NYSE Arca
UGW FIX Gateway Specification

NYSE Arca Equities

Preface

Document Control

Date	Revision	Synopsis of Change
September 21, 2011	1.0	Initial Document
December 5, 2011	1.1	Added new Logon Profile Information and Mapping
March 7, 2012	1.2	Added Default Settings to Logon Profile Section (Section 5.2)
April 25, 2012	1.3	Added Microsecond Timestamps Option to Logon Profile-Available. Added MOO/LOO Order Types, additional info for Passive Liquidity Order Type, and MPL IOC Information
May 5, 2012	1.4	Added conditional Liquidity Indicator on Execution Report Message, (Liquidity Indicator (9730) = 1 (Candidate for Liquidity Indicator "S") (Sent on Order Ack, Cancel pending, Cancelled, C/R Pending, and Replaced) starting 5/28/2012. Added Liquidity Indicator "S" = Set Inside Price and Added Liquidity on ARCA
August 13, 2012	1.5	General updates. Added Tag 45 to Execution Report
September 10, 2012	1.6	Added PL Select Order Type
January 3, 2013	1.7	Changed Title of Specification to "NYSE Arca Binary FIX Gateway Specification from "GCCG FIX Specification" General Updates to New Order, Cancel, Cancel Replace Messages – Added f 6 (f *space* 6) = ISO to Tag 18, GTD and GTX to Tag 59 Updated Logon Profile Table – Default Proactive If Locked Field with new values for LU/LD Updated Order Type Information (Page 40) – Added Market To Limit (MTL) to Order Types Section, Added Proactive If Locked Tag to MPL/MPL ALO Orders LU/LD Changes added (Pro Active if locked Tag 9733, new values added – Currently Unavailable) Added PNP Blind Indicator Values in Liquidity Indicator (9730) Added accepted Tag 47 Values and Descriptions table to Section 3.15 (Pages 16 and 17)
April 10, 2013	1.8	Updated Execution Report Tag 6 and 31 to go out to 6 decimal places
May 20, 2013	1.9	Added NYSE Arca Equities Retail Order Information
June 21, 2013	2.0	Added support for GTC and Multiday GTD orders. Added GTC and GTD Order Types to NYSE Arca Equities Order Types Section (Page 47)
July 22, 2013	2.1	Added NYSE Arca Equities Retail Order Types (Page 48) Updated Liquidity Indicators (Page 49)
October 1, 2013	2.2	Added MinQty (110) to Tracking Order Type (Page 45). Added more information to Tracking Order description (Page 12)
December 19, 2014	2.3	Miscellaneous Changes: Removed details for the following order types:

		- Auction Only Order
		- Market to Limit Order/Market IOC/Market NOW
		- Midpoint Cross
		- ISO PNP Cross/ISO PNP IOC Cross
		- Cross and Post
		- Discretionary Limit Orders
		- Passive Discretionary with Reserve
		- Sweep Reserve/Sweep Reserve with Discretion
		- Inside Limit Sweep Reserve
		- Random Reserve
		- Reserve NOW
		- PL Select
		- MPL FOK
April 14, 2015	2.4	Changed product branding to "NYSE Arca UGW FIX Gateway" from "NYSE Arca GCCG Gateway" in support of customer migrations away from GCCG and onto the Universal Gateway (UGW). Note that the FIX protocol remains unchanged in this migration.

June 8, 2015	2.5	Added Section 3.18, "Pillar Trading Platform for NYSE Arca Equities"
		
		Added notes on FIX tag and value changes to be expected for symbols migrated to Pillar throughout the spec
		
		Added Appendix C, "Pillar Reason Codes"
		
		Removed details for the following equities order types:
		- Primary Sweep (PSO)
		- Primary Sweep + Ship (PSOS)
		- Reserve Orders with IOC Modifiers
		    o Limit Reserve IOC
		    o ISO PNP Reserve IOC
		    o PNP Reserve IOC
		- Inside Limit IOC
		- ALO PNPB Reserve

November 9, 2015	2.6	Added note that any Price on incoming Orders, Cancel Requests, and Cancel/Replace Requests with significant digits in the 5th decimal or beyond will cause the message to be rejected by the gateway.
February 22, 2016	2.7	Clarification on meaning of Proactive if Locked values and applicability as "non-display remove liquidity" instruction for MPL orders Added tag 103 OrdRejReason to MsgType 8 (Execution Report) for order rejects Updated Pillar reason codes (Appendix C)
July 15, 2016	2.8	Added ExecInst (18) = y to designate Trade-at ISO order Updated Appendix B: Order Capacity Values
August 25, 2016	2.9	Added codes R154 – R158 in Appendix C: Pillar Reason Codes.
February 23, 2017	3.0	Added new sub-section, "NYSE Pillar Risk Mitigation" (Section 6; Auto Cancel on Disconnect). Added code R168 – Pillar Risk Mitigation (Appendix C: Pillar Reason

		Codes).
		Removed support for Side (54) = S (Sell Short and Cancel).

Contents

1 <u>Overview</u>

1.1   About this Document

This document describes the implementation of the FIX 4.2 Protocol used by the NYSE Arca Equities Exchange via the NYSE Arca UGW FIX Gateway.

This document assumes the reader thoroughly understands the FIX 4.2 protocol available at http://www.fixprotocol.org/. This document is not intended as a guide to constructing a FIX client. Rather, it is a checklist to ensure that a firm's FIX client, constructed according to the FIX 4.2 specification, will be compatible with the NYSE Arca UGW FIX Gateway on the ambiguous details of the FIX specification.

1.2   NYSE Arca Certification

NYSE Arca offers a FIX gateway testing environment that can be used for certification and by clients to test changes made to their FIX engines. This environment supports most Arca specialized order types and is available daily from 4:00 AM EST to 8:00 PM EST. Please send an email to firmtesting@nyse.com to obtain the appropriate connectivity information.

<u>Other Contacts</u>

The NYSE 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. Below are the options to quickly get you to the most appropriate team.

+1 212-896-2830

Option 1 - Trading Support

- Sub-Option 1 - NYSE/NYSE MKT Equities
- Sub-Option 2 - NYSE ARCA Equities / NYSE Bonds
- Sub-Option 3 - NYSE Options

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

2 System Architecture

Each client sends orders to their assigned session and port on the NYSE Arca UGW FIX Gateway. The NYSE Arca UGW FIX Gateway then routes the order to the appropriate destination.

Client Application
(Firm A)

Client Application
(Firm B)

Client Application
(Firm C)

**NYSE ARCA
FIX Gateways**

NYSE ARCA Equities
(including Listed and ETFs)
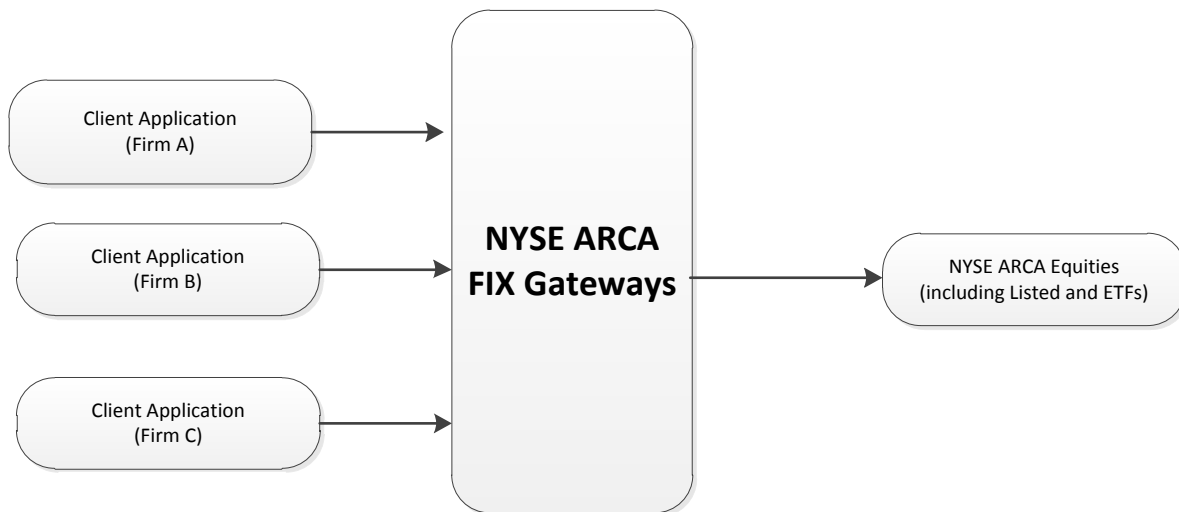
3 Pillar Trading Platform for NYSE Arca Equities

NYSE Arca Equities will be the first market to migrate to Pillar, our new integrated trading technology platform. During Phase I, customers will continue to connect to the existing NYSE Arca gateways and use existing messaging protocols.

However, there are changes to certain order types and messaging that will go into effect on a symbol-by-symbol basis, some indefinitely and some just for Phase I, as the Pillar matching engines are deployed. With regard to gateway messaging, the associated changes to FIX tags and values are indicated with notes throughout the equities sections of this gateway specification where applicable.

Please note that Pillar will enforce stricter validation of FIX tags rather than ignore them. Therefore, orders for symbols migrated to Pillar may not contain any FIX tags which are not outlined in this gateway specification. Such orders carrying unsupported FIX tags will be rejected.

For information on the functional changes to various order types that will take effect for symbols migrated to Pillar, please visit: https://www.nyse.com/pillar

4   NYSE Arca Equities Information

4.1   Decimalization

For all securities trading below $1.00, Users will be able to submit orders in price increments of up to four decimal places. Previously, orders submitted in sub-pennies were truncated or rounded. NYSE Arca will also route to away market centers in price increments of up to four decimal places.

Opening/Closing Auctions:
- Opening and Closing Auctions may occur in sub-penny increments.
- Any imbalance after the Opening Auction will be released into the market for core trading.

Pegs:
- Pegs eligible for execution in sub-penny prices will not be rejected.
- If the NBBO is quoted in a sub-penny price, and if the final price of the peg (including the offset) calculates to greater than or equal to $1.00, NYSE Arca will round or truncate to a penny based on the side of the market.
- If the NBBO is quoted in a sub-penny price, and if the final price of the leg (including the offset) calculates to under $1.00, NYSE Arca will maintain the sub-penny price on the peg.

The following order types may not utilize sub-penny prices:
- Discretion of less than $0.01.
- Offsets of any type of less than $0.01.

Clients are required to accept sub-penny values in execution reports sent by NYSE Arca. It is possible that a client can receive a price out to the 4th decimal place, or .1234. This may occur when an order is routed out to another exchange for price improvement.

4.2   Hours of Operation

Hours of Operation for NYSE Arca Equities Exchange

- Opening limit Auction – We start accepting orders for the auction at 3:30 AM
- Session 1 (Opening Session) – 4:00 AM – 9:30 AM
- Session 2 (Core Session) – 9:30 AM – 4:00 PM
- Session 3 (Late Session) – 4:00 PM – 8:00 PM

4.3   Trading Session ID

Firms have several options in identifying the TimeInForce parameters, it is highly recommended that firms using a combination of TradingSessionID values to specify the sessions for which participation is desired.

Orders may be entered at any time after 3:30 AM.

Session 1 (TradingSessionID value "P1") orders participate in:

- Opening Auction
- Session 1 (Opening Session)
- Limit Order Auction
- Expire at 9:30 AM

Session 2 (TradingSessionID value "P2") orders participate in:

- Market Order Auction

- Session 2 (Core Session)
- Expire at 4:00 PM

Session 3 (TradingSessionID value "P3") orders participate in:

- Session 3 (Late Session) Listed Equities
- Expire at 8:00 PM

FIX Format of Trading Sessions:

386=1 | 336=P1 (Early Session)
386=1 | 336=P2 (Core Session)
386=1 | 336=P3 (Late Session)
386=2 | 336=P1 | 336=P2 (Early and Core Sessions)
386=2 | 336=P2 | 336=P3 (Core and Late Sessions)
386=3 | 336=P1 | 336=P2 | 336=P3 (All three trading sessions)

TradingSessionID may be combined with a DAY order to provide accurate control of order execution. Combinations of TradingSessionID values may be used. For example, a DAY order might be specified with TradingSessionID values of "P1" "P2" and "P3".

DAY orders with no TradingSessionID qualifiers or other factors such as EffectiveTime default to being valid for Sessions 1 and 2 if placed between 3:30 AM and 4:00 PM, or will be rejected in the afterhours session.

4.4   Extended Hours

NYSE Arca introduced the concept of a "Day+" order, which spans all trading sessions. Day+ orders must be represented in one of two ways:

●   Specify a TimeInForce of DAY (59=0) with NoTradingSessions(386)=3 and repeating TradingSessionID(336) values of "P1" "P2" and "P3" (386=3, 336=P1, 336=P2, 336-P3) .

●   Specify a TimeInForce of GTD (59=6) and set an ExpireTime (Tag 126). When an order is set to be expired at the end of a trading session, the TradingSessionID fields should **always** be used. Note that ExpireTime is formatted in UTC (formerly GMT), and cannot be the same day as the order. As a result, 8:00 PM Eastern Time will be represented as midnight of the following calendar day (20080801-00:00:00). This link will help you determine which time zone you should send: <http://www.dxing.com/utcgmt.htm>.

NYSE Arca Exchange supports EffectiveTime, which enables customers to stage orders for execution at a later time. This feature is particularly useful for submitting orders between 7:30 and 9:30 AM, which will be eligible for execution at the 9:30 AM open. Alternately, firms may wish to submit DAY orders between 3:30 and 9:30 AM with a NoTradingSessions (386) =1 and a TradingSessionID (336) value of "P2".

4.5   Multi Day orders (GTCs and GTDs) – Not Available for Pillar Phase I

GTC and Multi-Day GTD Orders are now supported through the NYSE Arca UGW FIX Gateway. Please refer to order types section on how to send these order types.

To send multi day orders clients must send the following on their order messages:

- Good Till Cancel: TimeInForce (Tag 59) = 1 (GTC).
- Good Till Date: TimeInForce (Tag 59) = 6 (GTD).
- The ClOrdID (Tag 11) must begin with the date. **No exceptions**. The format of the ClOrdID must start with YYYYMMDD. Example: 11=20080623-XXXXXXX or 11=20080623XXXXXXX.

4.6　　Equities Symbology

Orders for instruments with suffixes (different classes of stock, preferred stock, etc.) can be sent in one of two ways:

- Symbol and Suffix notation (i.e. 55=VIA 65=B, 55=AA 65=PR and 55=IBM 65=PRA)

- Comstock notation (i.e. "VIA.B" "AA-" and "IBM-A")

The FIX field for symbol suffixes is SymbolSfx (65). On all execution reports, symbols will be reported in Symbol and Suffix notation.

Symbology Reference for NYSE Arca Equities

Security Categorization	Comstock	Symbol/Sfx (Tag 65)
Preferred	-	PR
Preferred Class "A"	-A	PRA
Class "A"	.A	A
Warrants	+	WS
Warrants Class "A"	+A	WSA
Called	*	CL
Preferred Called	-*	PRCL
Preferred Series A Called	-A*	PRACL
Units	.U	U
When issued	#	WI
Preferred when issued	-#	PRWI
Class "A" When issued	.A#	AWI
Preferred "A" when issued	-A#	PRAWI
Test symbol	.TEST	TEST

4.7　　Discretionary Orders – Not Available for Pillar Phase I

Discretionary orders have both a displayed price and a discretionary price. For example, a limit order to buy with a displayed price of 50 and a discretionary price of 50 ¼ is represented as:

Price = 50
DiscretionInst (388) = 0
DiscretionOffset (389) = 0.25

Note that DiscretionOffset is signed, and is always added to the displayed price to produce the discretionary price. As a result, when selling, the DiscretionOffset is negative. For example, a limit order to sell with a displayed price of 50 and a discretionary price of 49 ¾ is represented as:

Price = 50
DiscretionInst (388) = 0
DiscretionOffset (389) = -0.25

4.8　　Pegged Orders

A variety of Pegged orders are currently offered on the Equities exchanges, specifying OrdType = Pegged (P) with an ExecInst (18) of P will indicate a Market Peg where an order to buy is pegged to the offer and an order to sell is pegged to the bid. An ExecInst (18) of R will indicate a Primary Peg where an order to buy is pegged to the bid and an order to sell is pegged to the offer. On a Market Peg, the price of the order must be pegged to an offset from the bid or the offer (this is optional for the Primary Peg). This is accomplished through the PegDifference (211) field. On a Primary Peg, when pegging to the offer (selling) you must specify a positive value in PegDifference (211) and when pegging to the bid

(buying) you must specify a negative value in PegDifference (211). On a Market Peg, when pegging to the offer (buying) you must specify a negative value in PegDifference (211) and when pegging to the bid (selling) you must specify a positive value in PegDifference (211). A limit price may be set on a pegged order to prevent the order from following the NBBO past a certain price. This is done using the Price (44) field. Pegged orders can also be combined with DiscretionInst (388) and DiscretionOffset (389) to specify a hidden price range as well as MaxFloor (111) to indicate hidden volume.

	OrdType(40)	ExecInst(18)	Buy	Sell	PegDifference(211)
Primary	P	R	Peg to Bid	Peg to Offer	Optional: - buy / + sell**
Market	P	P	Peg to Offer	Peg to Bid	Required: - buy / + sell

**Note: For symbols migrated to Pillar, PegDifference will not be available on Primary Peg orders, and if sent will be rejected.

4.9 Crossing Orders

A Crossing order is represented as a single FIX order with Side = Cross (8) or Cross Short (9). For example, a broker wants to cross 1000 shares of stock at a price of 50. This is sent as a Limit order with Side = Cross. On the Listed Exchanges, Cross orders can also be combined with TimeInForce (59) =3 for IOC or ExecInst (18) =6 for Post no preference. Cross orders can behave in a number of ways. Please note that any Cross with a TimeInForce (59) =3 will never interact with the book and a Cross with ExecInst (18) =6.

- The Exchange allows the broker to cross the shares. In this case, the Execution Report would show a trade with Side = Cross, LastShares = 1000, and LastPx = 50. No shares are traded with the Exchange; the broker is allowed to cross those 1000 shares internally at the price of 50.
- The Exchange trades one side of the cross, for the entirety of the volume. For instance, the broker may receive two Execution Reports, one with Side = Buy, LastShares = 400, LastPx = 49.875, and one with Side = Buy, LastShares = 600, LastPx = 50. In this case, the broker bought all 1000 shares from the Exchange. The order is considered filled, even though the broker may need to make a sale for 1000 shares in the account of the party wishing to be on the selling side of the cross. The remainder of the Cross can be posted to the book by specifying ExecInst (18) =6 and TimeInForce (59) =5.
- The Exchange trades part of one side of the cross, and allows the broker to cross the remainder of the shares. For instance, the broker may receive two Execution Reports, one with Side = Buy, LastShares = 400, LastPx = 49.875, and one with Side = Cross, LastShares = 600, LastPx = 50. In this case, the broker bought 400 shares from the Exchange, and is allowed to cross 600 shares internally at a price of 50. The order is considered filled, even though the broker may need to make a sale for 400 shares in the account of the party wishing to be on the selling side of the cross. The remainder of the Cross can be posted to the book by specifying ExecInst (18) =6 and TimeInForce (59) =5.

Due to the dual-sided nature of the above Cross orders, an extension is being made to Rule80A to indicate differences in capacity between the buying and selling side of the Cross order.

Buy Side	Sell Side	Rule80A Indicator
Agency	Agency	**A** or **F**
Principal	Principal	**P** or **E**
Agency	Principal	**J** or **X**
Principal	Agency	**K** or **H**

4.10   Auction Orders (NYSE Arca Primary + All ETF Listings Only)

NYSE Arca offers both early and late auctions for **NYSE Arca Primary Listings and All ETF Listings only**. The schedule for these auctions is listed below.

- **Early Limit Order Auction – 4:00 AM EST**
- **Opening Market & Limit Order Auction – 9:30 AM EST**
- **Closing Market & Limit Order Auction – 4:00 PM EST**

Please note that there will be a freeze one minute before each auction. Orders cannot be cancelled during this time, and new orders that increase the imbalance will be rejected.

Market on Open (MOO)/Limit On Open (LOO) Orders

MOO/LOO orders participate in the opening auction only. Any quantity not executed in the opening auction will be immediately cancelled back to the customer.

Market On Open (MOO) Order	OrdType (40) = 1 (Market) TimeInforce (59) = 2	A market order that is to be executed only during the opening auction for the issue. If all or part of the order is not executed during the opening auction, the balance is cancelled. If this order type is sent in after the opening auction it will reject.	NYSE Arca Primaries and all Non-Primary ETFs
Limit On Open (LOO) Order	OrdType (40) =2 (Limit) TimeInForce (59) = 2	A limit order that is to be executed only during the opening auction for the issue. If all or part of the order is not executed during the opening auction, the balance is cancelled. If this order type is sent in after the opening auction it will reject.	NYSE Arca Primaries and all Non-Primary ETFs

Closing Auction

To place an order in the late auctions (valid only for NYSE Arca primary symbols and all non-primary ETFs) specify OrdType (40) =5 (Market on close) or OrdType (40) =B (Limit on close). Using these tags will indicate that an order is to participate ONLY in the appropriate auction and expire if not filled. Any straight limit order placed before the limit order auctions will participate and stay live if not executed. Any straight market order placed before the early market order auction will participate and stay live if not executed. Market orders are not valid after the late market order auction.

4.11   NYSE Arca Retail Orders

To qualify for the Retail Order Tier, an ETP Holder is currently required to designate certain of its order entry ports at the Exchange as "Retail Order Ports" and attest, in a form and/or manner prescribed by the Exchange, that all orders submitted to the Exchange via such Retail Order Ports are Retail Orders. An ETP Holder must designate its Retail Order Ports no later than the fifth trading day of the month in which the desired change is to become effective.

The Exchange proposes to provide an additional method for ETP Holders to designate orders as Retail Orders. Specifically, the Exchange proposes to allow ETP Holders to designate orders as "Retail Orders" on an order by order basis by using a tag in the order entry message. An ETP Holder may designate Retail Orders by **entering the value "RET" in FIX Tag 50: SenderSubID**. To be eligible for Retail Pricing Tier an ETP Holder must attest, in a form and/or manner prescribed by the Exchange, that all orders identified within the order entry message are Retail Orders.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = D*
50	SenderSubID	This field, if present, will be copied into the TargetSubID field of all messages referring to	N	"RET" – Identifies order for Retail Order Pricing Tier

Tag	Field	Description	Req.	Values
		the order. Your firm must not embed dates, time stamps, or order IDs in this field, as doing so will make aggregation of orders for troubleshooting purposes impossible.		

To qualify as a "Retail Order," an order:

- Must be an agency order that originates from a natural person,
- Must be submitted by an ETP Holder with no change to the terms of the order with respect to price or side of market, and
- Cannot originate from a trading algorithm or any other computerized methodology.

As noted above, an ETP Holder that wishes to qualify for the Retail Order Tier must attest that all orders submitted to the Exchange through Retail Order Ports or identified within the order entry message, as applicable, are qualified Retail Orders. The Exchange also requires that ETP Holders have certain written policies and procedures in place that are reasonably designed to assure that the Retail Order requirements are met. Retail Orders will be counted towards a firm's total volume to qualify for pricing tiers. However, only orders sent via the Retail Order Port or designated within the order entry message can qualify for the Retail Order Tier rebate. Orders that qualify for the Retail Order Tier cannot qualify for the Tape B or C Step-up Tier or Tape C Step-up Tier 2 in the same month

4.12   Tracking Orders

The Tracking Limit order executes against orders that are about to route away from ARCA when the leaves quantity is less than or equal to the size of the tracking limit order. If the leaves size of the contra order is greater than the size of the Tracking Limit order then the Tracking limit order will not be executed.

For example, if a tracking order was entered for 1,000 shares and the leaves quantity of a contra order was 1,001, then the order would be routed and not interact with the tracking order.

Tracking Limit orders will execute only if the price of the Tracking Limit order is equal to or better than the price of the away markets that we are about to route to and will execute at the price of the NBBO. Tracking Limit orders are blind so a quote will not be posted.

The Exchange proposes to amend Rule 7.31(f) to add optional functionality so that the ETP Holder that submits the Tracking Order may designate a minimum execution size for a Tracking Order. Using the same example as above, if the ETP Holder that submitted the Tracking Order to buy for 1,000 shares sets a minimum quantity of 200 shares, it will only execute against eligible contra-side interest that is 200 to 1,000 shares in size at the same price. As proposed, if the Tracking Order with a minimum size requirement is executed but not exhausted and the remaining portion of the Tracking Order is less than the minimum size requirement, the Exchange would cancel the Tracking Order. So if the Tracking Order for 1,000 shares has a minimum quantity of 200 shares, and receives an execution of 900 shares, because the remaining portion (100 shares) is less than the minimum execution quantity, it would be cancelled.

Example:
NBBO= $0.98-$1.01
Tracking Order to sell 1000 shares @ $1.00 with a Min. Qty. of 500 shares
Order to buy 600 shares @ $1.01
Tracking order sells 600 shares @ $1.01 (NBO) and cancels the balance because the balance of 400 shares is less than its Minimum Quantity of 500 shares.

4.13   Post No Preference Blind (PNP B) Order

If the price of the PNP B Order is at or through a protected quote, the PNP+ will go blind and will be placed on the book at the price of the contra quote. Marketable Contra Orders will execute first against the PNP B then the rest of the book. When the PBBO moves away from the price of the PNP B but the prices continue to overlap; the PNP B will

remain blind but adjust its price to the PBBO. PNP B Orders will be ranked in time priority regardless of the price of the order when they are blind.

4.14   Self Trade Prevention Information

Four Self-Trade Prevention (STP) modifiers are available to NYSE Arca users. The STP modifiers allow firms to prevent two orders with the same ETP ID from executing against each other. ETP Holders may elect to add the STP modifiers to orders at the ETP ID level.

STP Cancel Newest (STPN)
An incoming order marked with the STPN modifier will not execute against opposite side resting interest marked with any of the STP modifiers from the same ETP ID. The incoming order marked with the STPN modifier will be cancelled back to the originating ETP ID. The resting order, which otherwise would have interacted with the incoming order by the same ETP ID, will remain on the NYSE Arca Book.

STP Cancel Oldest (STPO)
An incoming order marked with the STPO modifier will not execute against opposite side resting interest marked with any of the STP modifiers from the same ETP ID. The resting order, which otherwise would have interacted with the incoming order by the same ETP ID, will be cancelled back to the originating ETP ID. The incoming order marked with the STPO modifier will remain on the NYSE Arca Book.

STP Decrement and Cancel (STPD)
An incoming order marked with the STPD modifier will not execute against opposite side resting interest marked with any of the STP modifiers from the same ETP ID. If both orders are equivalent in size, both orders will be cancelled back to the originating ETP IDs. If the orders are not equivalent in size, the equivalent size will be cancelled back to the originating ETP IDs and the larger order will be decremented by the size of the smaller order with the balance remaining on the NYSE Arca Book.

STP Cancel Both (STPC)
An incoming order marked with the STPC modifier will not execute against opposite side resting interest marked with any of the STP modifiers from the same ETP ID. The entire size of both orders will be cancelled back to originating ETP ID.

General Notes
- STP modifiers are intended to prevent interaction between the same ETP ID.
- STP modifiers must be present on both the buy and the sell order in order to prevent a trade from occurring and to effect a cancel instruction.
- An incoming STP order cannot cancel through resting orders that have price and/or time priority.
- When an order with an STP modifier is entered it will first interact with all available interest in accordance with the Order Ranking and Display process pursuant to Exchange Rule 7.36.
- If there is a remaining balance on the order after trading with all orders with higher priority, it may then interact with an opposite side STP order in accordance with the rules established above.
- In situations where there are multiple STP orders resting in the NYSE Arca Book, an incoming STP order will only interact with the first resting STP order that it encounters.
- Incoming STP orders that are priced through the price of a resting STP order may cancel the resting order as long as no other non-STP orders have priority. Additionally, orders marked with one of the STP modifiers will not be prevented from interacting during any Auction process as defined by Rule 7.35.

4.15   Market Making via FIX (Equities Only)

Q Orders and Oddlot Dealers

ETP Holders that are registered as Market Makers for a given security may, through arrangement with NYSE Arca, use FIX to post quotations to make markets. ETP Holders post their quotes via Q Orders, and trades occur against them.

A Q Order in FIX is represented by the non-standard use of "q" (lower-case Q) as the OrdType (40).

Clients will be required to specify the trader name for the Market Maker in the SenderSubID (50)

Clients may also post auto-refreshing quotes* by specifying MaxFloor (111) =display/fill size in conjunction with DiscretionInst (388) =0 and DiscretionOffset (389) =delta.

Example:

A Market Maker enters a buy "Q" order at 25 with an OrderQty (38) = 2000 MaxFloor (111) =500 and DiscretionOffset=.-05 the order will post 500 shares, if 500 shares are filled the order will refresh at the same quantity but at a price of 24.95. This will continue until the entire quantity on the order is filled.

DiscretionOffset must be negative for buys and positive for sells.

Passive Liquidity Orders (PL)

NYSE Arca is pleased to announce the expansion of Passive Liquidity ("PL") order type to all NMS symbols and all Exchange Trading Permit ("ETP") holders. Previously, the use of Passive Liquidity orders was limited to Lead Market Makers in NYSE Arca listed securities. Beginning on Monday, May 28, 2012, any ETP holder may enter a Passive Liquidity order in any symbol traded on NYSE Arca.

The PL Order is a non-displayed order that takes priority ahead of the NYSE Arca display book if the price of the PL Order is at least one penny better than the best NYSE Arca displayed price. At a price, the PL Order loses priority to all displayed interest.

In issues where NYSE Arca is the primary listings market and there is a Lead Market Maker, the Passive Liquidity Order will be available to the Lead Market Maker only; provided, however, that a buy (sell) Passive Liquidity Order in such instance shall execute against an incoming sell (buy) marketable order only if one of the following conditions are met: (a) the NYSE Arca Book is at the national best bid (offer) and the Lead Market Maker has a displayed bid (offer) equal to the NYSE Arca Marketplace best bid (offer) with a quoted size at least as large as the total size of the incoming marketable sell (buy) order against which the Passive Liquidity Order would trade; or (b) the NYSE Arca Book is at the national best bid (offer) and the Lead Market Maker has a displayed bid (offer) $0.01 below (above) the NYSE Arca Marketplace best bid (offer) with a quoted size at least twice as large as the total size of the incoming marketable sell (buy) order against which the Passive Liquidity Order would trade; or (c) where the NYSE Arca Book is not at the national best bid (offer) AND the price of the Passive Liquidity Order is at least $0.01 higher (lower) than the NYSE Arca Book best bid (offer) AND the incoming marketable order is not designated as an "inter-market sweep" order per Regulation NMS. A Passive Liquidity Order shall not execute if it is priced below other orders in the NYSE Arca Book or if the NYSE Arca Book is at the national best bid (offer) and the Lead Market Maker does not have a displayed order within $0.01 of the NYSE Arca Marketplace best bid (offer).

Midpoint Passive Liquidity (MPL) Order

As in the Passive liquidity order, MPLs are not displayed. MPLs will be executable at the midpoint of the NBBO down to 3 decimal places if necessary when the spread is an odd number. They do not receive price improvement. They will generally interact with all order types including contra MPLs but excluding Cross Orders, Directed Orders and Non-Displayed orders in certain circumstances. MPL Orders will be ranked in time priority for the purposes of execution as long as the midpoint is within the limit range of the order. MPL orders will have a minimum entry size of 100 shares and can have an optional Minimum Execution Size (MES) condition, it's not required though. **NOTE:** If you do not want to interact with Midpoint Liquidity orders, send Tag 9416=0 on your New Order Single (35=D) Message. This is only available when NOT sending an MPL order.

4.16   NYSE Arca Rule 80A Processing

Listed orders must contain the Rule80A field.

Orders sent to NYSE Arca Equities that contain the following capacity flags in the "Rule80A" FIX field will be eligible for routing to the NYSE for execution if the 80(a) curbs are not in place. Since "D" and "M" flagged orders will never be routed to the NYSE when 80(a) curbs are in place, Buy-or Sell+ indicators on these orders will be ignored.

- D = Program Trade, Index Arbitrage, Member as Principal.
- M = Program Trade, Index Arbitrage, member as Agent for Unaffiliated Member.

Although orders that contain "D" or "M" capacity flags will be rejected by the NYSE when 80(a) curbs are in place, NYSE Arca will continue to process these orders routing to other markets.

Orders sent to NYSE Arca Equities that contain the following capacity flags in the "Rule80A" FIX field will always be eligible for routing to the NYSE for execution.

C = Program Trade, Non-Index Arbitrage, Member as Agent for Unaffiliated Member.
N = Program Trade, Non-Index Arbitrage, Member as Agent for Unaffiliated Member.

All the above capacity flags (D, M, C and N) should only be used by ETPID Holders that are also NYSE member firms and plan on reporting these transactions on the Daily Program Trade Report.

Capacity Flags NOT Routed to the NYSE
NYSE Arca will not route orders that contain the following capacity flags in the "Rule80A" FIX field to the NYSE. Instead, orders that contain these capacity flags will be routed to the NYSE or other listed markets through RegNMS routing linkages.

J = Program Trade, Index Arbitrage, Individual Investor.
U = Program Trade, Index Arbitrage, Other Agency.
K = Program Trade, Non-Index Arbitrage, Individual Investor.
Y = Program Trade, Non-Index Arbitrage, Other Agency.

Notes:

For Orders with Side:
Cross SSX (A): must be E, F, H, or X
Cross and Cross SSH (8, 9): must be A, P, J, or X

When sending Cancel Replace, the Rule80A must be the same as original Order

4.17   Short Sell Rule 201

The SEC has a new rule requiring NYSE Arca to prevent the execution or display of a short sale order at a price that is less than or equal to the current national best bid if the price of that covered security decreases by 10% or more from the security's closing price as determined by the listing market as of the end of regular trading hours on the prior day.

In the event that this scenario occurs NYSE Arca will modify the price of the incoming short sale order to a penny higher than the 10% limit before accepting it. Short sale orders that fall within this category, but were already open on Arca, will remain so.

5   NYSE Arca Equities Custom FIX Fields

5.1   NYSE Arca Defined FIX Fields

The following FIX fields have been added or created due to customer demand. They are used to assist customers in trade reconciliation and also for billing purposes.

LastMkt (Tag 30)

The FIX LastMkt field will be specified on execution reports containing trades.

Values for this field:
* PA – NYSE Arca Equities, Tape A
* PB – NYSE Arca Equities, Tape B
* PC – NYSE Arca Equities, Tape C

The client may need this field for back office clearing and reporting purposes.

ExecBroker Field (Tag 76)

The FIX ExecBroker field can be specified on execution reports containing trades for equities. This will contain the ETPID (The NYSE Arca Equity Trading Permit Identifier) of the customer submitting the order for execution. This is a configurable setting that is turned on at the request of the customer (ExecBroker only appears on executions done on the exchange).

This tag is not included in the execution message by default. This feature can be enabled/disabled through your Logon Message. Please see Logon Session Profile (Section 5.2) for more details. If you wish this feature enabled and you cannot enable it through the Logon Profile, the Connectivity group can enable this at the session level. You will need to send an e-mail to connectivity@nyse.com requesting this feature be turned on.

Liquidity Indicator (Tag 9730)

The Liquidity indicator is a proprietary FIX field sent on execution reports by NYSE Arca Equities to indicate what effect an order has had on the liquidity of the book. Client's rates are determined by whether an order adds or removes liquidity from the book. The LiquidityIndicator is FIX Tag 9730 and is registered at fixprotocol.org. Appendix A in this specification contains all the definitions and values for this Tag.

This feature can be enabled/disabled through your Logon Message. Please see Logon Session Profile (Section 5.2) for more details. By default, this option is enabled. If you wish this feature disabled and you cannot disable it through the Logon Profile, the Connectivity group can turn this off on at the session level. You will need to send an e-mail to connectivity@nyse.com requesting this feature be turned off.

ArcaEX ID (Tag 9731)

This proprietary tag (9731) is populated by a numeric ID that is generated by the NYSE Arca Equities Exchange. Both sides of the trade have the same ID. It is used by the client to uniquely identify executions and it is included in the end of day RIO clearing file.

This tag is not included in the execution message by default. This feature can be enabled/disabled through your Logon Message. Please see Logon Session Profile (Section 5.2) for more details. If you wish this feature enabled and you cannot enable it through the Logon Profile, the Connectivity group can enable this at the session level. You will need to send an e-mail to connectivity@nyse.com requesting this feature be turned on.

Attributed Quote Indicator (Tag 9732)

This proprietary tag (9732) is set by the client to Y or N. The customer will set it to Y if they want their ETPID distributed through the ArcaBook quote feed instead of the standard ARCHIP. The attributed quote in the ArcaBook feed will show as A + The first 4 letters of the ETPID of the sender.

Proactive If Locked Indicator (Tag 9733)

This proprietary tag (9733) is used for two purposes – first, for the client to indicate whether an order should route outbound if Arca is locked by an away marketplace and in the case of MPL orders, whether the order should remove liquidity in certain circumstances ("non-display remove liquidity"). Second, it allows the client to indicate whether an order should re-price with respect to LULD bands instead of the default behavior of being cancelled if priced through an LULD band.

See the valid values under Tag 9733 for details on the various instructions available.

A client can also request these settings to be enabled by default on a FIX session, where all limit orders will by default be appended with the specified value for tag 9733.

6 FIX Session Settings and Messaging

6.1   Auto Cancel on Disconnect

At the client's discretion, the FIX client session can be set to automatically cancel all live or pending orders whenever a firm disconnects, with exclusions noted below. This is dependent upon the client sending the proper values within their Logon Message to enable or disable Cancel on Disconnect on the session via the Logon Session Profile (See Section 5.2).

- Excluded from cancellation are the following:GTC, GTX, GTD orders
- PO+ MOC/LOC orders for NYSE/NYSE MKT symbols after 3:45 PM
- MOO/LOO orders for 1 minute prior to the Core Opening Auction
- MOC/LOC orders at all times

Please note that this feature does not guarantee that all outstanding orders will be successfully canceled. Trades may happen near the disconnection time and will not be reported until the firm reconnects. Cancel requests may also fail due to a software or hardware problem, leaving an order live and subject to execution.

Automatic order cancellation is intended to help firms in emergency situations. Firms must not rely upon this feature as a normal business practice or to prevent liability of execution, nor is it a substitute for contacting the applicable trade desks to verify that all orders are indeed canceled and that the firm has received all trades.

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.

6.2   Logon Session Profile

For the NYSE Arca UGW FIX Gateway, a new client feature profile has been added utilizing Tags 95 and 96 to the Logon Message. Utilizing this profile, you can enable and disable session cancel on disconnect, tags and messages to be send back on the order entry session. You can also enable/disable certain tags to be defaulted on orders through the session. Below is an explanation and details of each setting and value.

Tag	Position	Description	Values
95	N/A	Number of Feature Position Fields to Read	1 – 8
96	1	Cancel On Disconnect	0 - Do not enable Cancel On Disconnect for the session 1 - Enable Cancel On Disconnect for the session
	2	Send Busts and Correct Messages	0 - Do not enable Bust and Correct messages for the session 1 - Enable Bust and Correct messages for the session
	3	Send Liquidity Indicator	0 -Do not enable Tag 9730 to be sent on executions for the session 1 - Enable Tag 9730 to be sent on executions for the session
	4	Send ArcaExID	0 -Do not enable Tag 9731 to be sent on Executions for the session 1 - Enable Tag 9731 to be sent on Executions for the session
	5	Default ExtendedExecinst (Tag 9416) on New Order Messages	0 -No Interaction with Midpoint Passive Liquidity Orders 2 - No interaction with IOI Cloud A - Add Liquidity Only Z – Do Not enable Default of 9416 (ExtendedExecInst) Note: If a value is enabled here for default and you send in

Tag	Position	Description	Values
			another value in Tag 9416 on a New Order, the value you sent in Tag 9416 will override this setting for that order and pass that value to the Matching Engines.
	6	Send ExecBroker	0 -Do not enable Tag 76 to be sent on Executions (Partial Fills/Fills) for the session 1 - Enable Tag 76 to be sent on Executions (Partial Fills/Fills) for the session
	7	Default ProactiveIfLocked (Tag 9733) on New Order Messages	0 – Do not default Tag 9733 on New Order Messages 1 - Default Tag 9733 to Y on New Order Messages A - Default Tag 9733 to 1 on New Order Messages B - Default Tag 9733 to 2 on New Order Messages
	8	Send Microsecond Time Stamps in Tags 52/60	0 - Do not enable Microsecond Time Stamps for the session 1 - Enable Microsecond Time Stamps for the session

Tag 95 - # of Positions

Feature Profile (96)	Cancel On Disconnect	Send Busts and Corrects	Send Tag 9730 Liquidity Indicator	Send Tag 9731 ArcaExecID	Default Tag 9416 Extended ExecInst	Send Tag 76 ExecBroker	Default Tag 9733 Proactive if locked	Send Microsecond Time Stamps in Tags 52/60
Values	**0 or 1**	**0 or 1**	**0 or 1**	**0 or 1**	**0, 2, A, Z**	**0 or 1**	**0, 1, A, B**	**0 or 1**
Tag 95	1							
Tag 96	0 or 1	0 or 1	0 or 1	0 or 1	0, 2, A, Z	0 or 1	0, 1, A, B	0 or 1
Tag 95	2							
Tag 96	0 or 1	0 or 1	0 or 1	0 or 1	0, 2, A, Z	0 or 1	0, 1, A, B	0 or 1
Tag 95	3							
Tag 96	0 or 1	0 or 1	0 or 1	0 or 1	0, 2, A, Z	0 or 1	0, 1, A, B	0 or 1
Tag 95	4							
Tag 96	0 or 1	0 or 1	0 or 1	0 or 1	0, 2, A, Z	0 or 1	0, 1, A, B	0 or 1
Tag 95	5							
Tag 96	0 or 1	0 or 1	0 or 1	0 or 1	0, 2, A, Z	0 or 1	0, 1, A, B	0 or 1
Tag 95	6							
Tag 96	0 or 1	0 or 1	0 or 1	0 or 1	0, 2, A, Z	0 or 1	0, 1, A, B	0 or 1
Tag 95	7							
Tag 96	0 or 1	0 or 1	0 or 1	0 or 1	0, 2, A, Z	0 or 1	0, 1, A, B	0 or 1
Tag 95	8							
Tag 96	0 or 1	0 or 1	0 or 1	0 or 1	0, 2, A, Z	0 or 1	0, 1, A, B	0 or 1

As new features are added, they will be appended to the end of the profile in new positions.

If Logon Profile is not used, the following default settings will apply:

Feature	Default
Cancel On Disconnect	0 - Do not enable Cancel On Disconnect for the session
Send Busts and Correct Messages	1 - Enable Bust and Correct messages for the session
Send Liquidity Indicator	1 - Enable Tag 9730 to be sent on executions for the session
Send ArcaExID	0 - Do not enable Tag 9731 to be sent on Executions for the session
Default ExtendedExecinst (Tag 9416) on New	Z – Do Not enable Default of 9416 (ExtendedExecInst)

Order Messages	
Send ExecBroker	0 - Do not enable Tag 76 to be sent on Executions (Partial Fills/Fills) for the session
Default ProactiveIfLocked (Tag 9733) on New Order Messages	0 – Do not default Tag 9733 on New Order Messages
Send Microsecond Time Stamps in Tags 52/60	0 - Do not enable Microsecond Time Stamps for the session

Or if Profile positions are not utilized, the default value applies to that position.

Examples:

Only Enable/Disable Cancel On Disconnect is selected on Logon Message:

95=1
96=1 (Cancel on Disconnect Enabled)

Default Value would apply to the other positions:

Feature	Default
Send Busts and Correct Messages	1 - Enable Bust and Correct messages for the session
Send Liquidity Indicator	1 - Enable Tag 9730 to be sent on executions for the session
Send ArcaExID	0 - Do not enable Tag 9731 to be sent on Executions for the session
Default ExtendedExecinst (Tag 9416) on New Order Messages	Z – Do not enable Default of 9416 (ExtendedExecInst)
Send ExecBroker	0 - Do not enable Tag 76 to be sent on Executions (Partial Fills/Fills) for the session
Default ProactiveIfLocked (Tag 9733) on New Order Messages	0 – Do not default Tag 9733 on New Order Messages
Send Microsecond Time Stamps in Tags 52/60	0 - Do not enable Microsecond Time Stamps for the session

Enable/Disable Cancel On Disconnect, Send Busts and Corrects, Send Liquidity Indicator, and Send ArcaExID is selected on Logon Message:

95=4
96=1111 (Cancel on Disconnect, Busts and Corrects, Liquidity Indicator, ArcaExID all enabled)

Default Value would apply to the other positions:

Feature	Default
Default ExtendedExecinst (Tag 9416) on New Order Messages	Z – Do Not enable Default of 9416 (ExtendedExecInst)
Send ExecBroker	0 - Do not enable Tag 76 to be sent on Executions (Partial Fills/Fills) for the session
Default ProactiveIfLocked (Tag 9733) on New Order Messages	0 – Do not default Tag 9733 on New Order Messages
Send Microsecond Time Stamps in Tags 52/60	0 - Do not enable Microsecond Time Stamps for the session

Cancel On Disconnect, Send Busts and Corrects, Send Liquidity Indicator, Send ArcaExID, Default Proactive If Locked = Y, Send Microsecond Time Stamps on Execution Reports are enabled on Logon Message:

95=8
96= 1111Z011

No Default settings apply in this scenario:

Feature	Default
No default features apply	Customer provided value for all feature positions

6.3   Trade Bust and Trade Correct Messaging

If or when the NYSE Arca Trade Desk changes or busts a trade, "Trade Break" or "Trade Correction" execution report messages can be sent outbound to the customer via FIX. These messages will be defined in FIX with ExecTransType (20) =1 (Cancel) or 2 (Correct).

This feature can be enabled/disabled through your Logon Message. Please see Logon Session Profile (Section 5.2) for more details. By default, this option is turned on. If you wish this disabled and you cannot disable it through the Logon Profile, the Connectivity group can turn this off on at the session level. You will need to send an e-mail to connectivity@nyse.com requesting this feature be turned off.

6.4   Bulk Cancel Message

If you want to bulk cancel your orders without disconnecting your FIX connection(s) we offer a bulk cancel message. The bulk cancel message is MsgType = F with the OrderID (37) field set to -999. We offer the following bulk cancel options:

- **Cancel all live orders** – If you send a bulk cancel message without symbol and side NYSE Arca will cancel all open orders on our Equities Exchange platform (Listed) except for the following:
  - GTC, GTX, GTD orders
  - PO+ MOC/LOC orders for NYSE/NYSE MKT symbols after 3:45 PM
  - MOO/LOO orders during Market Order Auction freeze
  - MOC/LOC orders during Closing Auction freeze
- **Cancel all orders on a side of the market** – If you want to cancel just buy orders you can set the side on the cancel message to buy (side=1). NYSE Arca will cancel open buy orders our Equities Exchange platform (Listed). Exclusions above apply.
- **Cancel all orders for a particular symbol** – If you want to cancel orders for a particular symbol, you can add the symbol to the bulk cancel message. Exclusions above apply.

When NYSE Arca receives a bulk message it will deliver a bulk cancel ack message followed by out messages for each of the orders that are canceled. If your orders have been routed to other exchange destinations we will ack them separately as it may take longer to receive the out messages from the away destinations.

**Note: For symbols migrated to Pillar, Bulk Cancel functionality will additionally exclude from cancellation:
- MOO/LOO orders for 1 minute prior to the Core Opening Auction
- MOC/LOC orders at all times

6.5   Bulk Cancel by ETPID

If you want to bulk cancel your orders across an entire ETPID (Equity Trade Permit ID) without disconnecting your FIX connection(s) we offer this new type bulk cancel message. The bulk cancel by ETPID message is **MsgType = F with the OrderID (37) field set to -888 and your 5 Character ETPID in Tag 1 (Account).**

When NYSE Arca receives a bulk cancel by ETPID, it will deliver a bulk cancel ack message followed by out messages for each of the orders that are canceled across all the sessions that trade under the ETPID set in Tag 1. If your orders have been routed to other exchange destinations we will ack them separately as it may take longer to receive the out messages from the away destinations.

This bulk cancel type is good for those of you that have many open orders on our book at the same time across many sessions. This type of bulk cancel message is extremely helpful in gateway outage situations.

We offer the following options for Bulk Cancel by ETPID:

- **Cancel all live orders** – If you send a Bulk Cancel by ETPID message without symbol and side NYSE Arca will cancel all open orders on our Equities Exchange platform (Listed) for the 5 character ETPID specified in Tag 1 (Account) except for the following:
    - GTC, GTX, GTD orders
    - PO+ MOC/LOC orders for NYSE/NYSE MKT symbols after 3:45 PM
    - MOO/LOO orders during Market Order Auction freeze
    - MOC/LOC orders during Closing Auction freeze

- **Cancel all orders on a side of the market** – If you want to cancel just buy orders for the specified ETPID, you can set the side on the cancel message to buy (side=1). NYSE Arca will cancel open buy orders our Equities Exchange platform (Listed) for the specified ETPID. Exclusions above apply.

- **Cancel all orders for a particular symbol** – If you want to cancel orders for a particular symbol for the specified ETPID, you can add the symbol to the bulk cancel message. Exclusions above apply.

**Note: For symbols migrated to Pillar, Bulk Cancel by ETPID functionality will additionally exclude from cancellation:
- MOO/LOO orders for 1 minute prior to the Core Opening Auction
- MOC/LOC orders at all times

6.6   FIX Session Throttle

This type of order gateway has a throttle limit of 1000 total inbound messages read per second for each configured client order session. The Enforced Message Rate Limitation is to ensure a session provides more predictable performance, while also preventing it from affecting the performance of other sessions on the same gateway.

Processing:
After the 1000th message is received within a rolling 1 second, any subsequent message is buffered until that second is completed. The application then sequentially processes queued messages, carrying over to further seconds every additional 1000 messages in the buffer. In this manner; if 5001 messages are sent to the port in under a second, the last one will not be processed by the gateway until the 5th second.

Outbound message rate from the gateway is not inhibited.

Recommendation:

It is recommended that firms monitor their exchange-bound message rate for a session, and adjust their order flow to utilize other sessions if this limit is frequently approached.

7   Session Protocol

This section discusses issues pertaining to the FIX Session Protocol, which is responsible for providing reliable, ordered transport of FIX Application messages.

All messages sent by your firm must have one SenderCompID and TargetCompID that is agreed upon in advance with NYSE Arca, and a TargetSubID of "ARCA".

Only the following FIX Session MsgTypes may be sent to the NYSE Arca UGW FIX Gateway:

- Sequence Reset
- Logon
- Logout
- Heartbeat
- Test Request
- Resend Request
- Reject

7.1   Sequencing and Reconnecting

In the event of a network or FIX gateway host failure during the day NYSE Arca does provide backup sessions under the same SenderCompID on alternative FIX gateways at customer request. Please note that these backup sessions are totally independent and will need to be connected to with inbound and outbound sequence numbers equal to 1. These sessions will not check orders sent as PossDupFlag=Y against orders sent previously on other FIX sessions with the same SenderCompID. These orders will be processed normally.

NYSE Arca staff will not modify the incoming and outgoing sequence numbers of your live FIX sessions. All UGW FIX connections are FIX 4.2. If you need to reset the sequence numbers on your session, setting ResetSeqNumFlag (Tag 141) to Y upon Login will accomplish this.

Please use caution when forcing a sequence number change as sequence mismatch scenarios typically indicate a serious problem. Coordination with members of the NYSE Arca Connectivity group is always recommended.

7.2   Logon

The logon message must be the first message you send after establishing a TCP connection on the port agreed upon with ARCA. EncryptMethod must be 0 – None, or 5 – PGP/DES-MD5, as agreed upon with ARCA. Your firm must wait for a Logon from ARCA before sending other messages and beginning gap fill operations.

If your firm disconnects during the trading day and reconnects again, the logon you will receive in reply may have a sequence number greater than expected. It is critical that your firm detects this condition and issues a Resend Request to retrieve any missed Executions.

Your firm must specify a heartbeat interval in the Logon message, which the NYSE Arca UGW FIX Gateway will use to determine if the connection is active. The heartbeat information is documented in the Heartbeat and Test Request section.

7.3   Logout

It is your firm's responsibility to log out at the end of each day before midnight Eastern Time. You must verify, **prior to logout**, that there are no live or pending orders, otherwise your firm may miss trade reports.

The party initiating the logout must be the party that breaks the TCP connection to ARCA. This requirement allows for both sides to issue a Resend Request should the logout or its reply arrive with a sequence gap. If you receive a logout with a sequence gap, as per the protocol specification, issue a Resend Request and then your own logout.

7.4   Heartbeat and Test Request

The ARCA Host will use the heartbeat interval specified by the client in the Logon message to determine if the client is alive and the networks connecting your firm to NYSE Arca are functional. A value of 0 will disable this check, and the ARCA Host will not send test requests nor break the connection if the client becomes idle. We recommend a heartbeat interval of 30 seconds. A value too small will waste bandwidth, and a value too large will defeat the purpose of the heartbeat. After HeartBtInt + 2 seconds of inactivity, the ARCA Host will send a Test Request to determine if the firm is still active. After 2 * HeartBtInt + 4 seconds of inactivity, the ARCA Host will send a logout and immediately drop the connection. ARCA expects that your firm will use a similar method to determine if the ARCA Host is active.

7.5   Resend Request

If your firm receives a Resend Request with a sequence gap, it is critical that you resend the appropriate messages first before sending your own Resend Request.

The FIX protocol specification defines two methods to recover from gaps in messages. One method, should your firm receive messages 1-10, then 15, would be to request 11-14 and then process 15. We recommend against this method because it can cause certain race conditions that increase recovery time. Instead, we recommend that your firm discard message 15, and request messages 11-999999. ARCA will resend all messages with sequence numbers greater than or equal to 11. Note that this circumstance refers to the general case; the FIX protocol specification outlines more specific recovery behavior for certain out of sequence Administrative messages.

7.6   Reject

We recommend that your firm use the Reject message as sparingly as possible. As per the FIX specification, any message your firm rejects will not be resent. Your firm should keep a record of which messages the FIX Host rejects, and never resend them.

We will send a reject (Msgtype=3) in the event that a customer has sent a properly formatted message, but a data field (price for example) is not populated with a proper value.

7.7   Sequence Reset

It is required that a Sequence Reset – Gap Fill occurs in sequence. For instance, if resending 10-15, and 11-14 are Administrative messages other than Reject, the client should resend 10, then 11 should be a Sequence Reset – Gap Fill, with a NewSeqNum of 15, and then resend 15. As per the specification, all messages in answer to a Resend Request must be flagged Poss Dupe. We interpret this part of the specification to mean that the Sequence Reset – Gap Fill itself must be flagged Poss Dupe as well.

A Sequence Reset – Gap Fill is the preferred method for handling errors. NYSE Arca will never send a Sequence Reset – Reset automatically. It is only sent by manual intervention, possibly to stop an endless loop of Resend Requests and resends, and we recommend that your firm do the same. We make no attempt to recover skipped messages when we receive a Sequence Reset – Reset, which is advantageous to breaking out of an infinite resend loop.

8   FIX Application Protocol

This section describes some of the FIX Application messages. It is not a complete reference and should be used in conjunction with the FIX protocol specification. Below is a quick legend to the Message tables that follow:

Tag	Field	Description	Req.	Values
Tag #	Field Name	Field Description	Y = Required Y © = Required Conditionally N = Not Required C = Conditional	Valid Values for Field

8.1   New Order – Single

Tag	Field	Description	Req.	Values
	Standard Header		**Y**	**MsgType = D**
1	Account	If this field is present, we copy the information into execution messages referring to this order. This field can be used for clearing information.	N	Agreed upon clearing value
11	ClOrdID	This field contains the ID assigned to the order by the firm. This value must be ≤ 30 characters. It is critical that this ID is unique for all orders sent today. In FIX 4.2, we send an Execution Report with ExecType, OrdStatus = Rejected, and OrdRejReason = Duplicate Order (6).	Y	Customer Defined ≤30 characters
18	ExecInst	Used to specify values for different order types.	N	1=Not Held (Now orders only) 5=Held (Equities PL Order) 6=PNP f 6 (f *space* 6) = ISO E= DNI (GTC Only) F= DNR (GTC Only) R=Primary Peg P=Market Peg M= MPL (Midpoint Passive Liquidity) d=Tracking Order y = Trade-at ISO **9:45/3:55 Only** 7 = Primary until 9:45 then move to NYSE Arca 8 = NYSE Arca until 3:55 then move to primary 9 = Primary until 9:45am ET, then move to NYSE Arca –AND- NYSE Arca until 3:55pm ET, then move to the primary.
38	OrderQty	Indicates share quantity on order.	Y	1-5,000,000
40	OrdType	Indicates order type.	Y	1=Market 2=Limit 5=MOC

Tag	Field	Description	Req.	Values
				7=Inside Limit B=LOC P=Pegged q=Market Maker
44	Price	Indicates price on order in decimals. Prices with significant digits (numbers other than 0) in the 5th decimal place or beyond will cause the order to be rejected by the gateway.	Y	.01-99999.99 (Limit order only)
47	Rule80A	Indicates capacity on order.	Y	A/F=Agency/Agency P/E=Principal/Principal J/X=Agency/Principal K/H=Principal/Agency (see section 3.15 for more detail) (Required on listed orders and crosses)
50	SenderSubID	This field, if present, will be copied into the TargetSubID field of all messages referring to the order. Your firm must not embed dates, time stamps, or order IDs in this field, as doing so will make aggregation of orders for troubleshooting purposes impossible.	N	Customer defined. For Market Makers this value will be agreed upon between ARCA and client.
52	SendingTime	This value must be within 60 seconds of the current time, or we will reject the order.	Y	Time in UTC format. YYYYMMDD-HH:MM:SS
54	Side	Only Buy, Sell, Sell Short, and in some cases, Cross and Cross Short.	Y	1=Buy 2=Sell 5=Sell Short 6=Sell Short Exempt 8=Cross 9=Cross Short
55	Symbol	This field must contain a valid symbol in upper case lettering.	Y	Valid Equities Ticker Symbol
57	TargetSubID	This field is required. The value must be "ARCA" for production. All messages referring to the order will have the SenderSubID set to this value.	Y	ARCA
59	TimeInForce	If a value is not present in this field, the default is Day. **Note: IOC is not a valid TIF on Reserve orders and Inside Limit orders. Inside Limit NOW orders, however, must have TIF of IOC	N	0 = Day 1= GTC **Not Available for Pillar Phase I 2 = At the Opening 3 = IOC (Limit Only) 4 = FOK (Limit Only) **Not Available for Pillar Phase I 6= GTD **Not Available for Pillar Phase I 7 = On Close (Equities. Optional for PO+ only if 40=5 or 40=B is not used) 8= Retail Order Type 1 – IOC 9= Retail Order Type 2 – IOC

Tag	Field	Description	Req.	Values
				A= Retail Order Type 2 – Day or Market
65	SymbolSfx	This field must contain a valid symbol in upper case lettering.	N	Valid Suffix value
76	ExecBroker	Set to POO on Primary Open Orders or PO+ for Primary Plus Orders.	N	POO = Primary On Open PO+ = Primary Plus PO+S = Primary Plus Ship
97	PossResend	An order sent with PossResend set is checked to see if it matches an existing order with the same ClOrdID. If not, it is treated as a new order. If it is a duplicate, we will ignore the message if the order is on file.	N	Y
110	MinQty	Set to indicate minimum number of shares to be traded in order for an execution to occur.	N	≥ 100
111	MaxFloor	Used for reserve orders. **Note: PNP Blind ALO orders may not be entered as Reserve **Note: For symbols migrated to Pillar, PNP ALO, PNP Blind ALO, and PNP ISO ALO orders may not be entered as Reserve. Additionally, MaxFloor may only be entered with round lot values.	N	≥ 100
114	LocateReqd	Indicates whether the broker is to locate the stock in conjunction with a short sell order.	N	Y=Yes N=No
115	OnBehalfOfCompID	This field normally is ignored, although can be used for clearing information.	N	Agreed upon clearing value
126	ExpireTime	This field contains the date and time when an order expires. This field should only be specified when TimeInForce = GTD.	N	Time in UTC format. YYYYMMDD-HH:MM:SS **NOTE: The seconds component of this field is ignored.**
211	PegDifference	Refer to pegged orders section 4.	N	-9999.99-9999.99
336	TradingSessionID **(NOTE: REPEATING GROUP!)**	Indicates trading session order is designated for.	N	P1=Pre Open P2=Core P3=Post Market
386	NoTradingSessions	The number of instances of TradingSessionID values following.	N	1-3 (Must come before 336 Tag(s))
388	DiscretionInst	Refer to discretionary orders section	N	0 **Not Available for Pillar Phase I
389	DiscretionOffset	Refer to discretionary orders section	N	-9999.99-9999.99 **Not Available for Pillar Phase I
7928	NoSelfTrade	If used will prevent the order from trading against another order from the same ETPID	N	N = Cancel Newest O = Cancel Oldest C = Cancel Both D = Decrement
8020	Display Range	Used for Random Reserve orders to indicate the display range	N	0-999,999

Tag	Field	Description	Req.	Values
8021	Passive Discretion	Set to indicate that a discretionary order should not route away from NYSE Arca.	N	0
9416	ExtendedExecInst	Used for the following: To indicate no interaction with Midpoint Passive Liquidity (MPL) Orders. To indicate no interaction with the IOI Dark Pool quotes (Equities). To indicate for the order to Add Liquidity Only to the Arca Book.	N	0 = No interaction with MPL Orders. 2 = Opt out of interaction with IOI Dark Pool Quotes A = Add Liquidity Only R = RPI Order
9417	ExtendedPNP	Used to indicate if the order is PNP Blind	N	B = PNP Blind
9732	Attributed Quote	Set to Y if to indicate that ETPID distributed through the ARCABook quote feed instead of the standard ARCHIP.	N	Y – Yes, attributed N or null – No, not attributed
9733	Proactive If Locked	Used for two purposes – first, for the client to indicate whether an order should route outbound if Arca is locked by an away marketplace and in the case of MPL orders, whether the order should remove liquidity in certain circumstances ("non-display remove liquidity"). Second, for the client to indicate whether an order should re-price with respect to LULD bands instead of the default behavior of being cancelled if priced through an LULD band.	N	Y – Proactive if Locked 1 – Re-price if priced through LULD/Non-display remove liquidity (MPL orders) 2 - Proactive if Locked/Non-display remove liquidity (MPL orders), and Re-price if priced through LULD
	Standard Footer		*Y*	

8.2   Order Cancel Request

In addition to requirements for the standard FIX message header, only the following fields are used by the application layer for an Order Cancel Request. Any other fields specified in the message are ignored.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = F*
1	Account	Used on ETPID Bulk Cancel Only.	N	Customer ETPID (See Section 5.4 for more details)
11	ClOrdID	This field contains the ID assigned to the change by your firm. This value must be ≤ 30 characters. It is critical that this ID is unique for all orders and changes sent today, as well as any orders or changes that may be active from previous days.	Y	User specified up to 30 characters
18	ExecInst	If sent, this value must match the original order.	N	1=Not Held 5=Held 6=PNP f 6 (f *space* 6) = ISO E= DNI (GTC Only) F= DNR (GTC Only)

Tag	Field	Description	Req.	Values
				R=Primary Peg
				P=Market Peg
				M= MPL
				y = Trade-at ISO
37	OrderID	If present, the value must exactly match the OrderID NYSE Arca assigns to the order.	N	Numerical up to 20 characters
38	OrderQty	If sent, this value must match the original order.	N	1-5,000,000
40	OrdType	If sent, this value must match the original order.	N	1=Market 2=Limit 5=MOC (Market On Close) 7=Inside Limit B=LOC (Limit on Close) P=Pegged q=market maker
41	OrigClOrdID	This value must match the ClOrdID of the order or replaced order being cancelled. This value is the ClOrdID of the most current successful change. If the order was not changed or replaced, then this will be the ClOrdID of the original order.	Y	User specified up to 30 characters
44	Price	If sent, this value must match the original order. Prices with significant digits (numbers other than 0) in the 5th decimal place or beyond will cause the order to be rejected by the gateway.	N	.01-9999.99
47	Rule80A	If sent, this value must match the original order.	N	A/F=Agency/Agency P/E=Principal/Principal J/X=Agency/Principal K/H=Principal/Agency
52	SendingTime	This value must be within 60 seconds of the current time, or we will reject the order.	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS
54	Side	If sent, this value must match the original order.	N	1=Buy 2=Sell 5=Sell Short 6 = Sell Short Exempt 8=Cross 9=Cross Short
55	Symbol	This value must match the original order.	Y	Valid Symbol
59	TimeInForce	If sent, this value must match the original order. **Note: IOC is not a valid TIF on Reserve orders	N	0=Day 1= GTC **Not Available for Pillar Phase I 2=At the Opening

Tag	Field	Description	Req.	Values
		and Inside Limit orders. Inside Limit NOW orders, however, must have TIF of IOC		3=IOC (Limit Only)
				6=GTD **Not Available for Pillar Phase I
				7 = On Close (Optional for PO+ Only if 40=5 or 40=B is not used)
65	SymbolSfx	If sent, this value must match the original order.	Y	Valid Suffix value
97	PossResend	A change request sent with PossResend set is checked to see if it matches an existing order with the same ClOrdID.	N	Y
111	MaxFloor	If sent, this value must match the original order. **Note: PNP Blind ALO orders may not be entered as Reserve **Note: For symbols migrated to Pillar, PNP ALO, PNP Blind ALO, and PNP ISO ALO orders may not be entered as Reserve. Additionally, MaxFloor may only be entered with round lot values.	N	≥ 100
126	ExpireTime	If sent, this value must match the original order.	N	Time specified in UTC time. YYYYMMDD-HH-MM-SS
168	EffectiveTime	If sent, this value must match the original order.	N	Time specified in UTC time. YYYYMMDD-HH-MM-SS
211	PegDifference	If sent, this value must match the original order.	N	-9,999.99-9,999.99
388	DiscretionInst **Not Available for Pillar Phase I	If sent, this value must match the original order.	N	0
389	DiscretionOffset **Not Available for Pillar Phase I	If sent, this value must match the original order.	N	-9,999.99-9,999.99
	Standard Footer		*Y*	

8.3   Cancel/Replace Request

In addition to requirements for the standard FIX message header, only the following fields are used by the application layer for an Order Cancel/Replace (Change) Request. Any other fields specified in the message are ignored.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = G*
11	ClOrdID	This field contains the ID assigned to the change by your firm. This value must be <= 30 characters. It is critical that this ID is unique for all orders and changes sent today, as well as any orders or changes that may be active from previous days. If this value is duplicated; we	Y	User specified up to 30 characters

Tag	Field	Description	Req.	Values
		will send a Cancel Reject.		
18	ExecInst	This value must match the original order.	Y	1=Not Held 5=Held 6=PNP f 6 (f *space* 6) = ISO *E= DNI (GTC Only, Unavailable)* *F= DNR (GTC Only, Unavailable)* R=Primary Peg P=Market Peg M= MPL y = Trade-at ISO
37	OrderID	If present, the value must exactly match the OrderID ARCA assigns to the order.	N	Numerical up to 20 characters
38	OrderQty	This value can be changed	Y	1-5,000,000
40	OrdType	This value can be changed	Y	1=Market 2=Limit 5=MOC (Market On Close) 7=Inside Limit B=LOC (Limit on Close) P=Pegged q=market maker
41	OrigClOrdID	This value must match the ClOrdID of the order being changed. Note in the case of multiple changes that. This value is the ClOrdID of the most current successful change.	Y	User specified up to 30 characters
44	Price	This value can be changed. Prices with significant digits (numbers other than 0) in the 5th decimal place or beyond will cause the order to be rejected by the gateway.	Y	.01-9999.99 (Limit order only)
47	Rule80A	This value must match the original order.	Y	A/F=Agency/Agency P/E=Principal/Principal J/X=Agency/Principal K/H=Principal/Agency
52	SendingTime	This value must be within 60 seconds of the current time, or we will reject the order.	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS
54	Side	This value can be changed between Sell, Sell Short, and Sell Short Exempt.	Y	1=Buy 2=Sell 5=Sell Short 6 = Sell Short Exempt 8=Cross 9=Cross Short
55	Symbol	This value must match the original order.	Y	Valid Equities Symbol

Tag	Field	Description	Req.	Values
59	TimeInForce	This value must match the original order.	Y	0=Day 2=At the Opening 3=IOC (Limit Only) 7 = On Close (Optional for PO+ Only if 40=5 or 40=B is not used)
65	SymbolSfx	This value must match the original order.	Y	Valid Suffix value
97	PossResend	A change request sent with PossResend set is checked to see if it matches an existing order with the same ClOrdID.	N	Y
111	MaxFloor	This value must match the original order. **Note: PNP Blind ALO orders may not be entered as Reserve **Note: For symbols migrated to Pillar, PNP ALO, PNP Blind ALO, and PNP ISO ALO orders may not be entered as Reserve. Additionally, MaxFloor may only be entered with round lot values	Y	≥ 100 (Required if specified on the original order)
126	ExpireTime	This value can be changed	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS (Required if specified on the original order)
168	EffectiveTime	This value can be changed	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS (Required if specified on the original order)
211	PegDifference	This value can be changed	Y	-9,999.99-9,999.99 (Required if specified on the original order)
336	TradingSessionID (repeating field)	This value can be changed	N	P1,P2,P3
386	NoTradingSessions	This value can be changed	N	1,2,3 (Must come before 336 Tag(s))
388	DiscretionInst **Not Available for Pillar Phase I	This value must match the original order.	Y	0 (Required if specified on the original order)
389	DiscretionOffset **Not Available for Pillar Phase I	This value can be changed	Y	-9,999.99-9,999.99 (Required if specified on the original order)
	Standard Footer		*Y*	

8.4　Fast Cancel/Replace – Not Available for Pillar

Fast cancel replace functionality is available on Equities PNP order types Only. One can change the volume and/or price only. All other fields will be ignored. Unlike standard cancel replace messages on our platform you will receive one execution report (MsgType=8) indicating that the order is replaced. You will not receive a pending cancel replace message.

To send a fast cancel replace you must include the ExtendedExecInst (Custom Tag 9416) = 1 in your cancel replace message. Unlike traditional cancel replaces where the ClOrdID changes each time you modify an order, the fast cancel replace maintains the ClOrdID of the first order that was entered, therefore you must send the ClOrdID of the first order in the order chain in the OrigClOrdID (Tag 41). The OrderID (Tag 37) of the original order must also be included.

*Please keep in mind, you must still send a unique ClOrdID (Tag 11) along with each Fast Cancel Replace, but the order will not be Replaced on that ClOrdID.

This cancel replace logic is faster because all the fields in the replace message do not need to be parsed. Our matching engine will look at price and volume only and update the original order record.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = G*
11	ClOrdID	This field contains the ID assigned to the change by your firm. This value must be <= 30 characters. It is critical that this ID is unique for all orders and changes sent today, as well as any orders or changes that may be active from previous days. If this value is duplicated; we will send a Cancel Reject.	Y	User specified up to 30 characters
18	ExecInst	This value must match the original order.	Y	6=PNP
37	**OrderID**	**The value must exactly match the OrderID ARCA assigns to the order.**	**Y**	**Numerical up to 20 characters**
38	OrderQty	This value can be changed	Y	1-5,000,000
40	OrdType	This value must match the original order.	Y	2=Limit 7=Inside Limit q=market maker
41	**OrigClOrdID**	**You must send the ClOrdID of the first order in the chain in this field.**	**Y**	**User specified up to 30 characters**
44	Price	This value can be changed. Prices with significant digits (numbers other than 0) in the 5th decimal place or beyond will cause the order to be rejected by the gateway.	Y	.01-9999.99
47	Rule80A	This value must match the original order.	Y	A/F=Agency/Agency P/E=Principal/Principal J/X=Agency/Principal K/H=Principal/Agency
52	SendingTime	This value must be within 60 seconds of the current time, or we will reject the	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS

Tag	Field	Description	Req.	Values
		order.		
54	Side	This value must match the original order.	Y	1=Buy 2=Sell 5=Sell Short 8=Cross 9=Cross Short
55	Symbol	This value must match the original order.	Y	Valid Equities Symbol
59	TimeInForce	This value must match the original order.	Y	0=Day
65	SymbolSfx	This value must match the original order.	Y	Valid Suffix value
97	PossResend	A change request sent with PossResend set is checked to see if it matches an existing order with the same ClOrdID.	N	Y
336	TradingSessionID (repeating field)	This value can be changed	N	1-3
386	NoTradingSessions	This value can be changed	N	1-3
9416	**ExtendedExecInst**	**Required Value**	**Y**	**1 = Fast Cancel/Replace**
9417	**ExtendedPNP**	**This value must match the original order.**	**C**	**B = PNP Blind (Only if original order was PNP Blind)**
	Standard Footer		*Y*	

8.5 Execution Reports

Clients can expect to receive an acknowledgement on any order placed as well as any subsequent fills in the form of an execution report or MsgType=8. In addition to requirements for the standard FIX message header, the following fields will be specified on these messages.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = 8*
1	Account	If this field is present, we copy the information into execution messages referring to this order. This field can be used for clearing information.	N	User specified up to 10 characters
6	AvgPx	Indicates Average Price of fills on order	Y	.000001-999999.999999
11	ClOrdID	ID assigned to the order by the firm.	Y	User specified up to 30 characters
14	CumQty	Indicates total quantity of fills on open order	Y	1-999,999
17	ExecID	Execution ID assigned by NYSE Arca. Unique per session, per day.	Y	Numerical up to 20 characters
19	ExecRefID	On trade break or trade correction only	Y	Contains the ExecID (Tag 17) value of the Fill that is broken or corrected.

Tag	Field	Description	Req.	Values
20	ExecTransType	All execution reports	Y	0=New 1=Cancel (Trade Break Only) 2=Correct (Trade Correction Only)
30	LastMkt	Designates system of execution	Y	PA – Tape A PB – Tape B PC – Tape C
31	LastPx	Indicates price of fill	Y	.000001-999999.999999
32	LastShares	Indicates quantity of fill	Y	1-999,999
37	OrderID	OrderID assigned by ARCA	Y	Numerical up to 20 characters
38	OrderQty	Indicates share quantity on order	Y	Up to 5,000,000
39	OrdStatus	Identifies current status of order	Y	0=New 1=Partially Filled 2=Filled 3=Done For Day 4=Cancelled 5=Replaced 6=Pending/Cxl Replace 8=Rejected C = Billable Cancel (STP Only) E= Pending Cxl/Replace (4.2 only)
40	OrdType	Indicates order type of order	Y	1=Market 2=Limit 5=MOC (Market on Close) 7=Inside Limit B=LOC (Limit On Close) P=Pegged q=Market Maker
44	Price	Indicates price on order in decimals.	Y*	0-9999999.9999 (Limit order only)
45	RefMsgSeqNum	Sent on gateway rejection messages	Y (C)	Will contain the Sequence Number of the message that was rejected by the gateway
50	SenderSubID	Client will receive value specified in TargetSubID on order.	Y	ARCA
52	SendingTime	Time sent by ARCA	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS If Microseconds is enabled by the customer: **YYYYMMDD-HH-MM-SS.mmmmmm**
54	Side	Buy, Sell, or Sell Short	Y	1=Buy 2=Sell 5=Sell Short 6 = Sell Short Exempt
55	Symbol	This field must contain a valid symbol in upper case lettering.	Y	Equities Ticker Symbol
57	TargetSubID	Client will receive value specified in SenderSubID on order.	Y (C)	User Specified up to 10 characters (Required if specified on the original

Tag	Field	Description	Req.	Values
				order)
58	Text	Gives additional information on how the New Order, Cancel, or Cancel/Replace Message was handled.	Y	Examples of Information Text: • New Order • Partially Filled • Filled • Expired • Cancelled • Replaced • Pending/Cxl Replace • Rejected • Self + ClOrdID (Equities STP Only)
59	TimeInForce	TIF from order. If TIF was not present on the original order, the default value is Day. **Note: IOC is not a valid TIF on Reserve orders and Inside Limit orders. Inside Limit NOW orders, however, must have TIF of IOC	N	0=Day 1=GTC **Not Available for Pillar Phase I 2=At the Opening 3=IOC (Limit Only) 4=FOK (Limit Only) **Not Available for Pillar Phase I 6=GTD **Not Available for Pillar Phase I 7=On Close 8= Retail Order Type 1 – IOC 9= Retail Order Type 2 – IOC A= Retail Order Type 2 – Day or Market
65	SymbolSfx	This field must contain a valid symbol in upper case lettering.	N	Valid Suffix value (Returned if used on original order, or if Comstock symbol is used in Tag 55 on Original Order)
103	OrdRejReason	Sent on Order Rejects.	C	1 = See Text for reason 3=See Text for reason
150	ExecType	Describes the specific Execution Report	Y	0=New 1=Partially Filled 2=Filled 3=Done For Day 4=Cancelled 5=Replaced 6=Pending Cxl/Replace 8=Rejected C = Billable Cancel (No Self Trade Only) E= Pending Cxl/Replace (4.2 only)
151	LeavesQty	Indicates open shares remaining on order	Y	1-999,999
211	PegDifference	Refer to pegged orders section	N	-9999.99-9999.99
9416	ExtendedExecInst	Returned if used on original order message	Y (C)	0 = For not interacting with MPL Orders (Equities) 1 = fast cancel replace **Not Available for Pillar 2 = IOI Dark Pool Opt Out A = Add Liquidity Only R = RPI Order

Tag	Field	Description	Req.	Values
9417	ExtendedPNP	Returned if used on original order message	Y (C)	B = PNP Blind
9730	LiquidityIndicator	Sent on Order Ack, Cancel pending, Cancelled, C/R Pending, and Replaced Acks conditionally	Y(C)	On Acknowledgements: 1 = Candidate for Liquidity Indicator "S" 2 = Blind 3 = Not Blind On Partial Fills and Fills: See Appendix A for Values
	Standard Footer		*Y*	

8.6   Order Cancel Reject

In addition to requirements for the standard FIX message header, the following fields re returned on Cancel or Cancel/Replace Reject Message.

Tag	Field	Description	Req.	Values
	Standard Header		*Y*	*MsgType = 9*
11	ClOrdID	This field contains the ClOrdID assigned by your firm.	C	User specified up to 30 characters
37	OrderID	If Tag 37 containing the Arca assigned OrderID is sent on the Cancel or Cancel/Replace Request, that value is returned. If no Tag 37 is sent, will contain the Tag 11 value sent on the Cancel or Cancel/Replace Request.	Y	Arca Assigned OrderID (Up to 20 numerical characters) or User assigned ClOrdID (Tag 11 from Cancel or Cancel/Replace Request)
39	OrdStatus	Identifies status of the request	Y	8=Rejected
41	OrigClOrdID	This value is the ClOrdID of the most current successful change.	Y	User specified up to 30 characters
52	SendingTime	Time sent by ARCA	Y	Time specified in UTC time. YYYYMMDD-HH-MM-SS If Microseconds is enabled by the customer: YYYYMMDD-HH-MM-SS.mmmmmm
58	Text	Gives information on why the Cancel or Cancel/Replace request was rejected	Y	Reason for Reject
102	CxlRejReason	Code to identify reason for cancel rejection.	Y	0 = Too Late To Cancel 1 = See Text for reason 3 = See Text for reason
434	CxlResponseTo	Identifier of message type for which this reject message is a response	Y	1 = Order Cancel Request 2 = Order Cancel Replace Request
	Standard Footer		*Y*	

9   NYSE Arca Equities Order Types

**For information on functional changes to order types for symbols migrated to Pillar, please visit:
https://www.nyse.com/pillar

Order Type	FIX Tags	Description	Available Sessions
Market Order	OrdType (40)=1 (Market)	An order to buy or sell that is to be executed at the best price obtainable. Bound by the NBBO.	Mkt Order Auction Core
Limit Order	OrdType (40) = 2 (Limit)	An order to buy or sell at a specified price or better. A marketable limit order is a limit order to buy (sell) at or above (below) the protected best offer (bid) for the security.	All
PNP (post no preference)**	OrdType (40) = 2 ExecInst (18) = 6	A limit order to buy or sell that is to be executed in whole or in part on NYSE Arca. The portion not executed is posted in the Book without routing any portion of the order to another market center. PNP Orders that lock or cross the market will be rejected. **Note: for symbols migrated to Pillar, both PNP and PNP Blind orders will be converted to the same order type upon entry, and will both behave like PNP Blind orders. For information on functional changes to order types for symbols migrated to Pillar, please visit: https://www.nyse.com/pillar	All
IOC (immediate Or Cancel)	OrdType (40) = 2 TimeInForce (59) = 3	A limit order that is to be executed in whole or in part on NYSE Arca as soon as the order is received. Any residual balance is cancelled. IOC orders may not trade through protected quotes.	All
Inside Limit	OrdType (40) = 7	Marketable inside limit orders will be matched within the Book at the best obtainable price or routed to the market participants at the NBBO. Any residual volume will not be routed to the next price level until all quotes at the current best bid or offer are exhausted. Non-marketable inside limit orders will be posted in the Book at the limit price. **Note: Inside Limit orders may not be entered with TIF of IOC (59 = 3). Inside Limit NOW orders, however, must have TIF of IOC.	All
Reserve Order	OrdType (40) = 2 (limit) MaxFloor (111) = (show size)	A limit order that replenishes the displayed order size as executions are received, up to the total order quantity; away markets are routed at their quoted size or larger (if applicable) when hitting the bid or taking the offer. Reserve orders look only at protected quotes. **Note: Reserve orders may not be entered with a TIF of IOC (59 = 3). **Note: For symbols migrated to Pillar, MaxFloor	All

Order Type	FIX Tags	Description	Available Sessions
		may only be entered with round lot values.	
Passive Liquidity (PL)	OrdType (40) = 7 ExecInst (18) = 5	A Passive Liquidity order (PL) is an order that is never displayed externally. It's ranked behind display and reserve orders and ahead of all other orders. The PL Order Type is available for all 3 sessions and available to all users.	All
Midpoint Passive Liquidity (MPL) Order	**MidPoint Passive Liquidity Order** OrdType (40) = 2 ExecInst (18) = M *MinQty (110) = the minimum qty desired on each fill *ProactiveIfLocked (9733)= Y (* = Optional) **MPL ALO (Add Liquidity Only) Order** OrdType (40) = 2 ExecInst (18) = M ExtendedExecInst (9416)= A *ProactiveIfLocked (9733)= Y (* = Optional) **MPL IOC Order** OrdType (40) = 2 ExecInst (18) = M Quantity (38) = Minimum of 100 TimeInForce (59) = 3	The MPL order is an un-displayed limit order that is priced at the midpoint of the Protected Best Bid and Offer (PBBO). MPL orders will generally interact with all order types including contra MPLs excluding: cross or directed orders. MPL orders will be entered as a limit order but are executable only at the midpoint of the NBBO. MPLs will not execute if the market is locked/crossed. MPL Orders may also be entered with a Minimum Execution Size condition, though this is not required. MPL orders always execute at the midpoint and do not receive price improvement. MPL IOC orders will execute only at the midpoint of the protected best bid or offer (PBBO), Any portion of the MPL IOC that is not executed will be immediately cancelled back to the customer. MPL IOCs require a minimum order entry size of 100 shares, but may be executed in odd-lot volumes. Unlike an MPL order, customers may not specify a minimum executable size for an MPL IOC. If the market is locked or crossed, the MPL IOC will cancel. If you do not want your orders to interact with Midpoint Passive Liquidity orders send Tag 9416=0 on your new order message (only available for non-MPL).	All
NOW order	OrdType (40) = 2 TimeInForce (59) = 3 ExecInst (18) = 1	A limitorder that is executed in whole or in part that will be routed to one or more NOW recipients (those venues that respond immediately with a fill or a cancel) that are protected quotes for immediate execution if the order cannot be executed on NYSE Arca. Orders are immediately canceled if not executed at the quoted price or better. Customers may use the NOW Order for accessing IOI un-displayed liquidity venues.	All
Intermarket Sweep Order (ISO) - RegNMS	**ISO PNP Order** OrdType (40) = 2 ExecInst (18) = f 6 **ISO PNP IOC Order** OrdType (40) = 2 ExecInst (18) = f 6 TimeInForce (59) = 3	ISO Modifier –Under RegNMS, clients may send ARCA an instruction to trade only with the ARCA book and ignore all away market quotes (including Protected Quotes). This is known as the Intermarket Sweep Order (ISO) o ISO PNP IOC – Sweep the ARCA Book to the price, cancel any remaining balance, and ignore all external	All

Order Type	FIX Tags	Description	Available Sessions
		quotes. o ISO PNP – Sweep the ARCA Book to the price, Post any remaining balance, and ignore all external quotes. **ISO Orders will interact with all resting orders except Tracking Orders. ISO Orders are never routed out.**	
Trade-at Intermarket Sweep Order (Trade-at ISO)	OrdType (40) = 2 TimeInForce (59) = 3 (IOC) ExecInst (18) = y (Trade-at ISO)	An immediate or cancel limit order that trades at NYSE Arca Equities only, and may trade against undisplayed liquidity at a price equal to the limit price of the inbound Trade-at ISO order. The Exchange may rely on the order sender to have satisfied all Protected Quotations better than or equal to the limit price of the Trade-at ISO order.	All
Cross order	OrdType (40) = 2 Side (54) = 8 (cross) 9 (cross short) ExecInst (18) = 6 (PNP), f 6 (PNP ISO) TimeInForce (59) = 3	A Cross Order is a two-sided order with both a buy and sell component combined that trades at a stated price for a stated size specified by the user. Cross Orders must satisfy better prices displayed in the ArcaEx Book or in the market before matching the remaining shares as a cross. Cross Orders are available from 8:00 am to 8:00 pm ET **ISO Crosses** If the Cross Order is sent during the Early Trading Session (P1), only TimeInForce = 3 is required. If the Cross Order is sent during the Core Trading Session (P2), TimeInForce = 3 and NoOfTradingSessions (386) must equal to 1 and TradingSessionID (336) must equal to P2.	All
Discretionary Order **Not Available for Pillar Phase I	OrdType (40) = 2 DiscretionInst (388) = 0 DiscretionOffset (389) = offset from displayed price. Positive for buy, negative for sell.	An order with two —price components a display price and a discretionary price — that is displayed at your specified price, not your discretionary price. When a bid or offer appears at or within your discretionary price range, your order will be matched on ArcaEx or proactively routed externally at the quoted price.	All
Market Peg	OrdType (40) = P ExecInst (18) = P (market peg) PegDifference (211) = offset to market (required)	An order with a price that will track the national best bid or offer. Pegged orders may also make use of offsets from the same side bid/offer or offsets from the contra side (peg buy offset from offer). The order is displayed in the ArcaEx Book.	Core
Primary Peg	OrdType (40) = P ExecInst (18) = R (primary peg) PegDifference (211) = offset to market (not required)** **PegDifference will not be available on Primary Peg orders for Pillar, and if sent will be rejected.	An order with a price that will track the national best bid or offer. Pegged orders may also make use of offsets from the same side bid/offer or offsets from the contra side (peg buy offset from offer). The order is displayed in the ArcaEx Book.	Core

Order Type	FIX Tags	Description	Available Sessions
Tracking Order	OrdType (40) = 2 ExecInst (18) = d *MinQty (110) = the minimum quantity desired on each fill (* = Optional)	An order that executes against outbound orders with a leaves quantity less than or equal to the size of the tracking limit order.	Core
Primary Open + order (PO+ order)	**PO+** OrdType (40) = 1 or 2 ExecBroker (76) = PO+ **PO+ MOC** OrdType (40) = 5 ExecBroker (76) = PO+ **PO+ LOC** OrdType (40) = B ExecBroker (76) = PO+	A market or limit order that is different from the original Primary On Open (POO) order type in that it will route to the primary market all day; ignoring the time of the first print and the 10am EST end time that applies to the original POO. The primary markets are identified as NYSE (N), Amex (A), and NASDAQ (Q). PO+ MOC/LOC will be routed to the primary exchange as an on close order.	Core
Primary On Open order (POO order)	OrdType (40) = 1 ExecBroker (76) = POO or 2 (Limit)	An order sent before the open that does not interact with the Arca Book. This order is sent to the primary exchange that the security is traded on.	Core
Primary Open + Ship Order (PO+S order)	OrdType (40) = 1 or 2 ExecBroker (76) = PO+S	A limit order that will route to the primary market all day (Same as PO+), but will not be sent with the DNS (Do Not Ship) Instruction on NYSE Listed Symbols. The order will be eligible for routing away at the NYSE. **This order type is only for NYSE and NYSE Amex Listed symbols.**	Core
Add Liquidity Only (ALO)	**ALO Order** OrdType (40) = 2 ExecInst (18) = 6 ExtendedExecInst (9416)= A **ISO ALO Order** OrdType (40) = 2 ExecInst (18) =f 6 ExtendedExecInst (9416) = A	The ALO order is a limit order that is posted to the NYSE Arca book in order to add liquidity. The Order assists Users in controlling their costs. Once accepted and placed in the NYSE Arca book, ALO orders will not route to away market centers. The ALO order shall be Day Only, and may not be designated as Good Till Cancel (GTC). ALO orders will be rejected when interacting with Passive Liquidity (PL) Orders. Aggressively priced ALO PNP Blind orders, that are moving (or changing price) due to an NBBO update, may result in receiving "liquidity removing." **ISO ALO Note:** If this combination is used, the order will post to the Arca book if its marketable against away markets, and will reject if the order is marketable against order(s) resting on the Arca book.	All
9:45am/3:55pm Order Types	OrdType (40) = 2 TimeInForce (59) = 0 ExecInst (18) = 7, 8, or 9	**9:45am ET Designation**–An indicator on a Day Limit order only instructing that upon receipt the order be sent directly to the primary until 9:45am ET. If the order is received after 9:45 ET, the designator is ignored and the order stays on NYSE Arca. Any unexecuted orders entered with the "9:45" designator are cancelled on the primary at 9:45am ET and returned to NYSE Arca for the remainder of the day.	Core

Order Type	FIX Tags	Description	Available Sessions
		3:55 pm ET Designation – An indicator on a Day Limit order instructing that the order be cancelled on NYSE Arca at 3:55pm ET and placed as a day order on the Primary market. ExecInst = 7 – Primary until 9:45 then move to NYSE Arca ExecInst = 8 – NYSE Arca until 3:55 then move to primary ExecInst = 9 – Primary until 9:45am ET, then move to NYSE Arca –AND- NYSE Arca until 3:55pm ET, then move to the primary. **Orders other than straight Day/Limit with ExecInst of 7, 8, or 9 will be rejected.**	
Fill Or Kill **Not Available for Pillar Phase I	TimeInForce(59) = 4 (FOK)	A limit order that is to be executed in full as soon as the order is received. If execution is not possible, the entire order will be immediately cancelled. FOK orders will not route away from NYSE Arca to other market centers.	All
Post No Preference Blind (PNP B) Order	**PNP Blind** OrdType (40) = 2 ExecInst (18) = 6 ExtendedPNP (9417) = B **PNP Blind ALO Order** OrdType (40) = 2 ExecInst (18) = 6 ExtendedExecInst (9416) = A ExtendedPNP (9417) = B	The PNP B order is an PNP Order that if, at the time of entry, would lock or cross the protected quotation of an external market, will be priced to the current PBO (for bids) or to the current PBB (for offers) and displayed one minimum price variation below the current PBO (for bids) or above the current PBB (for offers). If the PBO (PBB) re-prices higher (lower), a PNP Blind order to buy (sell) is re-priced to the updated PBO (PBB) and re-displayed one MPV below (above) the updated PBO (PBB) until it reaches its limit price. If the PBO (PBB) re-prices to be equal to or lower (higher) than the last displayed price of a PNP Blind order to buy (sell), the PNP Blind order remains priced and displayed at its last displayed price. If the PBBO changes such that a PNP Blind order would not lock or cross the PBBO of an external market, the order will be displayed as a PNP limit order **Note: PNP Blind ALO orders may not be entered as Reserve **Note: For symbols migrated to Pillar, PNP ALO, PNP Blind ALO, and PNP ISO ALO orders may not be entered as Reserve	All
Good Till Cancel (GTC)	OrdType (40) = 2 TimeInForce (59) = 1	A limit order to buy or sell at a specified price that remains active from one day to the next, until the order is either executed or canceled.	Core
Good Till Date (GTD)	OrdType (40) = 2 TimeInForce (59) = 6 ExpireTime (126) = YYYYMMDD-HH:MM:SS	A limit order to buy or sell at a specified price that remains active from one day to the next, until the designated expiration date. Note that ExpireTime is formatted in UTC (formerly GMT), and cannot be the same day as the order.	Core

NYSE Arca Equities Auction Order Types

Order Type	FIX Tags	Description	Available Sessions
Market On Open (MOO) Order	OrdType (40) = 1 (Market) Timeinforce (59) = 2	A market order that is to be executed only during the opening auction for the issue. If all or part of the order is not executed during the opening auction, the balance is cancelled. If this order type is sent in after the opening auction it will reject.	Opening Auction
Limit On Open (LOO) Order	OrdType (40) =2 (Limit) TimeInForce (59) = 2	A limit order that is to be executed only during the opening auction for the issue. If all or part of the order is not executed during the opening auction, the balance is cancelled. If this order type is sent in after the opening auction it will reject.	Opening Auction
Limit on Close (LOC)	OrdType (40) = B	A limit price order that is to be executed only during the closing auction.	Closing Auction
Market On Close (MOC)	OrdType (40) = 5	A market order that is to be executed only during the closing auction.	Closing Auction

NYSE Arca Equities Market Maker Order Types

The below order types are only for registered Market makers or firms that have agreements with market makers. If the below order types are entered by non-market makers or firms that don't have an agreement with a market maker they will be rejected.

Order Type	FIX Tags	Description	Available Sessions
"q" order market maker quote order	OrdType (40) = q	NYSE Arca Exchange rules require registered market makers to maintain two – sided quotes in all symbols that they are registered to make markets in. The q order is used to enter the two sided market. A buy and sell order must be entered.	Core

NYSE Arca Equities Retail Order Types

Order Type	Fields and Values	Description	Available Sessions
Retail Order Type 1 (IOC)	OrdType (40) = 2 TimeInForce (59) = 8	A limit order eligible to trade against Retail Price Improvement ("RPI") orders and non-displayed orders at prices superior to the PBBO. Any unfilled shares will be canceled back to the submitting party.	Core

NYSE Arca Equities Retail Order Types

Order Type	Fields and Values	Description	Available Sessions
Retail Order Type 2 (IOC)	OrdType (40) = 2 TimeInForce (59) = 9	A limit order eligible to trade against RPI orders, non-displayed orders priced better than the PBBO, and other trading orders on the NYSE ArcaBook priced at or better than the PBBO. Any unfilled shares will be canceled back to the submitting party.	Core
Retail Order Type 2 (DAY)	OrdType (40) = 2 TimeInForce (59) = A	A limit order eligible to trade against RPI orders, non-displayed orders priced better than the PBBO, and other trading orders on the NYSE ArcaBook priced at or better than the PBBO. After it interacts with RPI interest and non-displayed interest, it will interact with the NYSE ARCA book and/or will route to NMS Protected Quotations with any unfilled balance posting on the NYSE ARCA book.	Core
Retail Order Type 2 (MKT)	OrdType (40) = 1 TimeInForce (59) = A	A market order eligible to trade against RPI orders, non-displayed orders priced better than the PBBO, and other orders on the NYSE ArcaBook priced at or better than the PBBO. Any remaining portion of the Retail Order will function as a Market Order and will route to NMS Protected Quotations.	Core
Passive Liquidity RPI	OrdType (40) = 7 ExecInst (18) = 5 ExtendedExecInst (9416) = R	A non-displayed order of any size, priced better than the PBBO when entered.	Core
MidPoint Passive Liquidity RPI	OrdType (40) = 2 ExecInst (18) = M MinQty (110) = 100 or greater (Optional) ExtendedExecInst (9416) = R	An RPI order that pegs to the midpoint of the PBBO, and trades at the midpoint exclusively with Retail Orders. Minimum order size for the MPL RPI order is 100 shares.	Core

10 Appendix A: Liquidity Indicator/LastMkt Values (Tag 9730/Tag 30)

Description	Liquidity Indicator (Tag 9730)	LastMkt (Tag 30)
Add on Tape A	A	PA
Add on Tape B	A	PB
Add on Tape C	A	PC
Add Blind on Tape A	B	PA
Add Blind on Tape B	B	PB
Add Blind on Tape C	B	PC
Tape A Execution -Routed to NYSE or AMEX where the order participated in the opening or re-opening	C	PA
Tape B Execution -Routed to NYSE or AMEX where the order participated in the opening or re-opening	C	PB
Tape C Execution -Routed to NYSE or AMEX where the order participated in the opening or re-opening	C	PC
Add on Tape A- Sub Dollar	D	PA
Add on Tape B- Sub Dollar	D	PB
Add on Tape C- Sub Dollar	D	PC
Removing on Tape A - Sub Dollar	E	PA
Removing on Tape B - Sub Dollar	E	PB
Removing on Tape C - Sub Dollar	E	PC
Tape A Execution -Routed to NYSE or AMEX where the order was liquidity adding at NYSE or AMEX.	F	PA
Tape B Execution -Routed to NYSE or AMEX where the order was liquidity adding at NYSE or AMEX	F	PB
Tape C Execution -Routed to NYSE or AMEX where the order was liquidity adding at NYSE or AMEX	F	PC
Tape A Execution -Limit - Auction (LOO) - Executed in Opening, Market or Halt Auction on ARCA	G	PA
Tape B Execution -Limit - Auction(LOO) - Executed in Opening, Market or Halt Auction on ARCA	G	PB
Tape C Execution -Limit - Auction (LOO) - Executed in Opening, Market or Halt Auction on ARCA	G	PC
Tape A Execution -Market - Auction (MOO) - Executed in Opening, Market or Halt Auction on ARCA	G	PA
Tape B Execution -Market - Auction(MOO) - Executed in Opening, Market or Halt Auction on ARCA	G	PB
Tape C Execution -Market - Auction (MOO) - Executed in Opening, Market or Halt Auction on ARCA	G	PC
Routed on Tape A - Sub Dollar	H	PA
Routed on Tape B - Sub Dollar	H	PB
Routed on Tape C - Sub Dollar	H	PC
Add on Tape A- Retail	I	PA
Add on Tape B- Retail	I	PB
Add on Tape C- Retail	I	PC
Tape A Execution – Tracking Order	J	PA
Tape B Execution - Tracking Order	J	PB
Tape C Execution - Tracking Order	J	PC
Removing on Tape A - Retail	K	PA
Removing on Tape B - Retail	K	PB
Removing on Tape C - Retail	K	PC
Removing on Tape A - MPL Order	L	PA
Removing on Tape B - MPL Order	L	PB
Removing on Tape C - MPL Order	L	PC
Add on Tape A -MPL Order	M	PA
Add on Tape B -MPL Order	M	PB
Add on Tape C -MPL Order	M	PC

Description	Liquidity Indicator (Tag 9730)	LastMkt (Tag 30)
Tape A Execution - Routed to NYSE or AMEX where the order was liquidity taking at NYSE or AMEX or 3:55 Order Routed to NYSE or AMEX-Regardless of Adding, Taking, Re-Routing or Auction	N	PA
Tape B Execution - Routed to NYSE or AMEX where the order was liquidity taking at NYSE or AMEX or 3:55 Order Routed to NYSE or AMEX-Regardless of Adding, Taking, Re-Routing or Auction	N	PB
Tape C Execution - Routed to NYSE or AMEX where the order was liquidity taking at NYSE or AMEX or 3:55 Order Routed to NYSE or AMEX-Regardless of Adding, Taking, Re-Routing or Auction	N	PC
Neutral on Tape A	O	PA
Neutral on Tape B	O	PB
Neutral on Tape C	O	PC
Removing on Tape A	R	PA
Removing on Tape B	R	PB
Removing on Tape C	R	PC
Tape A Execution - Set new Arca BBO and Adding Liquidity - ARCA	S	PA
Tape B Execution - Set new Arca BBO and Adding Liquidity - ARCA	S	PB
Tape C Execution - Set new Arca BBO and Adding Liquidity - ARCA	S	PC
Tape A Execution - MOC/LOC - On NYSE	U	PA
Tape B Execution - MOC/LOC - On NYSE	U	PB
Tape C Execution - MOC/LOC - On NYSE	U	PC
Tape A Execution - Routed to NYSE or AMEX where the order was re-routed to an external market and filled	W	PA
Tape B Execution - Routed to NYSE or AMEX where the order was re-routed to an external market and filled	W	PB
Tape C Execution - Routed to NYSE or AMEX where the order was re-routed to an external market and filled	W	PC
Tape A - Execution - Routed	X	PA
Tape B - Execution - Routed	X	PB
Tape C - Execution - Routed	X	PC
Tape A Execution - MOC/LOC - On AMEX	Y	PA
Tape B Execution - MOC/LOC - On AMEX	Y	PB
Tape C Execution - MOC/LOC - On AMEX	Y	PC
Tape A Execution - MOC/LOC - On ARCA	Z	PA
Tape B Execution - MOC/LOC - On ARCA	Z	PB
Tape C Execution - MOC/LOC - On ARCA	Z	PC

*Utilized when orders are routed as day orders instead of Immediate or Cancel (IOC). The PO+ Order is an example of an order that may be routed as a Day Order.

11   Appendix B: OrderCapacity Values

Tag 47	Value	Description
Rule 80A (aka OrderCapacity)	A	Trading by an ETP Holder acting as agent on behalf of a customer or an affiliate.
	P	Trading for the proprietary account of an ETP Holder.
	R	Trading by an ETP Holder as principal that is intended to satisfy an originating customer order to buy or sell a security at the same price as the principal execution.

12   Appendix C: Pillar Reason Codes

New Reason Codes Returned as Text on Outgoing Messages

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

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

Reason Code	Description	Reason Code	Description
R000	OK	R022	Invalid TimeInForce
R001	Invalid SenderCompID	R023	Invalid Settlement Type
R002	Invalid SenderSubID	R024	Invalid FutSettDate
R003	Invalid SendingTime	R025	Invalid SymbolSfx
R004	Invalid TargetCompID	R026	Invalid Open/Close
R005	Invalid TargetSubId	R027	Invalid StopPx
R006	Invalid OnBehalfOfCompID	R028	Invalid Client ID
R007	Invalid OnBehalfOfSubID	R029	Invalid MinQty
R008	Invalid DeliverToCompID	R030	Invalid MaxFloor
R009	Invalid DeliverToSubID	R031	Invalid LocateReqd
R010	Invalid Account	R032	Invalid ExpireTime
R011	Invalid ClOrdID	R033	Invalid SecurityType
R012	Invalid ExecInst	R034	Invalid MaturityMonthYear
R013	Invalid IDSource	R035	Invalid PutOrCall
R014	Invalid OrderQty	R036	Invalid StrikePrice
R015	Invalid OrdType	R037	Invalid Covered/Uncovered
R016	Invalid Price	R038	Invalid Customer/Firm/Broker/MM
R017	Invalid Order Capacity	R039	Invalid MaturityDay
R018	Invalid Security ID	R040	Invalid PegDifference
R019	Invalid Side	R041	Invalid SellersDays
R020	Invalid Symbol	R042	Invalid TradingSessionID
R021	Invalid Text	R043	Invalid NoTradingSessions

Reason Code	Description	Reason Code	Description
R044	Invalid DiscretionInst	R077	System full (MENG_RATE_EXCEEDED)
R045	Invalid DiscretionOffset	R078	Throttle Reject
R046	Invalid PriceType	R079	Symbol Halted
R047	Invalid ClearingFirm	R080	No symbol permission
R048	Invalid ClearingAccount	R081	Price Too Far Outside
R049	Invalid PartyID	R082	MWCB Halt
R050	Invalid Optional Data	R083	Market Closed
R051	Invalid CrossID	R084	Symbol Closed
R052	Invalid StrategyIndicator	R085	LULD Cancel Instruction
R053	Invalid TradeID	R086	No Price Slide Inst During SSR
R054	Invalid NoSelfTrade	R087	Invalid StockLegGiveUp
R055	Invalid CAPStrategy	R088	Invalid NoLegs
R056	Invalid SpecialOrdType	R089	Invalid LegPositionEffect
R057	Invalid RoutingInst	R090	Invalid LegSymbol
R058	Invalid OffsetPrice	R091	Invalid LegCFICode
R059	Invalid ExtendedExecInst	R092	Invalid LegMaturityDate
R060	Invalid IntroducingBadgeID	R093	Invalid LegStrikePrice
R061	Invalid BillTo	R094	Invalid LegContractMultiplier
R062	Invalid ParentFirmClOrdID	R095	Invalid LegRatioQty
R063	Invalid ParentFirmExchangeOrdID	R096	Invalid LegSide
R064	Invalid ParentFirm	R097	Invalid LegRefID
R065	Invalid Quote Type	R098	Unsupported Order Type
R066	Invalid DisplayInd	R099	UROUT
R067	Invalid PegInd	R100	Primary Market Not Available
R068	Invalid CeilingFloorPrice	R101	No NBBO/PBBO for Peg
R069	Invalid MinPegQty	R102	No Market for Market Order
R070	Invalid DiscPriceRng	R103	Marketable Price
R071	Invalid DiscMaxVol	R104	Done for Day
R072	Invalid DicsRouteInd	R105	Credit Limit Violation
R073	Invalid MinimumTriggerVol (MTV)	R106	Cancel Remaining IOC
R074	Invalid Attributed Quote	R107	Too Late to Cancel
R075	Invalid Proactive If Locked	R108	InvalidPossResend
R076	System not available	R109	Cancel Pending

Reason Code	Description	Reason Code	Description
R110	Symbol already opened	R143	Cancelled by Primary Market
R111	Firm Bulk Cancel	R144	Pending - Imbalance Freeze
R112	OnBehalfOfCompID Blocked	R145	No RLP Permission
R113	ClearingFirm Blocked	R146	Invalid Instruction for IOC's
R114	Cancel/Replace Pending	R147	System full (CG_RATE_EXCEEDED)
R115	Modify Pending	R148	Pending Cancel - Auction Running
R116	Cannot Flip Imbalance	R149	Pending Modify - Auction Running
R117	Cannot Increase Imbalance	R150	Pending Replace - Auction Running
R118	Pending Cancel - Imbalance Freeze	R151	Invld Inst for Pending Order
R119	Pending Replace - Imbalance Freeze	R152	SSH Price below NBB on ISO
R120	Pending Modify - Imbalance Freeze	R153	IOC Received while Auction Running
R121	Pending Cancel - Routed Interest	R154	Pending - Symbol Transition
R122	Pending Replace - Routed Interest	R155	Pending Cancel - Symbol Transition
R123	Pending Modify - Routed Interest	R156	Pending Modify - Symbol Transition
R124	Pending - Auction Running	R157	Pending Replace - Symbol Transition
R125	Duplicative Order Check	R158	Invalid For Tick Pilot
R126	Cancelled by Exchange	*(R159 – R167 not applicable to UGW Binary Gateway)*	
R127	New Order	R168	Pillar Risk Mitigation
R128	Fill	R900	Invalid ProactiveDiscretionInd
R129	Partial Fill	R901	Invalid ExtendedPNP
R130	Reduced	R902	Invalid ExecBroker
R131	Replaced	R903	FastCancelRep Unsupported
R132	No Market for Cross	R904	Pending Cancel
R133	STP Cancel*	R905	Pending Replace
R134	Invalid PossDupe	R906	System full (CGA_RATE_EXCEEDED)
R135	TPID Blocked	R999	Unknown Issue Encountered
R136	Invalid Bulk Cancel		
R137	Pending Bulk Cancel		
R138	Symbol Not Open		
R139	Symbol Suspended		
R140	Symbol IPO Halt		
R141	Invld Inst During Imbalance Freeze		
R142	Invld Inst After Cutoff Time		

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