NYSE Pillar Gateway
FIX
Protocol Specification

NYSE Equities

NYSE Arca Equities

NYSE American Equities

NYSE National Equities

February 8, 2018

SPEC VERSION #2.0

Contents

1. Introduction

This document describes the implementation of the FIX 4.2 protocol used by the NYSE Group markets via the Pillar FIX Gateway. It includes information pertaining to application communication with the following venues.

Current Market Support	Future Market Support
NYSE Arca Equities	NYSE Equities
NYSE American Equities	NYSE Arca Options
NYSE National Equities	NYSE Amex Options
	NYSE Bonds

This document assumes the reader has a thorough understanding of the FIX 4.2 protocol available at http://www.fixprotocol.org/. As such, it is not intended as a guide to constructing a FIX client. Rather, it is a reference to ensure that a firm's FIX client, constructed according to the FIX 4.2 specifications, will be compatible with the Pillar FIX Gateway.

1.1 About the Pillar FIX Gateway

Pillar FIX 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.

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 market-specific FIX tags and values may be transacted over that session. For details on the applicability of each tag and value to the various markets, please refer to the FIX Application Layer 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 FIX Gateway users may be logged in to either the primary or backup destination IP addresses, but not both, at any given time.
    - Once logged in, a successful login attempt on the other IP address will result in a logout on the first IP.
    - In the event that the primary destination becomes unavailable, the user should attempt to log in on the secondary IP address.
        - Cancel on Disconnect will be triggered if the outage was caused by a gateway failure or when the login occurs on the secondary IP address, honoring the Cancel on Disconnect configuration for the session.

        - The sequence number on the secondary IP address will always continue from the last Application Layer message transacted on the primary IP (and vice versa). That is, Session Layer messages will not be recovered nor counted in determining the next sequence number expected from the client.
    - 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:
            - If the session restart was not accompanied by a software release rollback, Application Layer messages transacted on the affected session prior to the outage will be recoverable, and the sequence number will continue from the last Application Layer message transacted. That is, Session Layer messages will not be recovered.
            - If the session restart was accompanied by a software release rollback, messages transacted on the affected session prior to the outage will not be recoverable. Sequence numbers will start with 1.
- **DR Production Environment** – In the event that the Pillar Primary Production environment becomes unavailable, Pillar FIX 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.
    - UROUTs will not be sent for the orders.
    - Messages transacted on the affected session prior to the outage will not be recoverable. Sequence numbers will start with 1.

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

Option 1 - Trading Support

- Sub-Option 1 - NYSE / NYSE American Equities
- Sub-Option 2 - NYSE Arca Equities

Option 2 - API Connectivity/Order Routing Support

- Sub-Option 1 - Production support
- Sub-Option 2 - UAT support

Option 3 - SFTI Network Operations and Colocation Support

Option 4 - Market Data Support

Option 5 - Client Relationship Services

Option 6 - Other technical support inquiries

1.5 Data Types

A data type and length are provided for each FIX tag in this specification in the "Data Type" column of the message format tables. These length values represent systemic limits enforced by the Pillar FIX Gateway. All values entered by firms are subject to additional validations, as indicated in the "Values" column of the tables.

Firms should not null pad a FIX tag to equal the systemic limit. Instead, each tag should be populated with the natural length of the intended value.

1.6 Mapping Orders and Executions to NYSE XDP Market Data

The NYSE Pillar FIX Gateway provides order and deal identifiers as unique 8 byte integers (unsigned Little Endian), represented as strings up to 20 characters in the following outgoing message types.

FIX Message Type	FIX Tag(s) for Mapping to XDP
MsgType 8 – Execution Report	OrderID (37), DealID (9483)
MsgType 9 – Cancel, Cancel/Replace Reject	OrderID (37)

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
GTCIndicator	0	1	Binary	In NYSE Pillar, this value will always be: 0 = Day Order
SystemID	1	1	Binary	Unique ID of the originating Pillar symbol partition. This value is found in the Symbol Index Mapping message's ID field.
MarketID	2	2	Binary	ID of the Originating market in the Symbol Index Mapping.
TradeID	4	4	Binary	Public TradeID as it will appear in XDP products.

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

2. Trading Services

2.1 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 (OnBehalfOfCompID) + OnBehalfOfSubID (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 (OnBehalfOfCompID) + OnBehalfOfSubID (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 –** 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 (OnBehalfOfCompID) + OnBehalfOfSubID (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.

2.2 Message Throttling

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

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.

Throttled messages are queued and processed in time sequence as the message read rate allows. Gap Fill Requests will be processed without impact to processing of inbound messages. However, responses to inbound application messages (acknowledgements, execution reports, etc.) will be sequenced after a Gap Fill Request that is in process.

2.3 FIX Drop Copies

Drop copies of order activity transacted over the Pillar FIX 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)

3. FIX Header & Trailer

All FIX messages sent and received via the Pillar FIX Gateway must include a Header and Trailer as defined below.

3.1 Header

Tag	Field Name	Data Type	Req'd	Values
8	BeginString	String[8]	Y	(ALWAYS FIRST FIELD IN MESSAGE) FIX.4.2
9	BodyLength	Int[6]	Y	(ALWAYS SECOND FIELD IN MESSAGE) Message length, in bytes, forward to the CheckSum field.
35	MsgType	String[3]	Y	(ALWAYS THIRD FIELD IN MESSAGE) A = Logon 0 = Heartbeat 1 = Test Request 2 = Resend Request 3 = Session Layer Reject 4 = Sequence Reset 5 = Logout D = New Order Single F = Order Cancel Request G = Order Cancel/Replace Request 8 = Execution Report 9 = Order Cancel Reject
34	MsgSeqNum	Int[20]	Y	Last sequence number processed. First message sent has sequence of 1.
43	PossDupFlag	Boolean	C	Y = Yes N = No
49	SenderCompID	String[32]	Y	Incoming Messages from Firm: Agreed upon Connection identifier set between the Exchange and the entering firm. Outgoing Messages from Exchange: Market Identifier Code (MIC) of the sending Exchange. ARCX = NYSE Arca Equities XNYS = NYSE Equities XASE = NYSE American Equities XCIS = NYSE National Equities
50	SenderSubID	String[32]	C	Incoming Messages from Firm: For Market Makers this value represents the Market Maker ID (MMID), agreed upon between the firm and the Exchange. Outgoing Messages from Exchange: Set to the value of the original SenderCompID on the incoming message from the firm. On drop copy sessions, represents the SenderCompID of the order entry session which originated the message.
52	SendingTime	UTC Timestamp [27]	Y	Time of message transmission on Incoming Messages from Firms & Outgoing messages from Exchange. UTC time, in Milliseconds - YYYYMMDD-HH:MM:SS.mmm

Tag	Field Name	Data Type	Req'd	Values
56	TargetCompID	String[32]	Y	Incoming Messages from Firm: Market Identifier Code (MIC) of target Exchange. ARCX = NYSE Arca Equities XNYS = NYSE Equities XASE = NYSE American Equities XCIS = NYSE National Equities Outgoing Messages from Exchange: Agreed upon connection identifier set between the Exchange and the entering firm.
57	TargetSubID	String[32]	C	On Incoming Messages from Firm: Populate with "RET" (all caps) to designate an order as eligible for retail billing. All other values will be rejected. Not valid for orders entered on NYSE American and NYSE National. On Outgoing Messages from Exchange: If provided on the incoming message from the firm (in SenderSubID), will be populated with the Market Maker ID (MMID), agreed upon between the firm and the Exchange.
97	PossResend	Boolean	C	Y = Yes N = No
115	OnBehalfOfCompID	String[4]	C	Incoming Messages from Firm: Firm Identifier – MPID. Required on all Application Layer message types. If provided on a Session Layer message type, the value will not be validated. Outgoing Messages from Exchange: If provided on the incoming message from the firm (in DeliverToCompID), will be populated with the NYSE Agency Code or Floor Trader Badge, or Options MarketMaker for Directed Order.
116	OnBehalfOfSubID	String[4]	N	Incoming Messages from Firm: Customer defined – identifies specific entity/trading desk of the firm.
122	OrigSendingTime	UTC Timestamp [27]	N	Original time of message transmission when transmitting orders as the result of a resend request. UTC time, in Milliseconds - YYYYMMDD-HH:MM:SS.mmm
128	DelivertoCompID	String[5]	C	Incoming Messages from Firm: NYSE Agency Code or Floor Trader Badge. Options MarketMaker for Directed Order. Outgoing Messages from Exchange: Firm Identifier – MPID. Required on all Application Layer message types.
129	DeliverToSubID	String[4]	N	Outgoing Messages from Exchange: If provided on the incoming message from the firm (in OnBehalfOfSubID), will be populated with the customer defined value representing the specific entity/trading desk of the firm.

3.2 Trailer

Tag	Field Name	Data Type	Req'd	Values
10	CheckSum	String[6]	Y	(ALWAYS LAST FIELD IN MESSAGE; Always unencrypted) Three byte, simple checksum that serves, with the trailing <SOH>, as the end-of-message delimiter.

4. FIX Session Layer

This section describes the protocol for the initiation, operation, and termination of FIX sessions with the Pillar FIX Gateway. TCP/IP is the required transmission protocol, and FIX 4.2 is the required application protocol supplemented by certain custom tags and values as defined in this specification. The Pillar FIX Gateway will reject a message with any tags that are not defined for the given message type in this specification.

4.1 Pillar FIX Session Layer Handling

The Pillar FIX Gateway validates and handles inbound Session Layer messages according to the following rules:

- **MsgSeqNum as expected** – all messages with a sequence number equal to the expected value will be accepted and processed in full, provided they pass basic message type format validations. This includes both Session and Application Layer messages, regardless of the PossDup or GapFillFlag values indicated on the inbound message.

- **MsgSeqNum greater than expected** – in general, upon receipt of a message with a sequence number greater than the expected value, Pillar FIX Gateway will neither accept nor process the message and will not increment the expected client-side sequence number. The gateway will respond with a Resend Request with BeginSeqNo = the expected value, and EndSeqNo = 0 (infinity).

  However, there are two cases with special handling:

  - **Login Request with MsgSeqNum greater than expected** – Pillar FIX Gateway will send a Logon Response, immediately followed by the Resend Request.

  - **Resend Request with MsgSeqNum greater than expected** – Pillar FIX Gateway will process the request, provided it passes basic message type format validations. The requested messages will be retransmitted to the client.

  - **Sequence Reset with GapFillFlag set to N, or not set** – Pillar FIX Gateway will accept and process the request, provided it passes basic message type format validations. The expected client-side sequence number will be adjusted according to the NewSeqNo specified in the Sequence Reset message, as long as the requested number is higher than the next expected value.

- **MsgSeqNum less than expected** – in general, upon receipt of a message with a sequence number less than the expected value, Pillar FIX Gateway will respond with a Session-Level Reject message, then close the TCP connection. The expected client-side sequence number will not be incremented.

  However, there are two cases with special handling:

- **Any Message with PossDup set to Y** – Pillar FIX Gateway will silently ignore the message.
- **Sequence Reset with GapFillFlag set to N, or not set** – Pillar FIX Gateway will accept and process the request, provided it passes basic message type format validations. The expected client-side sequence number will be adjusted according to the NewSeqNo specified in the Sequence Reset message, as long as the requested number is higher than the next expected value.

4.2 Logon

This single message format is used as either a Logon Request or Logon Response depending on the message direction:

Usage	Description	Direction
Logon Request	Request to establish a FIX session.	Client to Gateway
Logon Response	Confirmation a FIX session has been established successfully.	Gateway to Client

The Pillar FIX Gateway authenticates the Logon Request by checking the SenderCompID [49] against the Username [553] and Password [554]. If either the Username or Password does not match the previously agreed value for that SenderCompID, the Pillar FIX Gateway will send a Logout Message [35=5] with SessionStatus [1409=5], then close the TCP connection. If the Logon Request is authenticated, the Pillar FIX Gateway will respond with a confirmation Logon Response.

The format for the Logon Request message is below:

<table>
<tr><th>Tag</th><th>Field Name</th><th>Data Type</th><th>Req'd</th><th>Description</th><th>Values</th></tr>
<tr><td></td><td>Standard Header</td><td></td><td>Y</td><td>MsgType [35] = A</td><td></td></tr>
<tr><td>98</td><td>EncryptMethod</td><td>Int[1]</td><td>Y</td><td>Must be 0 (No encryption).</td><td>0</td></tr>
<tr><td>108</td><td>HeartBtInt</td><td>Int[2]</td><td>Y</td><td>The Heartbeat interval in seconds.</td><td>1-60</td></tr>
<tr><td>95</td><td>RawDataLength</td><td>Int[1]</td><td>C</td><td>Length of RawData [96]. Must be included if RawData [96] is present.</td><td>3</td></tr>
<tr><td>96</td><td>RawData</td><td>String[3]</td><td>C</td><td>Session configuration settings. Optional on the Logon request, but always included in the Logon response. If included, all positions must be populated. Valid values:
<table>
<tr><th>Position</th><th>Description</th><th>Valid Values</th></tr>
<tr><td>1</td><td>Cancel on Disconnect</td><td>0 = Cancel on Disconnect Disabled

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*)

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

- MOC/LOC orders during Closing Auction freeze</td></tr>
</table></td><td>Byte1: 0-2
Byte2: 0-1
Byte3: T,N,O,C,D</td></tr>
</table>

<table>
<tr><th>Tag</th><th>Field Name</th><th>Data Type</th><th>Req'd</th><th>Description</th><th>Values</th></tr>
<tr><td></td><td></td><td></td><td></td><td>
<table>
<tr><td></td><td></td><td>- GTC orders (Options markets)

Note: Cancel on Disconnect may only be "upgraded" through Logon. If Cancel on Disconnect is Disabled by default, the Logon message can Enable it (setting = 1 or 2). If the default configuration value = 1, the Logon Request can be used to set the configuration = 2.

A change in configuration from 2 to 1 or to 0 is not allowed through the Logon Request. To make these changes, the firm must contact NYSE Group Market Support.</td></tr>
<tr><td>2</td><td>Subscription to Order Priority Update Acknowledgements</td><td>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)</td></tr>
<tr><td>3</td><td>Self-Trade Prevention</td><td>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.

T = No Self Trade Prevention
N = Cancel Newest
O (letter O) = Cancel Oldest
C = Cancel Both
D = Cancel Decrement</td></tr>
</table>

Example: Tag 96 = 11C: Cancel all orders for the Session for Cancel on Disconnect AND Receive unsolicited "Order Priority Update Ack" message on the Session AND Cancel Both for Self Trade Prevention.

If Tag 96 is omitted in the Logon request, Pillar FIX Gateway will use the client defaults. If Tag 96 is included, the default configuration for the client will be overridden for the single session only. Clients must contact NYSE Group Market Support to change default configurations.</td><td></td></tr>
<tr><td>141</td><td>ResetSeqNumFlag</td><td>Boolean</td><td>N</td><td>Indicates both sides of a FIX session should reset sequence numbers. If included, this tag must be set to N.</td><td>N</td></tr>
<tr><td>553</td><td>Username</td><td>String [16]</td><td>Y</td><td>Username agreed in advance with NYSE Group – SenderCompID.</td><td>String [16]</td></tr>
<tr><td>554</td><td>Password</td><td>String [32]</td><td>Y</td><td>Password agreed in advance with NYSE Group. Required on Logon Request, but omitted from Logon response.</td><td>String [32]</td></tr>
<tr><td></td><td>Standard Trailer</td><td></td><td>Y</td><td></td><td></td></tr>
</table>

The format for the successful Logon Response message is below:

<table>
<tr><th>Tag</th><th>Field Name</th><th>Data Type</th><th>Req'd</th><th>Description</th><th>Values</th></tr>
<tr><td></td><td>Standard Header</td><td></td><td>Y</td><td>MsgType [35] = A</td><td></td></tr>
<tr><td>58</td><td>Text</td><td>String [40]</td><td>N</td><td>Text associated with Logon Response</td><td>String [4]</td></tr>
<tr><td>789</td><td>NextExpected MsgSeqNum</td><td>Int [20]</td><td>Y</td><td>Next MsgSeqNum [34] expected by Pillar</td><td>Next MsgSeqNum [34] expected by Pillar</td></tr>
<tr><td>98</td><td>EncryptMethod</td><td>Int [1]</td><td>Y</td><td>Must be 0 (No encryption).</td><td>0</td></tr>
<tr><td>108</td><td>HeartBtInt</td><td>Int [2]</td><td>Y</td><td>The Heartbeat interval in seconds.</td><td>1-60</td></tr>
<tr><td>95</td><td>RawDataLength</td><td>Int [1]</td><td>C</td><td>Length of RawData [96]. Must be included if RawData [96] is present.</td><td>3</td></tr>
<tr><td>96</td><td>RawData</td><td>String [3]</td><td>C</td><td>Session configuration settings. Optional on the Logon request, but always included in the Logon response. If included, all positions must be populated. Valid values:
<table>
<tr><th>Position</th><th>Description</th><th>Valid Values</th></tr>
<tr><td>1</td><td>Cancel on Disconnect</td><td>0 = Cancel on Disconnect Disabled

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*)

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

- MOC/LOC orders during Closing Auction freeze

- GTC orders (Options markets)

Note: Cancel on Disconnect may only be “upgraded” through Logon. If Cancel on Disconnect is Disabled by default, the Logon message can Enable it (setting = 1 or 2). If the default configuration value = 1, the Logon Request can be used to set the configuration = 2.

A change in configuration from 2 to 1 or to 0 is not allowed through the Logon Request. To make these changes, the firm must contact NYSE Group Market Support.</td></tr>
<tr><td>2</td><td>Subscription to Order Priority Update Acknowledgements</td><td>0 = Not subscribed to receive the unsolicited "Order Priority Update Ack" message on the Session.

1 = Receive unsolicited "Order Priority Update</td></tr>
</table></td><td>Byte1: 0-2
Byte2: 0-1
Byte3: T,N,O,C,D</td></tr>
</table>

<table>
<tr><th>Tag</th><th>Field Name</th><th>Data Type</th><th>Req'd</th><th>Description</th><th>Values</th></tr>
<tr><td></td><td></td><td></td><td></td><td><table>
<tr><td></td><td></td><td>Ack" message on the Session (for Reserve Order replenishment)</td></tr>
<tr><td>3</td><td>Self Trade Prevention</td><td>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.

T = No Self Trade Prevention
N = Cancel Newest
O (letter O) = Cancel Oldest
C = Cancel Both
D = Cancel Decrement</td></tr>
</table>
Example: Tag 96 = 11C: Cancel all orders for the Session for Cancel on Disconnect AND Receive unsolicited "Order Priority Update Ack" message on the Session AND Cancel Both for Self Trade Prevention</td><td></td></tr>
<tr><td>553</td><td>Username</td><td>String [16]</td><td>Y</td><td>Username agreed in advance with NYSE Group – SenderCompID.</td><td>String [16]</td></tr>
<tr><td>1409</td><td>SessionStatus</td><td>Int [1]</td><td>N</td><td>Status of FIX Session.</td><td>0 (Session Active)</td></tr>
<tr><td></td><td>Standard Trailer</td><td></td><td>Y</td><td></td><td></td></tr>
</table>

4.3 Logout

This single message format is used for different purposes depending on the message direction and SessionStatus [1409] value:

Usage	Description	Direction	SessionStatus [1409]
Logout Request	Client request to the Pillar FIX Gateway to terminate a FIX session.	Client to Pillar	n/a
Logout Response	The Pillar FIX Gateway response to a client Logout Request indicating the client may terminate the session.	Pillar to Client	0 = Session active
Unsolicited Logout	The Pillar FIX Gateway has terminated the FIX session.	Pillar to Client	4 = Session logout complete
Logon Reject	The Pillar FIX Gateway has rejected the client Logon Request.	Pillar to Client	5 = Invalid username or password

The format for the Logout message is below:

Tag	Field Name	Data Type	Req'd	Description	Values
	Standard Header		Y	MsgType[35] = 5	

Tag	Field Name	Data Type	Req'd	Description	Values
1409	SessionStatus	Int[1]	N	Current status of the FIX session provided to indicate the message usage. The Pillar FIX Gateway will ignore this field if received from the client on a Logout message.	0 = Session Active 4 = Session logout complete 5 = Invalid username or password
58	Text	String [40]	N	Logout description.	String [40]
789	NextExpected MsgSeqNum	Int[20]	Y	Next MsgSeqNum [34] expected by Pillar	Next MsgSeqNum [34] expected by Pillar
	Standard Trailer		Y		

4.4 Heartbeat and Test Request

The client must send a Heartbeat message [35=0] if the interval specified in the Logon Message HeartBtInt [108] passes without the client sending any messages. If HeartBtInt seconds pass without the Pillar FIX Gateway receiving any messages from the client, the Pillar FIX Gateway will send a Test Request [35=1] to solicit a Heartbeat from the client. If an additional HeartBtInt seconds pass without receiving any messages, the Pillar FIX Gateway will send a logout and close the TCP connection.

It is recommended that the client implements similar monitoring for messages received from the Pillar FIX Gateway.

The Heartbeat message format is below:

Tag	Field Name	Data Type	Req'd	Description	Values
	Standard Header		Y	MsgType[35] = 0	
112	TestReqId	String[20]	C	Required when the Heartbeat is in response to a Test Request. Must be the same value as in the Test Request that solicited the Heartbeat.	String[20]
	Standard Trailer		Y		

The Test Request message format is below:

Tag	Field Name	Data Type	Req'd	Description	Values
	Standard Header		Y	MsgType[35] = 1	
112	TestReqID	String[20]	Y	Identifier included in Test Request message to be returned in resulting Heartbeat.	String[20]
	Standard Trailer		Y		

4.5 Message Retransmission

If Pillar receives a MsgSeqNum [34] higher than expected, Pillar will disregard or process the message, and may issue a Resend Request, as described in the "Pillar FIX Session Layer Handling" section of this specification.

Clients may issue a Resend Request to Pillar. In response, Pillar will retransmit Application Layer messages only. Pillar will never retransmit any Session Layer messages (including Session-Level Rejects).

The format for the Resend Request message is below:

Tag	Field Name	Data Type	Req'd	Description	Values
	Standard Header		Y	MsgType[35] = 2	
7	BeginSeqNo	Int[20]	Y	The message sequence number of the first message in the range of messages to be re-sent.	1-18446744073709551615
16	EndSeqNo	Int[20]	Y	The message sequence number of the last message in the range of messages to be re-sent. If the request is for all the messages since the BeginSeqNo, set EndSeqNo to 0.	0-18446744073709551615
	Standard Trailer		Y		

Note: Pillar will ignore the contents of PossResend [97] beyond basic message integrity validations and will treat all messages with PossResend = Y as new messages.

4.6 Sequence Reset

The client may send Pillar a Sequence Reset message to advance the next expected MsgSeqNum [34] Pillar should expect from the client:

Tag	Field Name	Data Type	Req'd	Description	Values
	Standard Header		Y	MsgType[35] = 4	
123	GapFillFlag	Boolean	Y	Indicates the mode in which the message is to be interpreted: Y = Gap Fill Reset (MsgSeqNum [34] validated) N = Sequence Reset (MsgSeqNum [34] ignored)	Y, N
36	NewSeqNo	Int[20]	Y	The new valid sequence number	1-18446744073709551615
	Standard Trailer		Y		

4.7 Session-Level Rejects

Pillar generates a Session-Level Reject upon receipt of a message containing a session-level rule violation (e.g. a required FIX tag is missing). Error details are contained in SessionRejectReason [373] and 58 [Text], while the tag causing the error (if applicable) is identified in RefTagID [371].

The Session-Level Reject message format is below:

Tag	Field Name	Data Type	Req'd	Description	Values
	Standard Header		Y	MsgType [35] = 3	
45	RefSeqNum	Int[20]	Y	The sequence number of the rejected message.	1-18446744073709551615
373	SessionRejectReason	Int[2]	N	A code, which identifies the reason for the session level reject. Valid values: 0 = Invalid Tag Number 1 = Required Tag Missing 2 = Tag Not Defined For This Message Type 3 = Undefined Tag 4 = Tag specified without a value 5 = Value is incorrect (out of range) for this tag 6 = Incorrect data format for value 7 = Decryption problem 8 = Signature problem 9 = CompID problem (SenderCompID, TargetCompID, or both) 10 = SendingTime accuracy problem 11 = Invalid MsgType 13 = Tag Appears More than Once (non-repeating group tags only) 14 = Tag specified out of required order 15 = Repeating group fields out of order 99 = Other	0 1 2 3 4 5 6 7 8 9 10 11 13 14 15 99
371	RefTagId	Int[9]	N	The tag number of the FIX field being referenced.	1-999999999
372	RefMsgType	String[2]	N	The MsgType of the FIX message being referenced.	String[2]
58	Text	String[40]	N	Reject text, which identifies the reason for the rejected message. Text is limited to 40 characters.	String[40]
789	NextExpected MsgSeqNum	Int[20]	Y	Next MsgSeqNum [34] expected by Pillar	Next MsgSeqNum [34] expected by Pillar
	Standard Trailer		Y		

5. FIX Application Layer

This section describes the FIX Application messages currently supported by the Pillar FIX Gateway. Only the message types represented here will be accepted.

Order, Cancel, and Cancel/Replace acknowledgments will be returned with all tags submitted on the original request.

5.1 New Order – Single

This message is used to send a New Order to either the NYSE Pillar Trading Engine or NYSE Broker Systems (future phase).

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
	Standard FIX Header		Y	MsgType = D	Yes	Yes	Yes	Yes	Yes
1	Account	String[16]	N	Customer defined up to 16 characters; only printable ASCII characters allowed.	Yes	Yes	Yes	Yes	Yes
11	ClOrdID	String[20]	Y	Unique ID of the new Order, Cancel, or Cancel/Replace request as assigned by the firm. Pillar will validate that the ClOrdID is unique for the combination of SenderCompID + OnBehalfOfCompID (MPID) that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given SenderCompID + MPID. Customer defined up to 20 characters.	Yes	Yes	Yes	Yes	Yes
18	ExecInst	Char[1]	C	1 = Not Held (to NYSE Broker Systems only) 5 = Held (to NYSE Broker Systems only) d = Tracking Order f = ISO B = OK to Cross E = DNI	1 5 d f	d f B	d f	d f	d f

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				F = DNR G = All or None R = Primary Peg P = Market Peg M = MPL (Midpoint Liquidity) N = Non-displayed (Retail Price Improvement and Limit-Non Displayed orders) y = Trade-at ISO Note: Values 1 and 5 are valid only for orders routed to NYSE Broker Systems.	R P M N y	R P M N y	R P M N y	R P M N y	R P M N y
38	OrderQty	Qty[9]	Y	1 - 999,999,999	Yes	Yes	Yes	Yes	Yes
40	OrdType	Char[1]	Y	1 = Market 2 = Limit 7 = Inside Limit 9 = AutoMatch Limit P = Pegged	1 2 7 P	1 2 7 P	1 2 7 P	1 2 7 P	1 2 7 P
44	Price	Price[16]	C	0.000001-999,999,999.999999	Yes	Yes	Yes	Yes	Yes
54	Side	Char[1]	Y	1 = Buy 2 = Sell 5 = Sell Short 6 = Sell Short Exempt 8 = Cross 9 = Cross Short A = Cross Short Exempt	1 2 5 6 8 9	1 2 5 6 8 9 A	1 2 5 6 8 9	1 2 5 6 8 9	1 2 5 6 8 9
55	Symbol	String[16]	Y	Valid Equities Ticker Symbol or Options Underlying symbol.	Yes	Yes	Yes	Yes	Yes
58	Text	String[40]	N	On Incoming Messages from Firm: Freeform text field, up to 40 characters. However, will not be passed back in Acknowledgments or any subsequent response messages. On Outgoing Message from Exchange: Reason code and text description for order activity. For	Yes	Yes	Yes	Yes	Yes

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				example, reason for cancel/cancel-replace rejection.					
59	TimeInForce	Char[1]	Y	0 = Day 1 = GTC 2 = At the Opening 3 = IOC 4 = FOK 5 = GTX 6 = GTD 7 = On Close	0 2 3 7	0 2 3 7	0 2 3 7	0 2 3 7	0 2 3 7
60	TransactTime	UTC Timestamp [27]	N	On Incoming Messages from Firm: Customer application time. On Outgoing Message from Exchange: Exchange application time. UTC time, in Milliseconds YYYYMMDD-HH:MM:SS.mmm	Yes	Yes	Yes	Yes	Yes
65	SymbolSfx	String[10]	N	Valid Suffix value	Yes	Yes	Yes	Yes	Yes
110	MinQty	Qty[5]	N	Must be ≥ Round Lot and ≤ OrderQty	Yes	Yes	Yes	Yes	Yes
111	MaxFloor	Qty[5]	C	Must be entered in Round Lots.	Yes	Yes	Yes	Yes	Yes
114	LocateReqd	Boolean	N	N = No Y = Yes	N Y	N Y	N Y	N Y	N Y
386	NoTradingSessions	Int[1]	Y	1	1	1	1	1	1
336	TradingSessionID	Char[1]	Y	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	1 2 4	1 2 4	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
528	OrderCapacity	Char[1]	Y	A = Agency P = Principal R = Riskless Principal Q = Error Account	A P R	A P R Q	A P R	A P R	A P R
7928	SelfTradeType	Char[1]	N	0 (number 0) = Use current Session Configuration STP setting	0	0	0	0	0

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				for the SenderCompID T = No Self Trade Prevention N = Cancel Newest O (letter O)= Cancel Oldest C = Cancel Both D = Cancel Decrement	T N O C D	T N O C D	T N O C D	T N O C D	T N O C D
9303	RoutingInst	Char[1]	C	N = Non Routable R = Routable IOC D = Directed (Primary Only) S = Directed + Routable (PO+S) 1 = Primary Market until 9:45 2 = Primary Market after 3:55 3 = BOTH Primary Market until 9:45 AND Primary Market after 3:55 8 = Minimum Fill (must be entered with MinQty tag populated with a non-zero value)	N R D S 1 2 3	N R D S 1 2 3	N R D S 1 2 3 8	N R D S 1 2 3	N R D S 1 2 3
9403	OffsetPrice	Price[16]	C	Value must be zero, or otherwise greater than or equal to the minimum offset value ($0.01) and in multiples of $0.01.	Yes	Yes	Yes	Yes	Yes
9416	ExtendedExecInst	Char[1]	C	A = Add Liquidity Only (ALO) 0 = No trade against MPL 2 = No route to IOI 3 = No trade against MPL and no route to IOI 4 = Retail Order Type 1 5 = Retail Order Type 2 7 = Retail Provider 8 = Imbalance Offset L = Light C = Complex Order Auction 9 = Discretionary Peg D = Dark (Non-Displayed) Primary Peg	A 0 2 3 4 5 7 8	A 0 2 3 4 5 7 8	0 8 9 D	A 0 2 3	A 0 2 3 4 5 7 8
9448	IntroducingBadge ID	String[4]	Y	1 – 4 numeric characters		Yes			

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
9449	BillTo	String[4]	Y	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			
9451	ParentFirmClOrdID	String[20]	Y	<= 20 chars		Yes			
9453	ParentFirmMPID	String[4]	Y	Firm Identifier - MPID		Yes			
9478	QuoteType	Char[1]	C	E = E-Quote G = G-Quote S = S-Quote Q = Q-Order		E G	Q	Q	Q
9479	DisplayInd	Boolean	C	Indicates if reserve eQuote should be displayed to the DMM. Y = Yes N = No		Y N			
9563	MinPegQty	Qty[9]	C	Must be specified in round lots. 1-999,999,999	Yes	Yes			
9565	DiscPriceRng	Price[16]	C	0.01 - 999,999.99	Yes	Yes			
20001	AttributedQuote	Char[1]	N	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 1	0 1	0 1	0 1	0 1
20002	ProactiveIfLocked	Char[1]	N	0 = No locked functionality 1 = Proactive if Locked for routable orders 2 = Proactive trade non-display (Non-display remove liquidity for non-displayed orders locked by contraside ALOs)	0 1 2	0 1 2	0 1	0 1 2	0 1 2
20003	CancelInsteadOf Reprice	Char[1]	N	0 = Not applicable (follow default order behavior) 1 = Cancel order instead of repricing – for LULD only	0 1	0 1	0 1	0 1	0 1
	Standard FIX Trailer		Y	Standard FIX Trailer	Yes	Yes	Yes	Yes	Yes

5.2 Order Cancel Request

This message is used to either cancel a single targeted order, or to bulk cancel multiple orders based on the combination of criteria specified in the message.

Single Order Cancel Request – OnBehalfOfCompID (115) in the FIX Header of the Cancel Request must be populated with the same MPID that was sent on the order intended for cancellation.

Bulk Cancel Request:

- As with all Application Layer FIX messages, OnBehalfOfCompID (115) in the FIX Header must be populated with a valid MPID configured for use on that session.
    - When selecting a Bulk Cancel Code in OrderID (37) for MPID-level order cancellation, the MPID provided in OnBehalfOfCompID will determine the MPID whose orders are cancelled.
    - When selecting a Bulk Cancel Code in OrderID (37) for Session-level order cancellation, all orders entered on the session will be cancelled, regardless of their MPIDs and the value provided in OnBehalfOfCompID.
- To enter a Bulk Cancel Request for a particular MMID, the firm may populate SenderSubID (50) in the FIX Header with the MMID 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
    - GTC orders (Options markets)

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
	Standard FIX Header		Y	MsgType = F	Yes	Yes	Yes	Yes	Yes
11	ClOrdID	String[20]	Y	Unique ID of the new Order, Cancel, or Cancel/Replace request as assigned by the firm. Pillar will validate that the ClOrdID is unique for the combination of SenderCompID + OnBehalfOfCompID (MPID) that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full	Yes	Yes	Yes	Yes	Yes

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				length of the trading day by the given SenderCompID + MPID. Customer defined up to 20 characters.					
37	OrderID	String[20]	C	Required for Bulk Cancel - populate with Bulk Cancel Code: 0 = No Bulk Cancel 1 = Cancel orders for the individual gateway session only. Cancel – Day; Directed Orders 2 = Cancel orders for the individual gateway session only. Cancel – ALL orders 3 = Cancel orders for the individual gateway session only. Cancel – At the Opening; Day; Directed orders 4 = Cancel orders for the MPID. Cancel – At the Opening; Day; Directed orders 5 = Cancel orders for the MPID. Cancel – Day; Directed orders 6 = Cancel orders for the MPID. Cancel – GTC orders (NYSE Arca & Amex Options only) 7 = Cancel orders for the MPID. Cancel – At the Opening and On Close orders 8 = Cancel orders for the	0 1 2 3 4 5 7 8	0 1 2 3 4 5 7 8	0 1 2 3 4 5 7 8	0 1 2 3 4 5 7 8	0 1 2 3 4 5 7 8

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				MPID. Cancel – Day orders 9 = Cancel orders for the MPID, and Block all new order entry for the MPID. Cancel – Day; Directed orders 10 = Block all new order entry for the MPID 11 = Unblock new order entry for the MPID 12 = Cancel orders for the MPID. Cancel – Directed orders	 9 10 11 12	 9 10 11 12	 9 10 11 12	 9 10 11 12	 9 10 11 12
41	OrigClOrdID	String[20]	C	Required for single order cancellation. Represents the ClOrdID of the previously entered order intended for cancellation (NOT necessarily the initial order of the day). Customer defined up to 20 characters.	Yes	Yes	Yes	Yes	Yes
54	Side	Char[1]	C	Required for single order cancellation. Optional for Bulk Cancel. On a Bulk Cancel Request, 1 (Buy) and 2 (Sell) are supported. In that case, 2 (Sell) will cancel all Sell, Sell Short, and Sell Short Exempt orders. 1 = Buy 2 = Sell 5 = Sell Short 6 = Sell Short Exempt 8 = Cross 9 = Cross Short A = Cross Short Exempt	1 2 5 6 8 9	1 2 5 6 8 9 A	1 2 5 6 8 9	1 2 5 6 8 9	1 2 5 6 8 9

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
55	Symbol	String[16]	C	Required for single order cancellation; Valid Equities Ticker Symbol or Options Underlying symbol. Optional for Bulk Cancel.	Yes	Yes	Yes	Yes	Yes
60	TransactTime	UTC Timestamp [27]	N	On Incoming Messages from Firm: Customer application time. On Outgoing Message from Exchange: Exchange application time. UTC time, in Milliseconds YYYYMMDD-HH:MM:SS.mmm	Yes	Yes	Yes	Yes	Yes
65	SymbolSfx	String[10]	N	Valid Suffix value	Yes	Yes	Yes	Yes	Yes
	Standard FIX Trailer		Y	Standard FIX Trailer	Yes	Yes	Yes	Yes	Yes

5.3 Order Cancel/Replace Request

This message may be used in two ways:

- **Full Cancel/Replace Request –** 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.

- **Modify Request –** 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 ClOrdID (equal to the ClOrdID of the Modify Request).

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

In both cases, the following tags in the FIX Header of the Cancel Request must be populated with the same values that were sent on the order intended for replacement:

- **OnBehalfOfCompID (115)** – MPID

- **SenderSubID (50)** – MMID

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
	Standard FIX Header		Y	MsgType = G	Yes	Yes	Yes	Yes	Yes
1	Account	String[16]	N	Customer defined up to 16 characters; only printable ASCII characters allowed.	Yes	Yes	Yes	Yes	Yes
11	ClOrdID	String[20]	Y	Unique ID of the new Order, Cancel, or Cancel/Replace request as assigned by the firm. Pillar will validate that the ClOrdID is unique for the combination of SenderCompID + OnBehalfOfCompID (MPID) that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given SenderCompID + MPID. Customer defined up to 20 characters.	Yes	Yes	Yes	Yes	Yes
18	ExecInst	Char[1]	C	1 = Not Held (to NYSE Broker Systems only) 5 = Held (to NYSE Broker Systems only) d = Tracking Order f = ISO B = OK to Cross E = DNI F = DNR G = All or None R = Primary Peg P = Market Peg M = MPL (Midpoint Liquidity) N = Non-displayed (Retail Price Improvement and Limit-Non Displayed orders)	1 5 d f R P M N	d f B R P M N	d f R P M N	d f R P M N	d f R P M N

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				y = Trade-at ISO Note: Values 1 and 5 are valid only for orders routed to NYSE Broker Systems.	y	y	y	y	y
38	OrderQty	Qty[9]	Y	1 - 999,999,999	Yes	Yes	Yes	Yes	Yes
40	OrdType	Char[1]	Y	1 = Market 2 = Limit 7 = Inside Limit 9 = AutoMatch Limit P = Pegged	1 2 7 P	1 2 7 P	1 2 7 P	1 2 7 P	1 2 7 P
41	OrigClOrdID	String[20]	Y	ClOrdID of the previously entered order intended for cancellation or replacement (NOT necessarily the initial order of the day). Customer defined up to 20 chars.	Yes	Yes	Yes	Yes	Yes
44	Price	Price[16]	C	0.000001-999,999,999.999999	Yes	Yes	Yes	Yes	Yes
54	Side	Char[1]	Y	1 = Buy 2 = Sell 5 = Sell Short 6 = Sell Short Exempt 8 = Cross 9 = Cross Short A = Cross Short Exempt	1 2 5 6 8 9	1 2 5 6 8 9 A	1 2 5 6 8 9	1 2 5 6 8 9	1 2 5 6 8 9
55	Symbol	String[16]	Y	Valid Equities Ticker Symbol or Options Underlying symbol.	Yes	Yes	Yes	Yes	Yes
58	Text	String[40]	N	On Incoming Messages from Firm: Freeform text field, up to 40 characters. However, will not be passed back in Acknowledgments or any subsequent response messages. On Outgoing Messages from Exchange: Reason code and text description for order activity. For	Yes	Yes	Yes	Yes	Yes

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				example, reason for cancel/cancel-replace rejection.					
59	TimeInForce	Char[1]	Y	0 = Day 1 = GTC 2 = At the Opening 3 = IOC 4 = FOK 5 = GTX 6 = GTD 7 = On Close	0 2 3 7	0 2 3 7	0 2 3 7	0 2 3 7	0 2 3 7
60	TransactTime	UTC Timestamp [27]	N	On Incoming Messages from Firm: Customer application time. On Outgoing Messages from Exchange: Exchange application time. UTC time, in Milliseconds YYYYMMDD-HH:MM:SS.mmm	Yes	Yes	Yes	Yes	Yes
65	SymbolSfx	String[10]	N	Valid Suffix value	Yes	Yes	Yes	Yes	Yes
110	MinQty	Qty[5]	N	Must be ≥ Round Lot and ≤ OrderQty	Yes	Yes	Yes	Yes	Yes
111	MaxFloor	Qty[5]	C	Must be entered in Round Lots.	Yes	Yes	Yes	Yes	Yes
114	LocateReqd	Boolean	N	N = No Y = Yes	N Y	N Y	N Y	N Y	N Y
386	NoTradingSessions	Int[1]	Y	1	1	1	1	1	1
336	TradingSessionID	Char[1]	Y	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	1 2 4	1 2 4	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
528	OrderCapacity	Char[1]	Y	A = Agency P = Principal R = Riskless Principal	A P R	A P R	A P R	A P R	A P R

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				Q = Error Account		Q			
7928	SelfTradeType	Char[1]	N	0 (number 0) = Use current Session Configuration STP setting for the SenderCompID T = No Self Trade Prevention N = Cancel Newest O (letter O)= Cancel Oldest C = Cancel Both D = Cancel Decrement	0 T N O C D	0 T N O C D	0 T N O C D	0 T N O C D	0 T N O C D
9303	RoutingInst	Char[1]	C	N = Non Routable R = Routable IOC D = Directed (Primary Only) S = Directed + Routable (PO+S) 1 = Primary Market until 9:45 2 = Primary Market after 3:55 3 = BOTH Primary Market until 9:45 AND Primary Market after 3:55 8 = Minimum Fill (must be entered with MinQty tag populated with a non-zero value)	N R D S 1 2 3	N R D S 1 2 3	N R D S 1 2 3 8	N R D S 1 2 3	N R D S 1 2 3
9403	OffsetPrice	Price[16]	C	Value must be zero, or otherwise greater than or equal to the minimum offset value ($0.01) and in multiples of $0.01.	Yes	Yes	Yes	Yes	Yes
9416	ExtendedExecInst	Char[1]	C	A = Add Liquidity Only (ALO) 0 = No trade against MPL 2 = No route to IOI 3 = No trade against MPL and no route to IOI 4 = RO Type 1 5 = RO Type 2 7 = Retail Provider 8 = Imbalance Offset L = Light C = Complex Order Auction	A 0 2 3 4 5 7 8	A 0 2 3 4 5 7 8	0 8	A 0 2 3	A 0 2 3 4 5 7 8

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				9 = Discretionary Peg D = Dark (Non-Displayed) Primary Peg			9 D		
9448	IntroducingBadge ID	String[4]	Y	1 – 4 numeric characters		Yes			
9449	BillTo	String[4]	Y	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			
9451	ParentFirmClOrdID	String[20]	Y	<= 20 chars		Yes			
9453	ParentFirmMPID	String[4]	Y	Firm Identifier - MPID		Yes			
9478	QuoteType	Char[1]	C	E = E-Quote G = G-Quote S = S-Quote Q = Q-Order		E G	Q	Q	Q
9479	DisplayInd	Boolean	C	Indicates if reserve eQuote should be displayed to the DMM. Y = Yes N = No		Y N			
9563	MinPegQty	Qty[9]	C	Must be specified in round lots. 1-999,999,999	Yes	Yes			
9565	DiscPriceRng	Price[16]	C	0.01 - 999,999.99	Yes	Yes			
20001	AttributedQuote	Char[1]	N	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 1	0 1	0 1	0 1	0 1
20002	ProactiveIfLocked	Char[1]	N	0 = No locked functionality 1 = Proactive if Locked for routable orders 2 = Non-display remove liquidity for non-displayed orders locked	0 1 2	0 1 2	0 1	0 1 2	0 1 2

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				by contraside ALOs					
20003	CancelInsteadOf Reprice	Char[1]	N	0 = Not applicable (follow default order behavior) 1 = Cancel order instead of repricing – for LULD only	0 1	0 1	0 1	0 1	0 1
	Standard FIX Trailer		Y	Standard FIX Trailer	Yes	Yes	Yes	Yes	Yes

5.4 Order Cancel Reject

This message is used to reject a Cancel or Cancel/Replace Request.

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
	Standard FIX Header		Y	MsgType = 9	Yes	Yes	Yes	Yes	Yes
11	ClOrdID	String[20]	Y	Returned from the Cancel or Cancel/Replaced Request – the ClOrdID of the message that is rejected (Cancel or Cancel/Replace request). Pillar will validate that the ClOrdID is unique for the combination of SenderCompID + OnBehalfOfCompID (MPID) that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given SenderCompID + MPID. Customer defined up to	Yes	Yes	Yes	Yes	Yes

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				20 characters.					
37	OrderID	String[20]	Y	OrderID of the order intended for cancellation or replacement. Unique identifier of most recent order as assigned by the Exchange. Published externally to market data feeds. Numerical up to 20 characters.	Yes	Yes	Yes	Yes	Yes
39	OrdStatus	Char[1]	Y	Status of the order: 0 = New 1 = Partially Filled 2 = Filled 3 = Done For Day 4 = Cancelled 5 = Replaced 6 = Pending Cancel 8 = Rejected C = Billable Cancel (Self Trade Prevention) E = Pending Replace M = Pending Modify	8	8	8	8	8
41	OrigClOrdID	String[20]	C	Returned from Order Cancel or Cancel/Replace Request. Represents the ClOrdID of the previously entered order intended for cancellation or replacement (NOT necessarily the initial order of the day). Customer defined up to 20 chars.	Yes	Yes	Yes	Yes	Yes
58	Text	String[40]	N	On Incoming Messages from Firm: Freeform text field, up to 40 characters. However, will not be passed back in Acknowledgments or any	Yes	Yes	Yes	Yes	Yes

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				subsequent response messages. On Outgoing Message from Exchange: Reason code and text description for order activity. For example, reason for cancel/cancel-replace rejection.					
60	TransactTime	UTC Timestamp [27]	N	On Incoming Messages from Firm: Customer application time. On Outgoing Message from Exchange: Exchange application time. UTC time, in Milliseconds YYYYMMDD-HH:MM:SS.mmm	Yes	Yes	Yes	Yes	Yes
434	CxlRejResponseTo	Char[1]	Y	1 = Order Cancel Request 2 = Order Cancel/Replace Request	1 2	1 2	1 2	1 2	1 2
20009	Nanosecond SendingTime	String[27]	Y	Time of message transmission on outgoing message from Exchange. UTC time, in Nanoseconds – YYYYMMDD-HH:MM:SS.sssssssss Note: this represents the same reference time as provided in the Standard FIX Header tag SendingTime (52), with more granular resolution.	Yes	Yes	Yes	Yes	Yes
20010	Nanosecond TransactTime	String[27]	Y	Exchange application time. UTC time, in	Yes	Yes	Yes	Yes	Yes

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				Nanoseconds – YYYYMMDD-HH:MM:SS.sssssssss Note: this represents the same reference time as provided in the standard FIX tag TransactTime (60), with more granular resolution.					
	Standard FIX Trailer		Y	Standard FIX Trailer	Yes	Yes	Yes	Yes	Yes

5.5 Execution Report

This message is used to confirm new orders, cancellations, replacements, fills, trade busts, price corrections, and order rejections.

It is also used as a Billable Cancel message when ExecType = C (Billable Cancel). 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 with ExecType = 4 (Canceled).

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

This message may also be sent unsolicited by the Exchange as an Order Priority Update Acknowledgement to notify the firm of a Reserve Order replenishment event. Firms control receipt of these Acks by session level subscription via the Logon Request message. 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.

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
	Standard FIX Header		Y	MsgType = 8	Yes	Yes	Yes	Yes	Yes
1	Account	String[16]	N	Customer defined up to 16 characters; only printable ASCII characters allowed.	Yes	Yes	Yes	Yes	Yes
11	ClOrdID	String[20]	Y	Unique ID of the new Order, Cancel, or Cancel/Replace request as assigned by the firm.	Yes	Yes	Yes	Yes	Yes

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				Pillar will validate that the ClOrdID is unique for the combination of SenderCompID + OnBehalfOfCompID (MPID) that entered the order, among open orders only. However, the firm is responsible for ensuring that the ClOrdID provided is unique among all orders sent for the full length of the trading day by the given SenderCompID + MPID. Customer defined up to 20 characters.					
14	CumQty	Qty[9]	C	0 - 999,999,999	Yes	Yes	Yes	Yes	Yes
17	ExecID	String[32]	Y	Unique identifier of the outgoing FIX message, assigned by the Exchange to all FIX MsgType 8. Up to 32 characters.	Yes	Yes	Yes	Yes	Yes
18	ExecInst	Char[1]	C	1 = Not Held (to NYSE Broker Systems only) 5 = Held (to NYSE Broker Systems only) d = Tracking Order f = ISO B = OK to Cross E = DNI F = DNR G = All or None R = Primary Peg P = Market Peg M = MPL (Midpoint Liquidity) N = Non-displayed (Retail Price Improvement and Limit-Non Displayed orders) y = Trade-at ISO Note: Values 1 and 5 are	1 5 d f R P M N y	d f B R P M N y	d f R P M N y	d f R P M N y	d f R P M N y

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				valid only for orders routed to NYSE Broker Systems.					
19	ExecRefID	String[32]	C	Contains the ExecID (Tag 17) value of the Fill that is busted or corrected. Up to 32 characters.	Yes	Yes	Yes	Yes	Yes
20	ExecTransType	Char[1]	Y	0 = New (ack, pending cancel, pending replace, partial fill, fill, order reject) 1 = Cancel (Trade Break Only) 2 = Correct (Trade Correction Only)	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
30	LastMkt	String[4]	C	On fills and partial fills, Market Identifier Code (MIC) of the sending Exchange (regardless of local or away market execution). ARCX = NYSE Arca Equities XNYS = NYSE Equities XASE = NYSE American Equities XCIS = NYSE National Equities	Yes	Yes	Yes	Yes	Yes
31	LastPx	Price[16]	C	Price of current partial fill or fill message (set to 0 on all non-fills). 0 - 999999.999999	Yes	Yes	Yes	Yes	Yes
32	LastQty	Qty[9]	C	Quantity of current partial fill or fill message (set to 0 on all non-fills). 0 - 999,999,999	Yes	Yes	Yes	Yes	Yes
37	OrderID	String[20]	C	Unique identifier of most recent order as assigned by the Exchange. Published externally to market data feeds. Numerical up to 20 characters.	Yes	Yes	Yes	Yes	Yes

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
38	OrderQty	Qty[9]	Y	1 - 999,999,999	Yes	Yes	Yes	Yes	Yes
39	OrdStatus	Char[1]	Y	Status of the order: 0 = New 1 = Partially Filled 2 = Filled 3 = Done For Day 4 = Cancelled 5 = Replaced 6 = Pending Cancel 8 = Rejected C = Billable Cancel (Self Trade Prevention) E = Pending Replace M = Pending Modify	0 1 2 3 4 5 6 8 C E M	0 1 2 3 4 5 6 8 C E M	0 1 2 3 4 5 6 8 C E M	0 1 2 3 4 5 6 8 C E M	0 1 2 3 4 5 6 8 C E M
40	OrdType	Char[1]	Y	1 = Market 2 = Limit 7 = Inside Limit 9 = AutoMatch Limit P = Pegged	1 2 7 P	1 2 7 P	1 2 7 P	1 2 7 P	1 2 7 P
41	OrigClOrdID	String[20]	C	Returned from Order Cancel or Cancel/Replace Request. Represents the ClOrdID of the previously entered order intended for cancellation or replacement (NOT necessarily the initial order of the day). Customer defined up to 20 chars.	Yes	Yes	Yes	Yes	Yes
44	Price	Price[16]	C	0.000001-999,999,999.999999	Yes	Yes	Yes	Yes	Yes
54	Side	Char[1]	Y	1 = Buy 2 = Sell 5 = Sell Short 6 = Sell Short Exempt 8 = Cross 9 = Cross Short A = Cross Short Exempt	1 2 5 6 8 9	1 2 5 6 8 9 A	1 2 5 6 8 9	1 2 5 6 8 9	1 2 5 6 8 9
55	Symbol	String[16]	Y	Valid Equities Ticker Symbol or Options Underlying symbol.	Yes	Yes	Yes	Yes	Yes

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
58	Text	String[40]	N	On Incoming Messages from Firm: Freeform text field, up to 25 characters. However, will not be passed back in Acknowledgments or any subsequent response messages. On Outgoing Messages from Exchange: Reason code and text description for order activity. For example, reason for cancel/cancel-replace rejection.	Yes	Yes	Yes	Yes	Yes
59	TimeinForce	Char[1]	Y	0 = Day 1 = GTC 2 = At the Opening 3 = IOC 4 = FOK 5 = GTX 6 = GTD 7 = On Close	0 2 3 7	0 2 3 7	0 2 3 7	0 2 3 7	0 2 3 7
60	TransactTime	UTC Timestamp [27]	N	On Incoming Messages from Firm: Customer application time. On Outgoing Message from Exchange: Exchange application time. UTC time, in Milliseconds YYYYMMDD-HH:MM:SS.mmm	Yes	Yes	Yes	Yes	Yes
65	SymbolSfx	String[10]	N	Valid Suffix value	Yes	Yes	Yes	Yes	Yes
110	MinQty	Qty[5]	N	Must be ≥ Round Lot and ≤ OrderQty	Yes	Yes	Yes	Yes	Yes
111	MaxFloor	Qty[5]	C	Must be entered in Round Lots.	Yes	Yes	Yes	Yes	Yes

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
114	LocateReqd	Boolean	N	N = No Y = Yes	N Y	N Y	N Y	N Y	N Y
150	ExecType	Char[1]	Y	0 = New 1 = Partially Filled 2 = Filled 3 = Done For Day 4 = Cancelled 5 = Replaced 6 = Pending Cancel 8 = Rejected C = Billable Cancel (Self Trade Prevention) E = Pending Cancel/Replace L = Eligible for Cross (Used for Broker Cross Orders) M = Pending Modify	0 1 2 3 4 5 6 8 C E M	0 1 2 3 4 5 6 8 C E L M	0 1 2 3 4 5 6 8 C E M	0 1 2 3 4 5 6 8 C E M	0 1 2 3 4 5 6 8 C E M
151	LeavesQty	Qty[9]	C	0 - 999,999,999	Yes	Yes	Yes	Yes	Yes
386	NoTradingSessions	Int[1]	Y	1	1	1	1	1	1
336	TradingSessionID	Char[1]	Y	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	1 2 4	1 2 4	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
528	OrderCapacity	Char[1]	Y	A = Agency P = Principal R = Riskless Principal Q = Error Account	A P R	A P R Q	A P R	A P R	A P R
7928	SelfTradeType	Char[1]	C	0 (number 0) = Use current Session Configuration STP setting for the SenderCompID T = No Self Trade Prevention N = Cancel Newest O (letter O)= Cancel Oldest C = Cancel Both D = Cancel Decrement	0 T N O C D	0 T N O C D	0 T N O C D	0 T N O C D	0 T N O C D

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
9303	RoutingInst	Char[1]	C	N = Non Routable R = Routable IOC D = Directed (Primary Only) S = Directed + Routable (PO+S) 1 = Primary Market until 9:45 2 = Primary Market after 3:55 3 = BOTH Primary Market until 9:45 AND Primary Market after 3:55 8 = Minimum Fill (must be entered with MinQty tag populated with a non-zero value)	N R D S 1 2 3	N R D S 1 2 3	N R D S 1 2 3 8	N R D S 1 2 3	N R D S 1 2 3
9403	OffsetPrice	Price[16]	C	Value must be zero, or otherwise greater than or equal to the minimum offset value ($0.01) and in multiples of $0.01.	Yes	Yes	Yes	Yes	Yes
9416	ExtendedExecInst	Char[1]	C	A = Add Liquidity Only (ALO) 0 = No trade against MPL 2 = No route to IOI 3 = No trade against MPL and no route to IOI 4 = RO Type 1 5 = RO Type 2 7 = Retail Provider 8 = Imbalance Offset L = Light C = Complex Order Auction 9 = Discretionary Peg D = Dark (Non-Displayed) Primary Peg	A 0 2 3 4 5 7 8	A 0 2 3 4 5 7 8	0 8 9 D	A 0 2 3	A 0 2 3 4 5 7 8
9448	IntroducingBadge ID	String[4]	C	1 – 4 numeric characters		Yes			
9478	QuoteType	Char[1]	C	E = E-Quote G = G-Quote S = S-Quote Q = Q-Order		E G	Q	Q	Q
9426	DisplayedLiquidity Indicator	String	C	Values TBD	Yes - values	Yes - values			

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
					TBD	TBD			
9449	BillTo	String[4]	C	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			
9451	ParentFirmClOrdID	String[20]	C	<= 20 chars		Yes			
9453	ParentFirmMPID	String[4]	C	Firm Identifier - MPID		Yes			
9479	DisplayInd	Boolean	C	Indicates if reserve eQuote should be displayed to the DMM. Y = Yes N = No		Y N			
9483	DealID	String[20]	C	Unique identifier of a transaction, assigned by the Exchange to both Execution reports representing the two sides of a single trade. Numerical up to 20 characters.	Yes	Yes	Yes	Yes	Yes
9563	MinPegQty	Qty[9]	C	Must be specified in round lots. 1-999,999,999	Yes	Yes			
9565	DiscPriceRng	Price[16]	C	0.01 - 999,999.99	Yes	Yes			
9730	LiquidityIndicator	String	C	On Order Acknowledgements: 1 = Candidate for setting a new displayed bid or offer on the local market Note: On Order Priority Update Acks, this tag will be populated with the value from the original Order Ack. On Partial Fills and Fills: See Appendix for Values.	Yes	Yes	Yes	Yes	Yes

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
20001	AttributedQuote	Char[1]	N	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 1	0 1	0 1	0 1	0 1
20002	ProactiveIfLocked	Char[1]	C	0 = No locked functionality 1 = Proactive if Locked for routable orders 2 = Non-display remove liquidity for non-displayed orders locked by contraside ALOs	0 1 2	0 1 2	0 1	0 1 2	0 1 2
20003	CancelInsteadOf Reprice	Char[1]	N	0 = Not applicable (follow default order behavior) 1 = Cancel order instead of repricing – for LULD only	0 1	0 1	0 1	0 1	0 1
20004	WorkingPrice	Price[16]	C	0.000001-999999.999999	Yes	Yes	Yes	Yes	Yes
20005	FlowIndicator	Char[1]	Y	Indicates whether a corresponding inbound message was throttled. For outgoing messages without a corresponding inbound message, the tag will default to 0. 0 = Inbound message was not throttled 1 = Inbound message was throttled	0 1	0 1	0 1	0 1	0 1
20006	WorkingAwayFrom Display	Char[1]	C	On Order Acknowledgements, indicates whether the working price of the order is equal to or different than the display price. 0 = Working Price is equal to Display Price	0	0	0	0	0

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				1 = Working Price is different from Display Price	1	1	1	1	1
20007	UnsolicitedAck Type	Char[1]	C	On Order Priority Update Acknowledgements, indicates the type of event that produced the unsolicited Ack. 2 = Order Priority Update – New OrderID (reserve order replenishment) 3 = Order Priority Update – Same OrderID (working price update)	2	2	2	2	2
20008	ParticipantType	Char[1]	C	Sent on fills. 1 = Customer 2 = Market Maker/LMM 3 = DMM 4 = SLP 5 = NYSE Floor Broker	1 3 4 5	1 3 4 5	1 2	1 2	1 2
20009	Nanosecond SendingTime	String[27]	Y	Time of message transmission on outgoing message from Exchange. UTC time, in Nanoseconds – YYYYMMDD-HH:MM:SS.sssssssss Note: this represents the same reference time as provided in the Standard FIX Header tag SendingTime (52), with more granular resolution.	Yes	Yes	Yes	Yes	Yes
20010	Nanosecond TransactTime	String[27]	Y	Exchange application time. UTC time, in Nanoseconds – YYYYMMDD-HH:MM:SS.sssssssss	Yes	Yes	Yes	Yes	Yes

Tag	Field Name	Data Type	Req'd	Values	NYSE	NYSE Floor	American EQ	National EQ	Arca EQ
				Note: this represents the same reference time as provided in the standard FIX tag TransactTime (60), with more granular resolution.					
	Standard FIX Trailer		Y	Standard FIX Trailer	Yes	Yes	Yes	Yes	Yes

6. Appendix A: Liquidity Indicator Values and Definitions

Pillar will populate the "LiquidityIndicator" tag (9730) 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
Executions on Orders Traded Locally – Adding Liquidity (Non-Auction)					
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 (Arca Only Order) – Working at different price than display price at time of execution	AB	•	•	•	•
Add Tracking Order	AT	•	•	•	•
Add Limit Order Setting New BBO	ASB	•	•	•	•
Add Retail Provider (Tag 57 = RET)	ARE	•	•		
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			•	
Executions on Orders Traded Locally – Removing Liquidity (Non-Auction)					
Remove Regular Limit or Market	R	•	•	•	•
Remove Regular Limit IOC	RI	•	•	•	•
Remove Sub Dollar	RZ	•	•	•	•
Remove Sub Dollar IOC	RIZ	•	•	•	•
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 (Tag 57 = RET)	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			•	

Definition	Liquidity Indicator	Arca EQ	NYSE	American EQ	National EQ
Remove Discretionary Peg Order – on arrival/re-sweeping at same side PBBO or below same side PBBO	RDZ			•	
Executions in Opening/Re-Opening Auctions					
Market Day, MOO, LOO Executions	O	•	•	•	
Limit orders	OL	•	•	•	
Sub-Dollar Execution	OZ	•	•	•	
Imbalance Offset	OIO	•	•	•	
Sub-Dollar Imbalance Offset	OIOZ	•	•	•	
Executions in Closing Auctions					
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		•		
Executions on Routed Orders					
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	•		•	•
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	•	•	•	•
Primary Only to NYSE					
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	•		•	•
Primary Only Sub Dollar	XNZ	•		•	•

Definition	Liquidity Indicator	Arca EQ	NYSE	American EQ	National EQ
Primary Only to NYSE American					
Primary Only Executed in Opening/Reopening	XAO	•	•		•
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	•	•		•
Primary Only Sub Dollar	XAZ	•	•		•
Primary Only to NYSE Arca Equities					
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		•	•	•
Primary Only to Away Market, Non- NYSE Group					
Primary Only Adding/Removing Liquidity	XDA	•	•	•	•
945/355 Executed on Primary	XDT	•	•	•	•
Primary Only Sub Dollar	XDZ	•	•	•	•
Cross Order Execution					
Limit IOC Cross (Cross Execution only)	Z	•	•	•	•
NYSE Floor Broker Cross	Z		•		

7. Appendix B: Pillar Reason Codes

Reason Codes Returned as Text on Outgoing Messages

Pillar will return a set of event reason codes and descriptions as text (Tag 58) on Execution Reports and Cancel Reject messages. These codes are provided by Pillar and qualify the event that produced the message.

Format: Text (Tag 58) = 'Rxxx: Description'

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 IntroducingBadgeID	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 Quote Type	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 DiscPriceRng	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	153	IOC Received while Auction Running
121	Pending Cancel - Routed Interest	154	Pending - Symbol Transition
122	Pending Replace - Routed Interest	155	Pending Cancel - Symbol Transition
123	Pending Modify - Routed Interest	156	Pending Modify - Symbol Transition
124	Pending - Auction Running	157	Pending Replace - Symbol Transition
125	Duplicative Order Check	158	Invalid For Tick Pilot
126	Cancelled by Exchange	159	Invalid MMID
127	New Order	160	Invalid MPID
128	Fill	161	Invalid CancelInsteadOfReprice
129	Partial Fill	162	Invalid RetailIndicator
130	Reduced	163	SenderCompID Not Active
131	Replaced	164	MPID Blocked
132	No Market for Cross	165	Invalid Timestamp
133	STP Cancel*	166	Invalid Permission for SenderCompID
134	Invalid PossDupe	167	Invalid UserData
135	TPID Blocked	168	Pillar Risk Mitigation
136	Invalid Bulk Cancel	900	Invalid ProactiveDiscretionInd
137	Pending Bulk Cancel	901	Invalid ExtendedPNP
138	Symbol Not Open	902	Invalid ExecBroker
139	Symbol Suspended	903	FastCancelRep Unsupported
140	Symbol IPO Halt	904	Pending Cancel
141	Invld Inst During Imbalance Freeze	905	Pending Replace
142	Invld Inst After Cutoff Time	906	System full (CGA_RATE_EXCEEDED)
143	Cancelled by Primary Market	999	Unknown Issue Encountered
144	Pending - Imbalance Freeze		
145	No RLP Permission		
146	Invalid Instruction for IOC's		
147	System full (CG_RATE_EXCEEDED)		
148	Pending Cancel - Auction Running		
149	Pending Modify - Auction Running		
150	Pending Replace - Auction Running		
151	Invld Inst for Pending Order		
152	SSH Price below NBB on ISO		

*Format for STP Cancel is Text (Tag 58) = 'R133:STP...' where … = the ClOrdID of the contra-side order that caused the cancellation.

8. Appendix C: Order Types

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

https://www.nyse.com/publicdocs/NYSE_Pillar_FIX_Gateway_Order_Type_Matrix.pdf

The document provides the following information:

- **Order Type Key** – the unique tags 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 tag, 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 tag values that uniquely identify an order type
  - The bottom portion of the document corresponds to secondary tag 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 tag combination.

Legend:

- **Tag 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
- **Tag that is required but has a customer-specific or customer defined value** – is represented with a cell 'Req'
- **Tag that is optional and can either have specific values or not be sent** – is represented with a cell 'a,b,c,null'. All other values will result in a reject with Pillar Reason Code Rxxx
- **Tag 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,*'
- **Tag that must not be sent** – 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

9. Appendix D: NYSE Displayed Liquidity Indicators

<<NYSE equities only – Placeholder for table of values>>

10. Document Version History

Date	Spec Version #	Change Summary
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 ExtendedExecInst (9416) value 8 = Imbalance Offset. New liquidity indicators for NYSE Arca Equities and NYSE American in support of Imbalance Offset order.
September 14, 2017	1.9	Updated protocol support for NYSE American Equities – new RoutingInst (9303) 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	Added New Liquidity Indicators for NYSE American Equities – in support of Discretionary Peg Order and Dark Primary Peg Order. 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).
May 16, 2017	1.6	Updated protocol support for NYSE American Equities – removed MinPegQty (9563) and DiscPriceRng (9565)
April 12, 2017	1.5	Updated protocol support for NYSE American Equities (formerly known as NYSE MKT Equities): - TargetSubID (57) – removed support for RET (Retail Order) - TradingSessionID (336) – added support all trading sessions - OrderCapacity (528) – removed support for Error Account - ExtendedExecInst (9416) – 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 - QuoteType (9478) – added support for Q-Order - ProactiveIfLocked (20002) – removed support for Proactive Trade Non Display 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

<table>
<tr><td></td><td></td><td>Dollar MPL Order; Remove Non-Displayed Sub Dollar Limit Order.

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.</td></tr>
<tr><td>February 23, 2017</td><td>1.4</td><td>Added the tag OrigSendingTime (122) to the FIX Header.

Updated max length of the following tags to 20 characters (previously 32):
- ClOrdID (11)
- OrigClOrdID (41)
- ParentFirmClOrdID (9451)

Added descriptive detail to the following sections:
- Failure Recovery – added sub-section Pillar Risk Mitigation; added detail regarding next expected client sequence number on a secondary Pillar destination IP address, and after an intraday session restart
- Pillar FIX Session Layer handling – regarding Pillar FIX Gateway handling of Resend Requests from the firm with MsgSeqNum greater than expected
- Message Retransmission – regarding Pillar FIX Gateway responses to Resend Requests from the firm
- Appendix: Pillar Reason Codes – regarding the text format of Reason Code 133 (STP Cancel)

Clarification on values provided in the tag LastMarket (30).

Added detail on validation of the tag Account (1).

Added Pillar Reason Code 168 (Pillar Risk Mitigation) to Appendix.

Added hyperlink and guidelines for interpretation of NYSE Arca Equities order type validation matrix to Appendix.
Clarification that the tags MinPegQty (9563) and DiscPriceRng (9565) are not currently available for NYSE Arca Equities.</td></tr>
<tr><td>January 5, 2017</td><td>1.3</td><td>Removed the following tags:
- Account (1), from Order Cancel Request
- ClearingAccount (440), from Execution Report
- Clarified valid values in Logon Request and Logon Response (MsgType A), tag RawData (96) for position 3 (Self Trade Prevention).</td></tr>
<tr><td>December 8, 2016</td><td>1.2</td><td>Added section, “Pillar FIX Session Layer Handling.”

Updated the following message types:
- Order Cancel Request (MsgType F) – removed tag OrderQty (38). Updated valid values and description for tag Side (54) as used on a Bulk Cancel Request. Added details regarding OnBehalfOfCompID (115)
- Order Cancel/Replace Request (MsgType G) – Added details regarding OnBehalfOfCompID (115) and SenderSubID (50)
- Order Cancel Reject (MsgType 9) – added tags NanosecondSendingTime (20009) and NanosecondTransactTime (20010)

Updated the following tags:
- ClOrdID (11) – updated details about uniqueness validation</td></tr>
</table>

		- CumQty (14), LastPx (31), LastQty (32), LeavesQty (151) – updated minimum value to 0 - LastMkt (30) – updated to be conditional - SendingTime (52) and TransactTime (60) – updated format to be compliant with standard FIX 4.2 Protocol - TargetCompID (56) – added list of values - DeliverToCompID (128) – updated max length - ExecType (150) – added value M (Pending Modify) - AttributedQuote (20001) – removed values 2 and 3 from list of currently accepted values (descriptions remain; reserved for future use) - FlowIndicator (20005) – updated to be required; updated description Added Pillar Reason Code 166 (Invalid Permission for SenderCompID) to Appendix.
October 28, 2016	1.1	Added the following new tags to existing message types: - Text (58) – to Logout - DeliverToSubID (129) – to FIX Header - FlowIndicator (20005) – to Execution Report - UnsolicitedAckType (20007) – to Execution Report - NanosecondSendingTime (20009) – to Execution Report - NanosecondTransactTime (20010) – to Execution Report Modifications to existing tags: - ClOrdID (11) and OrigClOrdID (41) – updated max length - ExecID (17) and ExecRefID (19) – updated max length - HeartBtInt (108) – updated max length - ParentFirmClOrdID (9451) – updated max length - AttributedQuote (20001) – assigned tag number (previously TBD) - ProactiveIfLocked (20002) – assigned tag number (previously TBD) - CancelInsteadOfReprice (20003) – replaced RepriceOrCancel; assigned tag number (previously TBD); values updated - Updated “Req’d” status (Y, N, C) – various tags - WorkingPrice (20004) – assigned tag number (previously TBD); updated max length - WorkingAwayFromDisplay (20006) – assigned tag number (previously TBD) - ParticipantType (20008) – assigned tag number (previously TBD) Updated values for existing tags: - MsgType (35) - OrderID (37) – bulk cancel codes - SendingTime (52) - TransactTime (60) – updated timestamp format (standard FIX) - RawData (96) - OnBehalfOfCompID (115) - GapFillFlag (123) - DeliverToCompID (128) - ExecType (150) - SelfTradeType (7928) - LiquidityIndicator (9730)

		- Pillar Reason Codes – added 154 through 165; see Appendix Added/updated descriptive detail to the following sections: - Failure Recovery - Self Trade Prevention - FIX Drop Copies - Order Cancel Request - Heartbeat and Test Request - Message Retransmission - Sequence Reset - Session-Level Rejects
August 12, 2016	1.0	Initial version of the specification.