: TG

This message is used to cancel a single targeted order. Populate the field 'OrigClOrdID' with the ClOrdID of the order intended for cancellation.

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
<b>Msghdr</b>	MsgHeader	0	4	Type = 0x0280, Length =28	Yes	Yes	Yes	Yes
<b>SymbolID</b>	u32	4	4	Identification number assigned to the security	Yes	Yes	Yes	Yes
<b>MPID</b>	zchar(4)	8	4	<p>Firm Identifier – MPID.</p> <p>Must match the MPID of the order intended for cancellation.</p>	Yes	Yes	Yes	Yes
<b>ClOrdID</b>	u64	12	8	<p>Unique ID of the new Order, Cancel/Replace, Cancel, Modify, or Bulk Cancel request as assigned by the firm.</p> <p>Pillar will validate that the ClOrdID is unique for the combination of Username +</p>	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				MPID that entered the order, among open orders only. However, the firm is responsible for ensuring that the CIOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID.  Customer defined.				
<b>OrigCIOrdID</b>	u64	20	8	Refers to the CIOrdID of a previously entered order.	Yes	Yes	Yes	Yes

## 7.5 Order Modify Request

Target Audience: All

Stream Type: TG

This message is used to reduce the total number of shares/contract order quantity, or to change the side of an existing order between Sell, Sell Short, and Sell Short Exempt only, 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 CIOrdID (equal to the CIOrdID of the Modify Request).

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

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0270, Length =34	Yes	Yes	Yes	Yes
<b>SymbolID</b>	u32	4	4	Identification number assigned to the security	Yes	Yes	Yes	Yes
				Firm Identifier – MPID.				
<b>MPID</b>	zchar(4)	8	4	Must match the MPID of the order intended for modification.	Yes	Yes	Yes	Yes
				Unique ID of the new Order, Cancel/Replace, Cancel, Modify, or Bulk Cancel request as assigned by the firm.				
<b>CIOrdID</b>	u64	12	8		Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				<p>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.</p> <p>Customer defined.</p>				
<b>OrigClOrdID</b>	u64	20	8	Refers to the ClOrdID of a previously entered order.	Yes	Yes	Yes	Yes
<b>OrderQty</b>	u32	28	4	<p>1 - 999,999,999</p> <p>New desired order quantity.</p> <p>Note: Only a reduction in quantity is allowed via the Modify Request</p>	Yes	Yes	Yes	Yes
<b>Side</b>	u8	32	1	<p>0 = no change in Side</p> <p>1= buy</p> <p>2 = sell</p> <p>3 = sell short</p> <p>4 = sell short exempt</p> <p>5 = cross</p> <p>6 = cross short</p> <p>7 = cross short exempt</p>	<p>0</p> <p>2</p> <p>3</p> <p>4</p>	<p>0</p> <p>2</p> <p>3</p> <p>4</p>	<p>0</p> <p>2</p> <p>3</p> <p>4</p>	<p>0</p> <p>2</p> <p>3</p> <p>4</p>
<b>LocateReqd</b>	u8	33	1	<p>0 = No LocateReqd, or Not Applicable</p> <p>1 = LocateReq for SSH orders</p>	<p>0</p> <p>1</p>	<p>0</p> <p>1</p>	<p>0</p> <p>1</p>	<p>0</p> <p>1</p>

## 7.6 Bulk Cancel Request

Target Audience: All

Stream Type: TG

This message is used to bulk cancel multiple orders 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.
  - When selecting a code in the 'BulkCancelType' field for MPID-level order cancellation, the 'MPID' field will determine the MPID whose orders are cancelled.
  - When selecting a code in the 'BulkCancelType' field for Session-level order cancellation, all orders entered on the session will be cancelled, regardless of their MPIDs and the value provided in the 'MPID' field.
- To enter a Bulk Cancel Request for a particular MMID, the firm may populate the 'MMID' field with the identifier targeted for cancellation. This will limit the scope of cancellation to Q Orders entered with the specified MMID.
- Exclusions – the following orders are always excluded from cancellation by a Bulk Cancel Request:
  - Primary Close Only Market/Limit (PO + MOC/LOC) orders for NYSE symbols after 3:45 PM
  - MOO/LOO orders for 1 minute prior to the Core Opening Auction
  - MOC/LOC orders during Closing Auction freeze; on NYSE, for primary symbols - MOC/LOC orders after the MOC/LOC cancellation cutoff time
  - On NYSE, for primary symbols - all orders after scheduled closing time

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0281, Length = 31	Yes	Yes	Yes	Yes
<b>SymbolID</b>	u32	4	4	Identification number assigned to the security	Yes	Yes	Yes	Yes
<b>MPID</b>	zchar(4)	8	4	Firm Identifier - MPID	Yes	Yes	Yes	Yes
<b>MMID</b>	u32	12	4	This value represents the integer representation of a Market Maker, LMM, SLP, SLMM or DMM, 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. If specified on the Bulk Cancel Request, this will limit	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				the scope of cancellation to Q Orders entered with the specified MMID.				
				Unique ID of the new Order, Cancel/Replace, Cancel, Modify, or Bulk Cancel request as assigned by the firm.  Pillar will validate that the CIOrdID 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 CIOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID.	Yes	Yes	Yes	Yes
<b>CIOrdID</b>	u64	16	8	Customer defined.				
				NYSE Agency Code or Floor Trader Badge.				
<b>DeliverToCompID</b>	zchar(5)	24	5	Options Market Maker for Directed Order.				
				1 = Cancel orders for the individual gateway session only. Cancel – Day; Directed Orders	1	1	1	1
				2 = Cancel orders for the individual gateway session only. Cancel – ALL orders	2	2	2	2
				3 = Cancel orders for the individual gateway session only. Cancel – At the Opening; Day; Directed orders	3	3	3	3
<b>BulkCancelType</b>	u8	29	1	4 = Cancel orders for the MPID. Cancel – At the Opening; Day; Directed	4	4	4	4



Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				orders				
				5 = Cancel orders for the MPID. Cancel – Day; Directed orders	5	5	5	5
				6 = Cancel orders for the MPID. Cancel – GTC orders (NYSE Arca & Amex Options only)	6	6	6	6
				7 = Cancel orders for the MPID. Cancel – At the Opening and On Close orders	7	7	7	7
				8 = Cancel orders for the MPID. Cancel – Day orders	8	8	8	8
				9 = Cancel orders for the MPID, and Block all new order entry for the MPID. Cancel – Day; Directed orders	9	9	9	9
				10 = Block all new order entry for the MPID	10	10	10	10
				11 = Unblock new order entry for the MPID	11	11	11	11
				12 = Cancel orders for the MPID. Cancel – Directed orders	12	12	12	12
				13 = Cancel orders for the MPID. Cancel – Capital Commitment Orders (NYSE DMM only)	13			
				0 = No side	0	0	0	0
				1= buy	1	1	1	1
				2 = sell (will cancel all Sell, Sell Short, and Sell Short Exempt orders)	2	2	2	2
Side	u8	30	1					

## 8. Pillar to Member Firm - Application Layer Payload Messages

### 8.1 Equities Symbol Reference Data

Target Audience: All

Stream Type: GT, 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 securities.

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0232, Length = 56	Yes	Yes	Yes	Yes
<b>TransactTime</b>	Timestamp	4	8	Exchange application time.	Yes	Yes	Yes	Yes
<b>SymbolID</b>	u32	12	4	Identification number assigned to the security	Yes	Yes	Yes	Yes
<b>NYSESymbol</b>	char(24)	16	24	NYSE/XDP Market Data Symbology	Yes	Yes	Yes	Yes
<b>ListedMIC</b>	char(4)	40	4	Market Identifier Code (MIC) of Primary Market	Yes	Yes	Yes	Yes
<b>RoundLotSize</b>	u8	44	1	Round lot size	Yes	Yes	Yes	Yes
<b>MaxOrderPrice</b>	Price	45	8	Maximum allowable order entry price	Yes	Yes	Yes	Yes
<b>MPVClassID</b>	u16	53	2	Identification number assigned to the MPVClass	Yes	Yes	Yes	Yes
<b>TestSymbolIndicator</b>	u8	55	1	0 = Production Symbol 1 = Test Symbol	0 1	0 1	0 1	0 1

### 8.2 Minimum Price Variant Class Reference Data

Target Audience: All

Stream Type: GT, 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	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0230, Length = 50	Yes	Yes	Yes	Yes
<b>TransactTime</b>	Timestamp	4	8	Exchange application time.	Yes	Yes	Yes	Yes
<b>MPVClassName</b>	char(20)	12	20	Name of the Minimum Price	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				Variant (MPV) Class.				
<b>MPVClassID</b>	u16	32	2	Identification number assigned to the MPVClass.	Yes	Yes	Yes	Yes
<b>RPIMPV</b>	Price	34	8	Numeric value of the Minimum Price Variation for Retail Price Improvement (RPI) orders for securities belonging to the MPVClass.	Yes	Yes	Yes	Yes
<b>LULDMPV</b>	Price	42	8	Numeric value of the Minimum Price Variation for LULD bands for securities belonging to the MPVClass.	Yes	Yes	Yes	Yes

### 8.3 Minimum Price Variant Level Reference Data

Target Audience: All

Stream Type: GT, 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	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0231, Minimum Length = 12	Yes	Yes	Yes	Yes
<b>TransactTime</b>	Timestamp	4	8	Exchange application time.	Yes	Yes	Yes	Yes
<b>MPVLevelDefinition</b>	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	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 \$1.00 or above \$1.00.
- **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
<b>MPVLevelName</b>	char(24)	0	24	Name of the Minimum Price Variant (MPV) Level. Naming convention includes the MPVClassName
<b>Price</b>	Price	24	8	Order entry Limit price range for the MPVLevel defined in this message
<b>QuotingMPV</b>	Price	32	8	Numeric value of the Quoting Minimum Price Variation for the MPVLevel and Price defined in this message.  For the equity markets, this value indicates the security's order entry limit price and quoting increment, as governed by the security's Tick Size Pilot Program group.
<b>TradingMPV</b>	Price	40	8	Numeric value of the Trading Minimum Price Variation for the MPVLevel and Price defined in this message.  For the equity markets, this value indicates the security's trading increment, as governed by the security's Tick Size Pilot Program group.
<b>MPVClassID</b>	u16	48	2	Identification number assigned to the MPVClass.

## 8.4 MPID Configuration

Target Audience: All

Stream Type: GT, 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 change to an MPID configuration.

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

## 8.5 MMID Configuration

Target Audience: Equities Market Makers

Stream Type: GT, REF

An instance of this message is provided, unsolicited, at start of day for each MMID configured on a gateway session. It provides the character representation of a Market Maker, LMM, SLP, SLMM or DMM and the integer MMID value assigned to it (remains static from day to day). 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.

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0273, Length = 142	Yes	Yes	Yes	Yes
<b>TransactTime</b>	Timestamp	4	8	Exchange application time.	Yes	Yes	Yes	Yes
<b>MarketMaker</b>	char(10)	12	10	Character representation of the market maker.	Yes	Yes	Yes	Yes
<b>MMID</b>	u32	22	4	This value represents the integer representation of a Market Maker, LMM, SLP, SLMM or DMM, agreed upon between the firm and the Exchange. These firms must provide their MMID along	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				with its associated MPID on all orders intended to receive credit for satisfying their marking making/liquidity obligations.				
<b>Username</b>	char(16)	26	16	Unique identifier of the gateway session—SenderCompID.	Yes	Yes	Yes	Yes
<b>Reserved</b>	char(100)	42	100	Bytes reserved for future use	Yes	Yes	Yes	Yes

## 8.6 Session Configuration Acknowledgement

Target Audience: All

Stream Type: GT, 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

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	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0221, Length = 98	Yes	Yes	Yes	Yes
<b>TransactTime</b>	Timestamp	4	8	Exchange application time.	Yes	Yes	Yes	Yes
<b>UserSessionType</b>	u8	12	1	Defines the permission type assigned to the gateway session. UserSessionType controls the message types				

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				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	1  2  3	1  2	1  2	1  2
<b>UserSessionStatus</b>	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	1  2  3	1  2  3
<b>Username</b>	char(16)	14	16	Unique identifier of the gateway session – SenderCompID.	Yes	Yes	Yes	Yes
<b>MIC</b>	char(4)	30	4	Market Identifier Code (MIC) of the connected market. ARCX = NYSE Arca Equities XNYS = NYSE XASE = NYSE American Equities XCIS = NYSE National Equities	Yes	Yes	Yes	Yes
<b>CancelOnDisconnect</b>	u8	34	1	0 = Cancel on Disconnect Disabled	0	0	0	0





Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				over the time period specified by ThrottleWindow.				
<b>SymbolEligibility</b>	u8	40	1	Session level permission to control order entry based on type of symbol.  1 = All Symbols (Production and Test Symbols)  2 = Test Symbols only	1 2	1 2	1 2	1 2
<b>MaxOrderQuantity</b>	u32	41	4	Maximum allowable OrderQty for Order and Cancel/Replace Requests entered on the gateway session.	Yes	Yes	Yes	Yes
<b>SelfTradePrevention</b>	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	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
<b>OrderPriorityUpdateAckSubscription</b>	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)	0 1	0 1	0 1	0 1
<b>AckStatus</b>	u8	47	1	0 = Unsolicited/Start of Day  1 = User Request Valid	0 1	0 1	0 1	0 1

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				2 = User Request Invalid (Rejected)	2	2	2	2
<b>Reserved</b>	char(50)	48	50	Bytes reserved for future use	Yes	Yes	Yes	Yes

## 8.7 Order and Cancel/Replace Acknowledgement

Target Audience: All

Stream Type: GT

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

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.
- **Optional Order Add-On** – This message is variable length. Whether the firm sent only the Order/Cancel Replace Request base message, or included one of two optional add-ons at the end of the message, the Ack for it will follow the same format. 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	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0260, Minimum Length = 102	Yes	Yes	Yes	Yes
<b>TransactTime</b>	Timestamp	4	8	Exchange application time.	Yes	Yes	Yes	Yes
<b>SymbolID</b>	u32	12	4	Identification number assigned to the security	Yes	Yes	Yes	Yes
<b>MPID</b>	zchar(4)	16	4	Firm Identifier - MPID	Yes	Yes	Yes	Yes
<b>MMID</b>	u32	20	4	This value represents the integer representation of a Market Maker, LMM, SLP,	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				SLMM or DMM, 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.				
<b>MPSubID</b>	char	24	1	Customer defined – identifies specific entity/trading desk of customer firm.	Yes	Yes	Yes	Yes
<b>ClOrdID</b>	u64	25	8	<p>Unique ID of the new Order, Cancel/Replace, Cancel, Modify, or Bulk Cancel request as assigned by the firm.</p> <p>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.</p> <p>Customer defined.</p>	Yes	Yes	Yes	Yes
<b>OrigClOrdID</b>	u64	33	8	Refers to the ClOrdID of a previously entered order.	Yes	Yes	Yes	Yes
<b>BitfieldOrder Instructions</b>	Bitfield Order Instructions	41	8	<p>Bitfield containing various order attributes and modifiers.</p> <p>See data structure definition table for the positions and valid values of each bit.</p>	Yes	Yes	Yes	Yes
<b>Price</b>	Price	49	8	0.000001-999999.999999	Yes	Yes	Yes	Yes
<b>OrderQty</b>	u32	57	4	1 - 999,999,999	Yes	Yes	Yes	Yes
<b>MinQty</b>	u32	61	4	0 = no MinQty	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				Otherwise, Must be $\geq$ Round Lot and $\leq$ OrderQty				
<b>OrderID</b>	u64	65	8	Unique identifier of most recent order as assigned by the Exchange. Published externally to market data feeds	Yes	Yes	Yes	Yes
<b>LeavesQty</b>	u32	73	4	0 - 999,999,999	Yes	Yes	Yes	Yes
<b>WorkingPrice</b>	Price	77	8	0.000001-999999.999999	Yes	Yes	Yes	Yes
<b>WorkingAway FromDisplay</b>	u8	85	1	0 = Working Price is equal to Display Price	0	0	0	0
				1 = Working Price is different from Display Price	1	1	1	1
<b>PreLiquidityIndicator</b>	zchar(4)	86	4	0 = None	0	0	0	0
				1 = Candidate for setting a new displayed bid or offer on the local market	1	1	1	1
<b>ReasonCode</b>	u16	90	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	Yes	Yes
<b>AckType</b>	u8	92	1	1 = New Interest	1	1	1	1
				2 = Order Priority Update – New OrderID				
				3 = Order Priority Update – Same OrderID				
				4 = Bulk Cancel Ack				
<b>AckType</b>	u8	92	1	5 = Pending Cancel				
				6 = Pending Replace	6	6	6	6
				7 = Pending Modify				
				8 = Replaced	8	8	8	8
				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 –				

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				Subdollar Adding Liquidity 16 = Billable Cancel – Subdollar Removing Liquidity				
<b>BitfieldFlowIndicator</b>	BitfieldFlow Indicator	93	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	Yes	Yes
<b>UserData</b>	char(8)	94	8	Customer defined up to 8 characters; only printable ASCII characters allowed.	Yes	Yes	Yes	Yes
<b>OptionalOrderAddOn</b>		102	4	Data structure - one of two optional add-on structures 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	Yes	Yes

## 8.8 Order Modify/Cancel Request Acknowledgment and UROUT

Target Audience: All

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.
- **UROUT** – Indicates the firm's order has been cancelled by the Exchange. Represented by 'AckType' values Canceled and Done for Day.
- **Billable Cancel** – Represented by 'AckType' values Billable Cancel – Adding Liquidity, Billable Cancel – Removing Liquidity, Billable Cancel – Subdollar Adding Liquidity, and Billable Cancel – Subdollar Removing Liquidity.

This message is sent only for STP types Cancel Both and Cancel Decrement, and is generated for the quantity that was prevented from trading (matching quantity). Then, if the balance of either order needs to be cancelled as a result of the STP instruction, a UROUT will be sent for the remaining shares with 'AckType' Canceled.

On the Billable Cancel message, the 'OrderQty' field represents the matching quantity and the 'Price' field represents the price at which the orders would have executed had they been allowed to trade.

**For DMM session subscribed to a symbol** - this message may additionally be sent as an **Unsolicited Modify Acknowledgement**, to notify the firm that a Manual DMM Order has been reduced as a result of a manual action from DBK GUI. Represented by:

- 'AckType' value Modified
- 'RefClOrdID' = 0
- 'ReasonCode' = 218 (DMM GUI Reduction in Manual Order Qty)

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.
- **Optional Order Add-On** – This variable length message follows the format of the order being modified or cancelled. If the order included the data structure “OptionalOrderAddOn – NYSE Floor Broker”, this execution report message will contain the data structure “OptionalReportAdd-On – NYSE Floor Broker”. 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	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0271, Minimum Length = 74	Yes	Yes	Yes	Yes
<b>TransactTime</b>	Timestamp	4	8	Exchange application time.	Yes	Yes	Yes	Yes
<b>SymbolID</b>	u32	12	4	Identification number assigned to the security	Yes	Yes	Yes	Yes
<b>MPID</b>	zchar(4)	16	4	Firm Identifier – MPID	Yes	Yes	Yes	Yes
<b>OrderID</b>	u64	20	8	Unique identifier of most recent order as assigned by the Exchange. Published externally to market data feeds	Yes	Yes	Yes	Yes
<b>RefClOrdID</b>	u64	28	8	Unique ID of the new Order, Cancel/Replace, Cancel, Modify, or Bulk Cancel request as assigned by the firm.  Pillar will validate that the	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				<p>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.</p> <p>Customer defined.</p> <p><b>On Modify/Cancel Request Acknowledgements:</b></p> <p>Refers to the ClOrdID of the incoming Modify, Cancel, or Bulk Cancel Request.</p> <p><b>On UROUTs (order cancellation):</b></p> <ul style="list-style-type: none"> <li>- Solicited UROUTs – this field will refer to the ClOrdID of the incoming Cancel or Bulk Cancel Request.</li> <li>- 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)</li> <li>- All other unsolicited UROUTs – this field will be set to 0.</li> </ul> <p><b>NYSE DMM session subscribed to symbol:</b></p>				

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				On unsolicited Modify Acknowledgements - this field will be set to 0.				
<b>OrigClOrdID</b>	u64	36	8	Refers to the ClOrdID of a previously entered order.	Yes	Yes	Yes	Yes
<b>Price</b>	Price	44	8	0.000001-999999.999999	Yes	Yes	Yes	Yes
<b>OrderQty</b>	u32	52	4	1 - 999,999,999	Yes	Yes	Yes	Yes
<b>LeavesQty</b>	u32	56	4	0 - 999,999,999	Yes	Yes	Yes	Yes
<b>Side</b>	u8	60	1	1 = buy 2 = sell 3 = sell short 4 = sell short exempt 5 = cross 6 = cross short 7 = cross short exempt	1 2 3 4	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
<b>LocateReqd</b>	u8	61	1	0 = No LocateReqd 1 = LocateReq for SSH orders	0 1	0 1	0 1	0 1
<b>ReasonCode</b>	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	Yes	Yes
<b>AckType</b>	u8	64	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	4 5 7 9 11 12 13 14 15 16	4 5 7 9 11 12 13 14 15 16	4 5 7 9 11 12 13 14 15 16	4 5 7 9 11 12 13 14 15 16



Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
<b>BitfieldFlowIndicator</b>	BitfieldFlow Indicator	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	Yes	Yes
<b>UserData</b>	char(8)	66	8	Customer defined up to 8 characters; only printable ASCII characters allowed.	Yes	Yes	Yes	Yes
<b>OptionalOrderAddOn</b>		74	4	Data structure - an additional data structure will be appended to an Order Modify/Cancel Request Acknowledgment or UROUT for an Order that was sent with "OptionalOrderAddOn - NYSE Floor Broker".  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	Yes	

## 8.9 Order Priority Update Acknowledgment

Target Audience: All

Stream Type: GT

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.

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0262, Length = 62	Yes	Yes	Yes	Yes
<b>TransactTime</b>	Timestamp	4	8	Exchange application time.	Yes	Yes	Yes	Yes
<b>SymbolID</b>	u32	12	4	Identification number	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				assigned to the security.				
<b>MPID</b>	zchar(4)	16	4	Firm Identifier – MPID	Yes	Yes	Yes	Yes
<b>OrderID</b>	u64	20	8	Unique identifier of most recent order as assigned by the Exchange. Published externally to market data feeds.	Yes	Yes	Yes	Yes
<b>ClOrdID</b>	u64	28	8	Unique ID of the new Order, Cancel/Replace, Cancel, Modify, or 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	Yes	Yes
<b>WorkingPrice</b>	Price	36	8	0.000001-999999.999999	Yes	Yes	Yes	Yes
<b>OrderQty</b>	u32	44	4	1 - 999,999,999	Yes	Yes	Yes	Yes
<b>WorkingAway FromDisplay</b>	u8	48	1	0 = Working Price is equal to Display Price 1 = Working Price is different from Display Price	0 1	0 1	0 1	0 1
<b>PreLiquidity Indicator</b>	zchar(4)	49	4	0 = None  1 = Candidate for setting a new displayed bid or offer on the local market  Note: this field will be populated with the value from the original Order Ack.	0 1	0 1	0 1	0 1
<b>AckType</b>	u8	53	1	1 = New Interest 2 = Order Priority Update – New OrderID	2	2	2	2

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				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				
<b>UserData</b>	char(8)	54	8	Customer defined up to 8 characters; only printable ASCII characters allowed.	Yes	Yes	Yes	Yes

## 8.10 Execution Report

Target Audience: All

Stream Type: GT

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

Data Structures used in this Message: If the executed order was originally sent with the data structure “OptionalOrderAddOn – NYSE Floor Broker,” the Exchange will include the data structure “OptionalReportAddOn – NYSE Floor Broker” 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.

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0290, Minimum Length = 84	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
<b>TransactTime</b>	Timestamp	4	8	Exchange application time.	Yes	Yes	Yes	Yes
<b>SymbolID</b>	u32	12	4	Identification number assigned to the security	Yes	Yes	Yes	Yes
<b>MPID</b>	zchar(4)	16	4	Firm Identifier – MPID	Yes	Yes	Yes	Yes
<b>OrderID</b>	u64	20	8	Unique identifier of most recent order as assigned by the Exchange. Published externally to market data feeds	Yes	Yes	Yes	Yes
<b>CIOrdID</b>	u64	28	8	<p>Unique ID of the new Order, Cancel/Replace, Cancel, Modify, or Bulk Cancel request as assigned by the firm.</p> <p>Pillar will validate that the CIOrdID 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 CIOrdID provided is unique among all orders sent for the full length of the trading day by the given Username + MPID.</p> <p>Customer defined.</p>	Yes	Yes	Yes	Yes
<b>DealID</b>	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	Yes	Yes
<b>LastPx</b>	Price	44	8	Price of current partial fill or fill message 0.000001-999999.999999	Yes	Yes	Yes	Yes
<b>LeavesQty</b>	u32	52	4	0 - 999,999,999	Yes	Yes	Yes	Yes
<b>CumQty</b>	u32	56	4	1-999,999,999	Yes	Yes	Yes	Yes
<b>LastQty</b>	u32	60	4	Quantity of current partial fill or fill message 1 - 999,999,999	Yes	Yes	Yes	Yes
<b>LiquidityIndicator</b>	zchar(4)	64	4	On Partial Fills and Fills:	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				See Appendix for Values				
<b>DisplayedLiquidity Indicator</b>	zchar(4)	68	4	Values TBD	Yes			
<b>LocateReqd</b>	u8	72	1	0 = No LocateReqd 1 = LocateReq for SSH orders	0 1	0 1	0 1	0 1
<b>ParticipantType</b>	u8	73	1	1 = Customer 2 = Market Maker/LMM 3 = DMM 4 = SLP 5 = NYSE Floor Broker	1 2 3 4	1 2	1 2	1 2
<b>ReasonCode</b>	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	Yes	Yes
<b>UserData</b>	char(8)	76	8	Customer defined up to 8 characters; only printable ASCII characters allowed.	Yes	Yes	Yes	Yes
<b>OptionalReportAddOn</b>		84	4	Data structure - an additional data structure will be appended to an Execution Report for an Order that was sent with "OptionalOrderAddOn - NYSE Floor Broker".  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			

## 8.11 Trade Bust/Correct

Target Audience: All

Stream Type: GT

This message is sent as a result of a report bust.

Corrections are not currently supported.

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0292, Length = 82	Yes	Yes	Yes	Yes
<b>TransactTime</b>	Timestamp	4	8	Exchange application time.	Yes	Yes	Yes	Yes
<b>SymbolID</b>	u32	12	4	Identification number assigned to the security	Yes	Yes	Yes	Yes
<b>MPID</b>	zchar(4)	16	4	As entered on the order originally executed in the transaction that is busted or corrected.  Firm Identifier – MPID	Yes	Yes	Yes	Yes
<b>OrderID</b>	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	Yes	Yes
<b>ClOrdID</b>	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.	Yes	Yes	Yes	Yes

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				Customer defined.				
<b>RefSeqMsgID</b>	SeqMsgId	36	16	Contains the SeqMsgID of the transaction (original Execution Report) that is busted or corrected	Yes	Yes	Yes	Yes
<b>DealID</b>	u64	52	8	DealID of the transaction that is being busted or corrected.  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	Yes	Yes
<b>LastPx</b>	Price	60	8	Busts - original execution price Corrections - corrected price  0.000001-999999.999999	Yes	Yes	Yes	Yes
<b>LastQty</b>	u32	68	4	Busts - original execution quantity Corrections - corrected execution quantity  1 - 999,999,999	Yes	Yes	Yes	Yes
<b>ReasonCode</b>	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	Yes	Yes
<b>UserData</b>	char(8)	74	8	Customer defined up to 8 characters; only printable ASCII characters allowed.	Yes	Yes	Yes	Yes

## 8.12 Application Layer Reject

Target Audience: All

Stream Type: GT

This message informs the firm that a New Order, Cancel, Cancel/Replace, or Modify request has been rejected.

For DMM sessions - it is also used to reject TG Action and Manual Action Response.

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.

Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
<b>msghdr</b>	MsgHeader	0	4	Type = 0x0263, Length = 43	Yes	Yes	Yes	Yes
<b>TransactTime</b>	Timestamp	4	8	Exchange application time.	Yes	Yes	Yes	Yes
<b>SymbolID</b>	u32	12	4	Identification number assigned to the security	Yes	Yes	Yes	Yes
<b>MPID</b>	zchar(4)	16	4	Firm Identifier – MPID	Yes	Yes	Yes	Yes
<b>ClOrdID</b>	u64	20	8	<p>ClOrdID of the message that is rejected (incoming new Order, Cancel/Replace, Cancel, Modify, or Bulk Cancel request).</p> <p>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.</p> <p>Customer defined.</p>	Yes	Yes	Yes	Yes
<b>ReasonCode</b>	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	Yes	Yes
<b>RejectType</b>	u8	30	1	<p>1 = Order/Cancel Replace reject</p> <p>2 = Modify Request reject</p> <p>3 = Cancel Request reject</p>	1 2 3	1 2 3	1 2 3	1 2 3



Field	Type	Offset	Len	Values	NYSE	American EQ	National EQ	Arca EQ
				4 = Bulk Cancel Request reject 5 = <i>Reserved for future use</i> 6 = Manual Action Response reject	4 6	4	4	4
<b>UserData</b>	char(8)	31	8	Customer defined up to 8 characters; only printable ASCII characters allowed.	Yes	Yes	Yes	Yes
<b>Reserved</b>	char(4)	39	4	Bytes reserved for future use	Yes	Yes	Yes	Yes

## 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.

Definition	Liquidity Indicator	Arca EQ	NYSE	American EQ	National EQ
<b>Executions on Orders Traded Locally – Adding Liquidity (Non-Auction)</b>					
Add Regular Limit Order	A	•	•	•	•
Add Sub Dollar Execution	AZ	•	•	•	•
Add MPL Order	AML	•	•	•	•
Add MPL Sub Dollar Execution	AMZ	•	•	•	•
Add Non-Displayed Order	AND	•	•	•	•
Add Non-Displayed Sub Dollar Execution	ANZ	•	•	•	•
Add Non-routable Limit Order – Working at different price than display price at time of execution	AB	•	•	•	•
Add Tracking Order	AT	•		•	•
Add Limit Order Setting New NBBO with Priority – Subdollar	ASPZ		•		
Add Limit Order Joining NBBO with Priority – Subdollar	AJPZ		•		
Add Limit Order Setting New NBBO with Priority	ASP		•		
Add Limit Order Joining NBBO with Priority	AJP		•		
Add Limit Order Setting New BBO	ASB	•	•	•	•
Add Retail Provider ('RetailIndicator' = 1)	ARE	•	•		
Add Retail Provider Sub Dollar ('RetailIndicator' = 1)	AREZ	•	•		
Add Retail Provider RPI Order	ARP	•	•		
Add MPL Retail Provider	ARM	•			
Add Discretionary Peg Order – at prices between the same side PBBO and midpoint	ADB			•	
Add Discretionary Peg Order – at the midpoint	ADM			•	
Add Discretionary Peg Order – at the same side PBBO or below same side PBBO	ADZ			•	
Add d-Order when Providing Discretion	ADR		•		
Add Capital Commitment Order (NYSE DMM only)	AC		•		
<b>Executions on Orders Traded Locally – Removing Liquidity (Non-Auction)</b>					
Remove Regular Limit or Market	R	•	•	•	•
Remove Regular Limit IOC	RI	•	•	•	•
Remove Sub Dollar	RZ	•	•	•	•
Remove Sub Dollar IOC	RIZ	•	•	•	•

Definition	Liquidity Indicator	Arca EQ	NYSE	American EQ	National EQ
Remove MPL Order	RML	•	•	•	•
Remove Sub Dollar MPL Order	RMZ	•	•	•	•
Remove Non-Displayed Order	RND	•	•	•	•
Remove Non-Displayed Sub Dollar Execution	RNZ	•	•	•	•
Remove Retail Taker Order (Retail Order Type 1, Type 2)	RRT	•	•		
Remove MPL Retail Taker ('RetailIndicator' = 1)	RRM	•	•		
Remove Discretionary Peg Order – on arrival/re-sweeping at prices other than midpoint	RDB			•	
Remove Discretionary Peg Order – on arrival/re-sweeping at the midpoint	RDM			•	
Remove Discretionary Peg Order – on arrival/re-sweeping at same side PBBO or below same side PBBO	RDZ			•	
Remove d-Order on Arrival/Repricing or Providing Discretion as Aggressor	RDA		•		
<b>Executions in Opening/Re-Opening Auctions</b>					
Market Day, MOO, LOO Executions	O	•	•	•	
Limit orders	OL	•	•	•	
Sub-Dollar Execution	OZ	•	•	•	
Imbalance Offset	OIO	•		•	
Sub-Dollar Imbalance Offset	OIOZ	•		•	
<b>Executions in Closing Auctions</b>					
Market Day, MOC, LOC Executions	C	•	•	•	
Limit orders	CL	•	•	•	
Sub Dollar All Executions	CZ	•	•	•	
Sub Dollar Non MOC/LOC	CZ		•		
Sub Dollar MOC/LOC	CZC		•		
<b>Executions on Routed Orders</b>					
Routed – NYSE Execution	XN	•		•	•
Routed – NYSE American Execution	XA	•	•		•
Routed – NYSE Arca Equities Execution	XP		•	•	•
Routed – NYSE National Execution	XC	•	•	•	
Routed to NYSE Opening/Reopening Auction	XNO	•		•	•
Routed to NYSE American Opening/Reopening Auction	XAO	•	•		•
Routed to NYSE Arca Equities Opening/Reopening Execution	XPO		•	•	•
Routed – Away Market Execution, Non- NYSE Group	X	•		•	•
Routed – NYSE Sub Dollar Execution	XNZ	•		•	•

Definition	Liquidity Indicator	Arca EQ	NYSE	American EQ	National EQ
Routed – NYSE American Sub Dollar Execution	XAZ	•	•		•
Routed – NYSE Arca Equities Sub Dollar Execution	XPZ		•	•	•
Routed – NYSE National Sub Dollar Execution	XCZ	•	•	•	
Routed – Away Market Sub Dollar Execution, Non- NYSE Group	XZ	•		•	•
Routed – NASDAQ Execution	XQ		•		
Routed – BATZ	XZ		•		
Routed – NASDAQ BX	XB		•		
Routed – FINRA ADF	XD		•		
Routed – EDGA	XJ		•		
Routed – EDGX	XK		•		
Routed – Chicago Stock Exchange	XM		•		
Routed – NASDAQ PSX	XX		•		
Routed – BATY	XY		•		
Routed – IEX	XV		•		
Routed – NASDAQ Sub Dollar	XQZ		•		
Routed – BATZ Sub Dollar	XZZ		•		
Routed – NASDAQ BX Sub Dollar	XBZ		•		
Routed – FINRA ADF Sub Dollar	XDZ		•		
Routed – EDGA Sub Dollar	XJZ		•		
Routed – EDGX Sub Dollar	XKZ		•		
Routed – Chicago Stock Exchange Sub Dollar	XMZ		•		
Routed – NASDAQ PHLX Sub Dollar	XXZ		•		
Routed – BATY Sub Dollar	XYZ		•		
Routed – IEX Sub Dollar	XVZ		•		
<b>Primary Only to NYSE</b>					
Primary Only Executed in Opening/Reopening	XNO	•		•	•
Primary Only Adding Liquidity	XNA	•		•	•
Primary Only Removing Liquidity	XN	•		•	•
Primary Only Routed from Primary	XNW	•		•	•
Primary Only MOC/LOC	XNC	•		•	•
945/355 Executed on Primary	XNT	•		•	•
945/355 Executed on Primary Retail	XNRT	•			
Primary Only Sub Dollar	XNZ	•		•	•
<b>Primary Only to NYSE American</b>					
Primary Only Executed in Opening/Reopening	XAO	•	•		•

Definition	Liquidity Indicator	Arca EQ	NYSE	American EQ	National EQ
Primary Only Adding Liquidity	XAA	•	•		•
Primary Only Removing Liquidity	XA	•	•		•
Primary Only Routed from Primary	XAW	•	•		•
Primary Only MOC/LOC	XAC	•	•		•
945/355 Executed on Primary	XAT	•			•
945/355 Executed on Primary Retail	XART	•			
Primary Only Sub Dollar	XAZ	•	•		•
<b>Primary Only to NYSE Arca Equities</b>					
Primary Only Executed in Opening/Reopening	XPO		•	•	•
Primary Only Adding Liquidity	XPA		•	•	•
Primary Only Removing Liquidity	XP		•	•	•
Primary Only Routed from Primary	XPW		•	•	•
Primary Only MOC/LOC	XPC		•	•	•
945/355 Executed on Primary	XPT			•	•
Primary Only Sub Dollar	XPZ		•	•	•
<b>Primary Only to Away Market, Non- NYSE Group</b>					
Primary Only Adding/Removing Liquidity	XDA	•		•	•
945/355 Executed on Primary	XDT	•		•	•
945/355 Executed on Primary Retail	XDRT	•			
Primary Only Sub Dollar	XDZ	•		•	•
<b>Primary Only to NASDAQ</b>					
Primary Only Adding/Removing Liquidity	XQA		•		
945/355 executed on Primary	XQT				
945/355 executed on Primary - Retail	XQRT				
Primary Only Sub Dollar	XQZD		•		
<b>Primary Only to BATZ</b>					
Primary Only Adding/Removing Liquidity	XZA		•		
945/355 executed on Primary	XZT				
945/355 executed on Primary - Retail	XZRT				
Primary Only Sub Dollar	XZZD		•		
<b>Primary Only to IEX</b>					
Primary Only Adding/Removing Liquidity	XVA		•		
945/355 executed on Primary	XVT				
945/355 executed on Primary - Retail	XVRT				

Definition	Liquidity Indicator	Arca EQ	NYSE	American EQ	National EQ
Primary Only Sub Dollar	XVZD		•		
<b>Cross Order Execution</b>					
Limit IOC Cross (Cross Execution only)	Z	•		•	•
Participated in NYSE Floor Broker Cross Execution	ZB		•		
Participated in NYSE Floor Broker Cross Execution Sub Dollar	ZBZ		•		

Beginning on a date announced via Trader Update:

Definition	Liquidity Indicator	Arca EQ	NYSE	American EQ	National EQ
<b>Executions in Opening/Re-Opening Auctions</b>					
Market Day and MOO	OM	•	•	•	
Market Day and MOO - Sub Dollar	OMZ	•	•	•	
Limit orders	OL	•	•	•	
Limit orders - Sub Dollar	OLZ	•	•	•	
LOO, Additional manual PRIN interest (NYSE DMM only), and Opening D-Order (NYSE only)	O	•	•	•	
LOO, Additional manual PRIN interest (NYSE DMM only), and Opening D-Order (NYSE only) - Sub Dollar	OZ	•	•	•	
<b>Executions in Closing Auctions</b>					
Market Day and MOC	CM	•	•	•	
Market Day and MOC - Sub Dollar	CMZ	•	•	•	
Limit and Additional manual PRIN interest (NYSE DMM only)	CL	•	•	•	
Limit and Additional manual PRIN interest (NYSE DMM only) - Sub Dollar	CLZ	•	•	•	
Limit on Close orders	C	•	•	•	
Limit on Close orders - Sub Dollar	CZ	•	•	•	
Imbalance Offset on Close	CIO		•		
Imbalance Offset on Close - Sub Dollar	CIOZ		•		
D-Order Executed in the Close when received prior to 25 minutes before the close	CED		•		
D-Order Executed in the Close when received prior to 25 minutes before the close - Sub Dollar	CEDZ		•		
D-Order Executed when received in between 25 minutes and 3 minutes before the close	CMD		•		
D-Order Executed when received in between 25 minutes and 3 minutes before the close - Sub Dollar	CMDZ		•		

Definition	Liquidity Indicator	Arca EQ	NYSE	American EQ	National EQ
D-Order Executed in the Close when received after 3 minutes before the close	CLD		•		
D-Order Executed in the Close when received after 3 minutes before the close - Sub Dollar	CLDZ		•		

## 10. Appendix B: Pillar Reason Codes

### Reason Codes Returned on Outgoing Messages

Pillar will return a set of event reason codes and descriptions in the 'ReasonCode' field on outgoing messages. These codes are provided by Pillar and qualify the event that produced the message.

Reason Code	Description	Reason Code	Description
0	OK	27	Invalid StopPx
1	Invalid SenderCompID	28	Invalid Client ID
2	Invalid SenderSubID	29	Invalid MinQty
3	Invalid SendingTime	30	Invalid MaxFloor
4	Invalid TargetCompID	31	Invalid LocateReqd
5	Invalid TargetSubID	32	Invalid ExpireTime
6	Invalid OnBehalfOfCompID	33	Invalid SecurityType
7	Invalid OnBehalfOfSubID	34	Invalid MaturityMonthYear
8	Invalid DeliverToCompID	35	Invalid PutOrCall
9	Invalid DeliverToSubID	36	Invalid StrikePrice
10	Invalid Account	37	Invalid Covered/Uncovered
11	Invalid ClOrdID	38	Invalid Customer/Firm/Broker/MM
12	Invalid ExecInst	39	Invalid MaturityDay
13	Invalid IDSource	40	Invalid PegDifference
14	Invalid OrderQty	41	Invalid SellersDays
15	Invalid OrdType	42	Invalid TradingSessionID
16	Invalid Price	43	Invalid NoTradingSessions
17	Invalid Order Capacity	44	Invalid DiscretionInst
18	Invalid Security ID	45	Invalid DiscretionOffset
19	Invalid Side	46	Invalid PriceType
20	Invalid Symbol	47	Invalid ClearingFirm
21	Invalid Text	48	Invalid ClearingAccount
22	Invalid TimeInForce	49	Invalid PartyID
23	Invalid Settlement Type	50	Invalid Optional Data
24	Invalid FutSettDate	51	Invalid CrossID
25	Invalid SymbolSfx	52	Invalid StrategyIndicator
26	Invalid Open/Close	53	Invalid TradeID



Reason Code	Description	Reason Code	Description
54	Invalid NoSelfTrade	87	Invalid StockLegGiveUp
55	Invalid CAPStrategy	88	Invalid NoLegs
56	Invalid SpecialOrdType	89	Invalid LegPositionEffect
57	Invalid RoutingInst	90	Invalid LegSymbol
58	Invalid OffsetPrice	91	Invalid LegCFIcode
59	Invalid ExtendedExecInst	92	Invalid LegMaturityDate
60	Invalid IntroducingBadgelD	93	Invalid LegStrikePrice
61	Invalid BillTo	94	Invalid LegContractMultiplier
62	Invalid ParentFirmCLOrdID	95	Invalid LegRatioQty
63	Invalid ParentFirmExchangeOrdID	96	Invalid LegSide
64	Invalid ParentFirm	97	Invalid LegRefID
65	Invalid InterestType	98	Unsupported Order Type
66	Invalid DisplayInd	99	UROUT
67	Invalid PegInd	100	Primary Market Not Available
68	Invalid CeilingFloorPrice	101	No NBBO/PBBO for Peg
69	Invalid MinPegQty	102	No Market for Market Order
70	Invalid DOrderAuctionPrice	103	Marketable Price
71	Invalid DiscMaxVol	104	Done for Day
72	Invalid DicsRouteInd	105	Credit Limit Violation
73	Invalid MinimumTriggerVol (MTV)	106	Cancel Remaining IOC
74	Invalid Attributed Quote	107	Too Late to Cancel
75	Invalid Proactive If Locked	108	InvalidPossResend
76	System not available	109	Cancel Pending
77	System full (MENG_RATE_EXCEEDED)	110	Symbol already opened
78	Throttle Reject	111	Firm Bulk Cancel
79	Symbol Halted	112	OnBehalfOfCompID Blocked
80	No symbol permission	113	ClearingFirm Blocked
81	Price Too Far Outside	114	Cancel/Replace Pending
82	MWCB Halt	115	Modify Pending
83	Market Closed	116	Cannot Flip Imbalance
84	Symbol Closed	117	Cannot Increase Imbalance
85	LULD Cancel Instruction	118	Pending Cancel - Imbalance Freeze
86	No Price Slide Inst During SSR	119	Pending Replace - Imbalance Freeze

Reason Code	Description	Reason Code	Description
120	Pending Modify - Imbalance Freeze	152	SSH Price below NBB on ISO
121	Pending Cancel - Routed Interest	153	IOC Received while Auction Running
122	Pending Replace - Routed Interest	154	Pending - Symbol Transition
123	Pending Modify - Routed Interest	155	Pending Cancel - Symbol Transition
124	Pending - Auction Running	156	Pending Modify - Symbol Transition
125	Duplicative Order Check	157	Pending Replace - Symbol Transition
126	Cancelled by Exchange	158	Invalid For Tick Pilot
127	New Order	159	Invalid MMID
128	Fill	160	Invalid MPID
129	Partial Fill	161	Invalid CancellInsteadOfReprice
130	Reduced	162	Invalid RetailIndicator
131	Replaced	163	SenderCompID Not Active
132	No Market for Cross	164	MPID Blocked
133	STP Cancel	165	Invalid Timestamp
134	Invalid PossDupe	166	Invalid Permission for SenderCompID
135	TPID Blocked	167	Invalid UserData
136	Invalid Bulk Cancel	168	Pillar Risk Mitigation
137	Pending Bulk Cancel	169	No Last Sale for Peg
138	Symbol Not Open	170	Symbol Pending Closing Auction
139	Symbol Suspended	171	Extreme Closing Order Imbalance
140	Symbol IPO Halt	172	Invalid Multi-Message
141	Invld Inst During Imbalance Freeze	173	Invalid Request Targeting Manual SenderCompID
142	Invld Inst After Cutoff Time	174	Invalid DMMRejectReason
143	Cancelled by Primary Market	175	Pending - Pending Auction State
144	Pending - Imbalance Freeze	176	Pending Cancel – Pending Auction State
145	No RLP Permission	177	Pending Modify – Pending Auction State
146	Invalid Instruction for IOC's	178	Pending Replace – Pending Auction State
147	System full (CG_RATE_EXCEEDED)	179	Cancelled - DMM Manual Order Re-price
148	Pending Cancel - Auction Running	180	Too early to open
149	Pending Modify - Auction Running	181	Too early to close
150	Pending Replace - Auction Running	182	Symbol not frozen by Auction Request
151	Invld Inst for Pending Order	183	Symbol is frozen by DBK GUI

Reason Code	Description	Reason Code	Description
184	Too Late - Auction Running	215	Invalid ManualResponseType
185	Too Late - Symbol Transition	216	No NYSE last sale
186	No Eligible Crossing Interest	217	Symbol Direct Listing State
187	Book is locked/crossed	218	DMM GUI Reduction in Manual Order Qty
188	No interest exists	219	Cross Eligible
189	Imbalance too large	900	Invalid ProactiveDiscretionInd
190	SSH price below SSR filing price	901	Invalid ExtendedPNP
191	Symbol already closed	902	Invalid ExecBroker
192	Opening template opened	903	FastCancelRep Unsupported
193	Closing template opened	904	Pending Cancel
194	PRIN entered on auction template	905	Pending Replace
195	Mandatory Indication submitted	906	System full (CGA_RATE_EXCEEDED)
196	Pending Crowd exists	999	Unknown Issue Encountered
197	No consolidated last sale		
198	Paired qty exceeds max trade parameter		
199	LULD or MWCB timer running		
200	<i>Reserved for future use</i>		
201	Cross Not Eligible		
202	Too late to open		
203	Pending Acceptance (for Ack on order arrival)		
204	Rejected Cancel by DMM		
205	Cancelled by DMM		
206	Price is outside allowable range		
207	Auction Validation In Progress		
208	Invalid ManualActionID		
209	Invalid AuctionSellIndicator		
210	Invalid IntradaySellShortQty		
211	Indication Template is Open		
212	Invalid Action		
213	Invalid SellIndicator		
214	Invalid IntradaySellShortQty		

## 11. Appendix C: Order Types

An inventory of the 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.pdf](https://www.nyse.com/publicdocs/NYSE_Pillar_Binary_Gateway_Order_Type_Matrix.pdf)

The document provides the following information:

- **Order Type Key** – the unique fields and values used to identify each major order type.
- **Order Validation** – a list of valid order modifiers for each order type.

**Note:** This document is provided for informational purposes only, and the Exchange reserves the right to change the format and/or scope of the document at any time.

General guidelines for reading the document:

- Each column corresponds to a specific order type.
- Each row corresponds to a field, and specifies a reject code (Rxxx) to be used if the entered value does not conform to the specification.
  - The top portion of the document corresponds to the primary key field values that uniquely identify an order type
  - The bottom portion of the document corresponds to secondary field values in the protocol that may be sent on various order types
- Each cell is a comma-separated list of the possible values for the given order type and field combination.

Legend:

- **Field that is required and can only have specific values** (example: a, b, c) – is represented with a cell 'a,b,c'. All other values will result in a reject with Pillar Reason Code Rxxx
- **Field that is required but has a customer-specific or customer defined value** – is represented with a cell 'Req'
- **Field that is optional and can either have specific values or be null** – is represented with a cell 'a,b,c,null'. All other values will result in a reject with Pillar Reason Code Rxxx
- **Field that is optional but has a customer-specific or customer defined value and if provided, that value must pass format validation** – is represented with a cell 'null,\*' or a cell '0,\*'
- **Field that must be set to null** – is represented with a cell 'null'. All other values will result in a reject with Pillar Reason Code Rxxx
- **Values marked in red text** – are valid for some but not all markets. See corresponding fields in this protocol spec for applicability by market. Invalid values will result in a reject with Pillar Reason Code Rxxx

## 12. Appendix D: Order Type/Modifier Applicability - by Participant & Symbol

In addition to differences between markets denoted throughout this specification, within a given market there are certain order types and modifiers are applicable only to a subset of participants (configured by gateway session) and/or symbols (Tape A or Tape B/C).

Orders entered outside the scope of applicability will be rejected.

Description	Field Name/Value	NYSE			
		Customer/ Market Maker or Service Bureau	Designated Market Maker (DMM)	Tape - A Symbols	Tape - B/C Symbols
Trading Session Designation - Early	TradingSessionID = 1	Yes	No	No	Yes
Trading Session Designation - Late	TradingSessionID = 3	No	No	No	No
Retail Order Type 1	ExtendedExecInst = 5	Yes	No	Yes	Yes
Imbalance Offset (On Close)	ExtendedExecInst = 8	Yes	No	Yes	No
Market Order	OrdType = 1	Yes	No	Yes	Yes
Limit On Close	OrdType = 2 with TimeInForce = 4	Yes	No	Yes	Yes
Capital Commitment Order (CCO) and CCO – partial fill contra-side	InterestType = 5 InterestType = 6	No	Yes	Yes	No
DMM Open/Re-open/Close with or without Auction (AOC)	SpecialOrdType = 1	No	Yes	Yes	No
DMM Pre-auction	SpecialOrdType = 2	No	Yes	Yes	No
DMM After-auction	SpecialOrdType = 3	No	Yes	Yes	No

## 13. Document Version History

Date	Spec Version #	Change Summary
March 29, 2019	3.2	<p>Pillar Gateway support for NYSE:</p> <ul style="list-style-type: none"> <li>- Appendix "Liquidity Indicators" - added codes for Executions on Routed Orders; Primary Only to NASDAQ; Primary Only to BATZ; Primary Only to IEX</li> <li>- TradingSessionID field - added clarification for NYSE, that all values that include Core designation (Core, Early/Core, Core/Late, and Early/Core/Late) will be allowed, but only if the order type supports the combination on other Pillar markets. See field description for how the values are processed based on Tape of the Symbol</li> <li>- Section "Reference Data" → "Intraday" - added support for intraday changes to DMM Symbol Reference Data</li> <li>- Appendix "Pillar Reason Codes" - updated text for codes 171, 200, 211</li> </ul> <p>Section "Data Types" - added detail that bytes/bits "reserved for future use" should be populated with 0.</p> <p>Clarification that MMID must be provided along with its associated MPID on Market Maker, LMM, SLP, SLMM and DMM orders intended to receive credit for satisfying their marking making/liquidity obligations.</p> <p>RountingInstruction field - changed description of the value for "Routable IOC" to "Routable" for greater flexibility in future use.</p>
January 14, 2019	3.1	<p>Added new field SpecialOrdType in the data structure BitfieldOrderInstructions, with values to support NYSE DMM electronic opening/re-opening/closing and pre-auction, after-auction instructions.</p> <p>Appendix B, "Pillar Reason Codes" - updated text for R065 to "Invalid InterestType"; R070 to "Invalid DOrderAuctionPrice."</p> <p>Clarification that MMID must be provided on all market maker orders.</p>
November 19, 2018	3.0	<p>Liquidity Indicators (Appendix) - added supplemental table with planned changes for Opening/Re-opening and Closing auction liquidity indicators on all Pillar markets with auction eligible securities - NYSE Arca Equities, NYSE American Equities, and NYSE.</p> <p>Pillar Gateway support for NYSE, general:</p> <ul style="list-style-type: none"> <li>- Throughout spec, updated field/value applicability for NYSE market</li> <li>- Eliminated business descriptions of the following fields; updated as reserved bytes for future use - MinPegQty, DiscPriceRng, DisplayInd</li> <li>- Re-named QuoteType as InterestType</li> <li>- Introduced new value to the following field: <ul style="list-style-type: none"> <li>o ExecInst - added support for Last Sale Peg</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>- Liquidity Indicators (Appendix) <ul style="list-style-type: none"> <li>o Updated value applicability for NYSE market</li> <li>o Introduced new values - ASPZ, AJPZ, ASP, AJP, ADR, AC, RDA, ZB, ZBZ</li> </ul> </li> <li>- Pillar Reason Codes (Appendix) - added new reason codes 169+</li> <li>- Added new Appendix - Order Type/Modifier Applicability by Participant &amp; Symbol</li> <li>- Bulk Cancel Request and Cancel on Disconnect - updated list of exclusions for order cancellation</li> </ul> <p>Pillar Gateway support for NYSE, specific to Designated Market Maker (DMM):</p> <ul style="list-style-type: none"> <li>- Reference Data section - added descriptions for DMM Symbol Reference Data (Start of Day) and DMM Symbol Subscription (Intraday)</li> <li>- Message Throttling section - added details regarding multi-message</li> <li>- Application Layer Reject message - added details to reject TG Action and Manual Action Response messages</li> <li>- Introduced new values to following fields: <ul style="list-style-type: none"> <li>o InterestType - added support for Capital Commitment Order and Capital Commitment Order – Partial Fill contra-side</li> <li>o BulkCancelType - added support to cancel CCO orders within MPID</li> <li>o RejectType - added support to reject TG Action and Manual Action Response messages</li> </ul> </li> </ul> <p>Denoted changes to protocol support for the following markets beginning on a date announced via Trader Update:</p> <ul style="list-style-type: none"> <li>- NYSE Arca Equities - elimination of Retail Order Type 2 (via ExtendedExeclnst)</li> <li>- NYSE Arca Equities and NYSE National - introduction of Minimum Fill (via RoutingInstruction)</li> </ul>
August 20, 2018	2.2	Added example in section “Failure Recovery” → “Primary Production Environment.”
May 24, 2018	2.1	Added new Liquidity Indicators for NYSE Arca Equities (Appendix) - Add Retail Provider Sub Dollar (AREZ); 945/355 Executed on NYSE Retail (XNRT); 945/355 Executed on NYSE American Retail (XART); 945/355 Executed on Away Market Non-NYSE Group (XDRT).
February 8, 2018	2.0	Added protocol support for NYSE National Equities.
October 3, 2017	1.10	Updated message throttle rate to 500 messages/100 milliseconds. Updated protocol support for NYSE Arca Equities and NYSE American Equities – new ExtendedExeclnst value 8 = Imbalance Offset. New liquidity indicators for NYSE Arca Equities and NYSE American in support of Imbalance Offset order.
September 13, 2017	1.9	Updated protocol support for NYSE American Equities – new RoutingInst value 8 = Minimum Fill (must be entered with MinQty tag populated with a non-zero value)
July 17, 2017	1.8	Added implementation detail in section Message Throttling. Removed duplicate entries of liquidity indicators AND, RND for Dark Primary Peg, and simplified original descriptions to be applicable to non-displayed orders in

		general (including Dark Primary Peg), in Appendix.
June 22, 2017	1.7	<p>Added New Liquidity Indicators for NYSE American – in support of Discretionary Peg Order and Dark Primary Peg Order.</p> <p>Updated references of “Arca/American/NYSE Only” order to “Non-Routable Limit Order” (for NYSE Arca Equities, still known as Arca Only Order pending official name change).</p> <p>Clarification regarding field ‘RefClOrdID’ for STP cancellation against a contra-side order entered in FIX protocol.</p>
May 16, 2017	1.6	<p>Updated protocol applicability for NYSE American Equities:</p> <ul style="list-style-type: none"> <li>- MinPegQty and DiscPriceRng – removed</li> <li>- MMID – added</li> </ul>
April 12, 2017	1.5	<p>Updated protocol applicability for NYSE American Equities (formerly known as NYSE MKT Equities):</p> <ul style="list-style-type: none"> <li>- RetailIndicator – removed support for Retail Order</li> <li>- TradingSessionID – added support all trading sessions</li> <li>- OrderCapacity – removed support for Error Account</li> <li>- ExtendedExecInst – removed support for Add Liquidity Only; No Route to IOI; No Trade against MPL and No Route to IOI; Retail Order Type 1; Retail Order Type 2; Retail Provider; Imbalance Offset. Added support for Discretionary Peg; Dark Primary Peg</li> <li>- QuoteType – added support for Q-Order</li> <li>- ProactivelyLocked – removed support for Proactive Trade Non Display</li> </ul> <p>Added Liquidity Indicator values and definitions in support of NYSE American Equities (Appendix). Added new Liquidity Indicators for both NYSE Arca Equities and NYSE American Equities – Add MPL Sub Dollar Execution; Add Non-Displayed Sub Dollar Execution; Remove Regular Limit IOC; Remove Sub Dollar IOC; Remove Sub Dollar MPL Order; Remove Non-Displayed Sub Dollar Limit Order.</p> <p>Updated the binary Order Types matrix in support of NYSE American Equities (link to the matrix in Appendix) – added Discretionary Peg Order and Dark Primary Peg order types.</p> <p>Added descriptive detail to the section FIX Drop Copies – regarding the mapping of binary ‘UserData’ field to the FIX drop copy tag Account (1).</p>
February 23, 2017	1.4	<p>Performed some or all of the following modifications to each of the below message types (lengths and offsets changed) – eliminated fields OrdKey/OrigOrdKey; added fields ClOrdID/OrigClOrdID; added field MPID; resized/moved/added field UserData</p> <ul style="list-style-type: none"> <li>- New Order Single and Cancel/Replace Request</li> <li>- Order Cancel Request</li> <li>- Order Modify Request</li> <li>- Bulk Cancel Request</li> <li>- Order and Cancel/Replace Acknowledgement</li> <li>- Order Modify/Cancel Request Acknowledgment and UROUT</li> <li>- Order Priority Update Acknowledgment</li> </ul>



		<ul style="list-style-type: none"> <li>- Execution Report</li> <li>- Trade Bust/Correct</li> <li>- Order/Cancel/Cancel-Replace/Modify Reject</li> </ul> <p>Removed field ParentFirmOrdKey and added field ParentFirmCLOrdID on the following data structures:</p> <ul style="list-style-type: none"> <li>- OptionalOrderAddOn – NYSE Floor Broker</li> <li>- OptionalReportAddOn – NYSE Floor Broker</li> </ul> <p>Added detail on validation of the field UserData.</p> <p>Added descriptive detail to the following sections:</p> <ul style="list-style-type: none"> <li>- Failure Recovery – added sub-section Pillar Risk Mitigation</li> <li>- MsgHeader – regarding calculation of the field ‘length’</li> <li>- FIX Drop Copies – regarding the mapping of binary order entry fields to FIX drop copy message tags</li> <li>- Session Configuration Request/Acknowledgement – regarding ThrottlePreference settings and UserSessionStatus values</li> <li>- New Order Single and Cancel/Replace Request; Order Modify Request – regarding expected CLOrdID value during order chaining</li> </ul> <p>Redefined value 13 and added values 14 through 16 to the field AckType.</p> <p>Added Pillar Reason Codes 167 (Invalid UserData) and 168 (Pillar Risk Mitigation) to Appendix.</p> <p>Added hyperlink and guidelines for interpretation of NYSE Arca Equities order type validation matrix to Appendix.</p> <p>Clarification that the fields MinPegQty and DiscPriceRng are not currently available for NYSE Arca Equities.</p>
January 5, 2017	1.3	<p>Modified field SelfTradePrevention on message types User Session Configuration Ack and User Session Configuration Request – updated data type to u8.</p> <p>Updated description for field Username on message types User Session Configuration Ack, User Session Configuration Request, MPID Configuration, and MMID Configuration.</p> <p>Clarified section Failure Recovery – to indicate that the number of old, recovered GT streams available after intraday session restart (without software rollback) will be equal to the number of such restarts completed during that trading day.</p>
December 8, 2016	1.2	<p>Updated permission for Trader to Gateway (TG) stream to Write only.</p> <p>Added new message type – Sequenced Filler Message.</p> <p>Added format for messages delivered over Binary Echo Session, Gateway to Trader (GT) stream.</p> <p>Updated message length of Trade Bust/Correct to 78 bytes.</p> <p>Clarification that OptionalOrderAddOn will never be sent for NYSE Arca Equities on Order Modify/Cancel Request Acknowledgement and UROUT (will be sent conditionally for NYSE and NYSE MKT only).</p>

		<p>Updated the following fields:</p> <ul style="list-style-type: none"> <li>- MMID – updated data type to u32</li> <li>- MPVClassID – updated data type to u16</li> <li>- RejectType – updated data type to u8</li> <li>- Side – on Bulk Cancel Request, valid values are 1 (buy) and 2 (sell)</li> </ul> <p>Removed description of the value '0' from fields where '0' is not accepted – OrderCapacity, TradingSessionID, TimeInForce, OrdType, Side, BulkCancelType, AckType, ParticipantType.</p> <p>Clarification that MPID on Cancel/Replace Request must match the original order.</p> <p>Added Pillar Reason Code 166 (Invalid Permission for SenderCompID) to Appendix.</p>
October 28, 2016	1.1	<p>Added the following new message types:</p> <ul style="list-style-type: none"> <li>- MPID Configuration</li> <li>- MMID Configuration</li> </ul> <p>Added the following new fields to existing message types:</p> <ul style="list-style-type: none"> <li>- TransactTime – to all outgoing (GT stream) messages that did not previously have it</li> <li>- SymbolID – to all incoming (TG stream) and all outgoing (GT stream) messages that did not previously have it</li> <li>- TestSymbolIndicator – to Equities Symbol Reference Data message</li> <li>- EffectiveTime – to OptionalOrderAddOn - Equities Customer</li> <li>- OrdKey and WorkingAwayFromDisplay – to Order and Cancel/Replace Acknowledgment message; re-sequenced among other fields</li> <li>- PreLiquidityIndicator – to Order Priority Update Acknowledgment</li> <li>- Filler – additional bytes reserved for future use added to Order/Cancel/Cancel-Replace/Modify Reject message</li> <li>- Various new fields and new values – to Session Configuration Acknowledgment and Session Configuration Request messages</li> </ul> <p>Modifications to existing fields:</p> <ul style="list-style-type: none"> <li>- MPVClassID – replaced MPVClassName in Equities Symbol Reference Data message</li> <li>- CancellInsteadOfReprice – replaced RepriceOrCancel in BitfieldOrderInstructions, and values updated</li> <li>- RefSeqMsgID – replaced RequestSeqMsgID in Order Modify/Cancel Request Acknowledgment and UROUT</li> <li>- OrdKey – replaced OrigOrdKey in Order Modify/Cancel Request Acknowledgment and UROUT</li> </ul> <p>Updated values for existing fields:</p> <ul style="list-style-type: none"> <li>- Message 'Type' – in SeqMsg data structure</li> <li>- AttributedQuote</li> <li>- TimeInForce</li> <li>- SelfTradeType</li> <li>- BulkCancelType</li> </ul>

		<ul style="list-style-type: none"> <li>- Side</li> <li>- AckType</li> <li>- PreLiquidityIndicator</li> <li>- Pillar Reason Codes – added 154 through 165; see Appendix</li> </ul> <p>Added/updated descriptive detail to the following sections:</p> <ul style="list-style-type: none"> <li>- Failure Recovery</li> <li>- Reference Data – start of day and intraday</li> <li>- Self Trade Prevention</li> <li>- Message Throttling</li> <li>- FIX Drop Copies</li> <li>- Binary Echo Sessions</li> <li>- Session Configuration Acknowledgment and Session Configuration Request</li> <li>- Bulk Cancel Request</li> </ul>
August 12, 2016	1.0	Initial version of the specification.