PILLAR INTEGRATED FEED - CLIENT SPECIFICATION

NYSE INTEGRATED FEED
NYSE AMERICAN INTEGRATED FEED
NYSE ARCA INTEGRATED FEED
NYSE CHICAGO INTEGRATED FEED
NYSE NATIONAL INTEGRATED FEED

Version	Date
2.5	May 16, 2022

PREFACE

DOCUMENT HISTORY

VERSION NO.	DATE	CHANGE DESCRIPTION
2.2	12/01/2018	• Updates to Auctions and the Imbalances msg for NYSE under Pillar. • Renamed Closing Only Clearing Price to Auction Only Clearing Price. The 3 new trailing fields in the Imbalance message contain only default values in non-NYSE markets.
2.2a	03/08/2019	• Updates to NYSE Imbalance start time • Defaulted the Significant imbalance field in Msg Type 105
2.3	06/14/2019	Added support for NYSE Chicago Integrated Feed - product ID, hours of operation, etc… (Go Live 11/2019)
2.3a	10/25/2019	Additional clarifications/cleanup post Tape A migration to Pillar. • Corrrected 4pm security status message for NYSE. • Clarified FirmID field in the AddOrder message (Msg Type 100) • Clarified Position Change field in the Modify (Msg Type 101) • Clarified DBExecID field in Execution Message (Msg Type 103). • Removed implementation note on RPI message (Msg Type 114). • Clarified field definitions for CBCP, AICP on Imbalance Msg (Msg Type 105) • Corrected Core opening time in Appendix A.
2.3b	01/14/2021	Updated that the Exchange would disseminate Auction Imbalance Information if a security is an IPO or Direct Listing.
2.3c	07/30/2021	Updated the MOC LOC Cutoff timer to 10 minutes in Section 14.1
2.3d	08/12/2021	Updated the Arca - Order Entry Start Time to 2:30am in Section 1.3
2.4	12/17/2021	Addition of Trade Conditions 1-4 on msgtype 103 and msgtype 110, in place of DBEXECID - all markets in Q1 2022
2.4a	03/04/2022	Updated ParitySplits fieldname to be 'Reserved' and for future use. Msgtypes 100, 101, 102, 103, 104 and 106. Updated IP address sheet link in Reference Materials.

VERSION NO.	DATE	CHANGE DESCRIPTION
2.4b	03/21/2022	Updated NYSE logo and document format. No content changes.
2.5	05/16/2022	Msgtype 101 - Updated Modify message 'Reserved 1' field (byte 33) to 'Side' (ASCII) Msgtype 104 - Updated Replace message 'Reserved 1' field (byte 40) to 'Side' (ASCII)

REFERENCE MATERIAL

The following lists the associated documents, which either should be read in conjunction with this document or which provide other relevant information for the user:

- Common Client Specification
- ICE Global Network
- NYSE Symbology
- IP Addresses

CONTACT INFORMATION

Service Desk

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FURTHER INFORMATION

For additional information about the product, visit the Integrated Feed Product Page.

For updated capacity figures, visit the Market Data capacity page.

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1. Integrated Feed

1.1 OVERVIEW

The Integrated Feed provides real-time market data in a unified view of events, in sequence, as they appear on the Pillar matching engines. The Integrated Feed includes depth of book order data, last sale data, and opening and closing imbalance data. The Integrated Feed also includes security status updates (e.g., trade corrections and trading halts) and stock summary messages.

All message types defined in this document appear only in the main publication channels, except:

- The Imbalance and Add Order Refresh message types also appear in the Refresh channels.
- The Stock Summary message appears only in a dedicated Stock Summary channel.

See the Common Client Specification for details on Time Reference and Symbol Index Mapping messages, and Order ID and Price field formats.

1.2 CONTROL MESSAGE TYPES USED IN THE FEED

See the Common Client Specification for details on all control messages.

MSG TYPE	DESCRIPTION	PUBLISHER CHANNELS	REQUEST CHANNEL	REFRESH CHANNELS
1	Sequence Number Reset	x		x
2	Time Reference	x		x
3	Symbol Index Mapping	x		x
10	Retransmission Request		client	
11	Request Response		server	
12	Heartbeat Response		client	
13	Symbol Index Mapping Request		client	
15	Refresh Request		client	
31	Message Unavailable		server	
32	Symbol Clear	x		
34	Security Status Message	x		x
35	Refresh Header Message			x

1.3 MESSAGE PUBLICATION TIMES

Scheduled trading session times on normal and early-close days for all NYSE markets can be found here.

1.3.1 Integrated Feed Message Types and Hours

Hours are for guidelines use only (e.g. publication times for NYSE Tape A are not exactly at 4:00pm EST, rather when the stock is closed).

MSG TYPE	DESCRIPTION	HOURS	
100	Add Order Message	**NYSE Arca** 2:30am – 8:00pm **NYSE American** 6:30am – 8:00pm **NYSE Chicago** 6:30am – 8:00pm **NYSE National** 6:30am – 8:00pm **NYSE Tape A, B & C** 6:30am – 4:00pm	
101	Modify Order Message		
104	Replace Order Message		
102	Delete Order Message		
112	Trade Cancel Message		
111	Cross Trade Message		
113	Cross Correction Message		
114	Retail Price Improvement Msg		
106	Add Order Refresh Message		
105	Imbalance Message	**See Appendix A**	
103	Order Execution Message	**NYSE Arca** 4:00am – 8:00pm **NYSE American** 7:00am – 8:00pm **NYSE National** 7:00am – 8:00pm	**NYSE Tape A** 9:30am – 4:00pm **NYSE Tapes B&C** 7:00am – 4:00pm **NYSE Chicago** 7:00am – 8:00pm
110	Non-Displayed Trade Message		
223	Stock Summary Message		

1.3.2 Control Message Types:

Refer to the Common Client Specification for details

MSG TYPE	DESCRIPTION	HOURS	
1	Sequence Number Reset	12:15am – 8:00pm	
2	Time Reference		
3	Symbol Index Mapping		
32	Symbol Clear		
34	Security Status Message	**NYSE Arca** 12:15am – 8:00pm	**NYSE Tape A** 12:15am – 4:00pm
		NYSE American 12:15am – 8:00pm	**NYSE Tapes B&C** 12:15am – 4:00pm
		NYSE National 12:15am – 8:00pm	**NYSE Chicago** 12:15am – 8:00pm

2. Add Order Message – Msg Type 100

An Add Order message is published when a new visible order has been received and added to the book. The Order ID is assigned by the matching engine and is good for current day only. If an order, which was previously displayed, gets routed to an away market and upon returning unexecuted there is no residual of this order, another AddOrder message will be published with the same order ID.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 39 bytes
Msg Type	2	2	Binary	The type of message: 100 – Add Order Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	8	Binary	The unique ID assigned by the matching engine to this order . Can be used to match this message to the gateway Order Report.
Price	24	4	Binary	The order price. Use with the Price Scale from the symbol-mapping index.
Volume	28	4	Binary	The order quantity in shares
Side	32	1	ASCII	The side of the order (Buy/Sell). Valid values: • 'B' – Buy • 'S' – Sell
FirmID	33	5	ASCII	The market participant's firm ID. Blank-filled if a firm ID was not specified and/or if the order is not marked as Attributed.
Reserved 1	38	1	Binary	Defaulted to 0. Future use only.

3. Modify Order Message – Msg Type 101

A Modify Order message is sent when the price or volume of an order is changed due to an event other than a cancel-replace, or full or partial execution. The content of the price and volume fields represent the new values after modification.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 35 bytes
Msg Type	2	2	Binary	The type of message: 101 – Modify Order Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	8	Binary	The unique ID assigned by the matching engine to the order to be modified
Price	24	4	Binary	The new order price. Use the Price scale from the symbol mapping index.
Volume	28	4	Binary	The new order quantity in shares.
PositionChange	32	1	Binary	Currently defaulted to 0. • '0' – Kept position in book • '1' – Lost position in book If the price of the Modify Order didn't change, order always keeps the position in the book. If the price of the Modify Order message changed, the order always loses position.
Side	33	1	ASCII	The side of the order. Valid values: • 'B' – Buy • 'S' – Sell
Reserved 2	34	1	Binary	Defaulted to 0. Future use only.

4.   Delete Order Message – Msg Type 102

A Delete Order message is published when an order is taken off of the book for any reason except for full execution, in which case an Order Execution message is sent. If the order is replaced, a delete order message will not be published, rather a Replace Order message.

Immediately before a trading session changes (eg: Early session to Core session), all orders that were submitted for the current or current+previous sessions are explicitly deleted with a Delete Order message.

Please note that when trading in a security is closed for the day, a Security Status 'X' is sent and unexecuted orders are cancelled, but explicit Delete Order Messages are not sent.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 25 bytes
Msg Type	2	2	Binary	The type of message: 102 – Delete Order Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	8	Binary	The unique ID assigned by the matching engine to the existing order to be deleted
Reserved 1	24	1	Binary	Defaulted to 0. Future use only.

5. Order Execution Message – Msg Type 103

An Order Execution message is sent when an order is partially or fully executed. If the Price field is different from the price of the order, any remaining shares keep their original price. If the Volume field equals the number of shares previously remaining in the order, then the order has been fully executed and should be removed from the book.   If the order has been partially executed, further Order Execution messages for this Order ID may be published.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 42 bytes
Msg Type	2	2	Binary	The type of message: 103 – Order Execution Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	8	Binary	The unique ID assigned by the matching engine to the partially or fully executed order .
TradeID	24	4	Binary	Unique ID assigned by the matching engine to this execution. Used by any subsequent Trade Cancel message to identify this execution. Can be matched to the Deal ID field in the gateway Execution Report.
Price	28	4	Binary	The execution price of this trade. Use the Price Scale from the symbol mapping index.
Volume	32	4	Binary	The executed quantity in shares.
PrintableFlag	36	1	Binary	• 0 = Not Printed to the SIP • 1 = Printed to the SIP All individual executions (Execution messages and Non-Displayed Trade messages) will have Printable Flag set to 0 for auction trades, so that the auction volume is not double counted.
Reserved 1	37	1	Binary	Defaulted to 0. Future use only.

TradeCond1	38	1	ASCII	Settlement related conditions. Valid values: • @ – Regular Sale • 'C' – Cash (Chicago only) • 'N' – Next Day Trade (Chicago only)
TradeCond2	39	1	ASCII	The reason for Trade Through Exemptions. Valid values: • ' ' – N/A (0x20) • 'F' – Intermarket Sweep Order • 'O' – Market Center Opening Trade (Arca, American and NYSE only) • '5' - Reopening Trade (Arca, American and NYSE only) • '6' – Market Center Closing Trade (Arca, American and NYSE only) • '7' – Qualified Contingent Trade (Chicago only)
TradeCond3	40	1	ASCII	Extended hours/sequencing related conditions. Valid values: • ' ' – (space, or 0x20) N/A • 'T' – Extended Hours Trade • 'U' – Extended Hours Sold (Out of Sequence) • 'Z' – Sold
TradeCond4	41	1	ASCII	SRO Required Detail. Valid values: • ' ' – (space, or 0x20) N/A • 'I' – Odd Lot Trade • 'V' – Contingent Trade (Chicago only)

6. Replace Order Message – Msg Type 104

A Replace Order message is published when a cancel/replace order is received and executed. The sitting order is replaced with a new one containing the same symbol, side and attribution, a new Order ID, and the price and size specified. The sitting order must be removed from the book and replaced with the new order.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 42 bytes
Msg Type	2	2	Binary	The type of message: • 104 – Replace Order Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	8	Binary	The unique ID assigned by the matching engine to the existing order to be replaced
NewOrderID	24	8	Binary	The new Order ID of the replacement order
Price	32	4	Binary	The new order price. Use the Price scale from the symbol mapping index.
Volume	36	4	Binary	The new order quantity in shares.
Side	40	1	ASCII	Side of the order. Valid values: • 'B' - Buy • 'S' - Sell
Reserved 2	41	1	Binary	Defaulted to 0. Future use only.

7. Imbalance Message – Msg Type 105

Imbalance messages are published once a second during auctions to update price and volume information. If there is no change to the calculated fields, no message will be generated. See Information on Auctions for details on the auction process in the NYSE, Arca and American markets.

FIELD NAME	OFFSET	SIZE	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 73 bytes
Msg Type	2	2	Binary	This field identifies the type of message. 105 – Imbalance Message
SourceTime	4	4	Binary	The time when this msg was generated in the order book, in secs since 1/1/1970 00:00:00 UTC
SourceTimeNS	8	4	Binary	The nanosecond offset from the Source Time
SymbolIndex	12	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	16	4	Binary	The sequence number of this message in the set of all messages for this symbol
ReferencePrice	20	4	Binary	The Reference Price is the notional likely price of the auction trade. See Information on Auctions for details. For non-NYSE markets, the Reference Price is used to calculate the Indicative Match Price.
PairedQty	24	4	Binary	For non-NYSE markets, the number of shares paired off at the Indicative Match Price. For NYSE, the number of shares paired off at the Reference Price.
TotalImbalanceQty	28	4	Binary	For non-NYSE markets, the total imbalance quantity at the Indicative Match Price. For NYSE, the total imbalance quantity at the Reference Price. When Auction Type=P (NYSE only), this field will be set to the Extreme Order Imbalance quantity.
MarketImbalanceQty	32	4	Binary	The total market order imbalance quantity at the Indicative Match Price. For NYSE, unused and defaulted to 0.
AuctionTime	36	2	Binary	Projected Auction Time (hhmm)

FIELD NAME	OFFSET	SIZE	FORMAT	DESCRIPTION
AuctionType	38	1	ASCII	• 'O' – Early Opening Auction (non-NYSE only) • 'M' – Core Opening Auction • 'H' – Reopening Auction (Halt resume) • 'C' – Closing Auction • 'P' – Extreme Closing Imbalance (NYSE only) • 'R' – Regulatory Closing Imbalance (NYSE only)
ImbalanceSide	39	1	ASCII	The side of the TotalImbalanceQty • 'B' – Buy side • 'S' – Sell side • ' ' - (space or 0x20) – No imbalance
ContinuousBook ClearingPrice	40	4	Binary	For non-NYSE markets, the price at which all interest on the book can trade, including auction and imbalance offset interest, and disregarding auction collars. For NYSE, the price closest to the reference price where the imbalance is 0. For regulatory imbalances, or if a continuous book clearing price is not reached, this field is defaulted to 0.
AuctionInterest ClearingPrice	44	4	Binary	For non-NYSE markets, the price at which all eligible auction-only interest would trade, subject to auction collars. For the NYSE closing auction only, the price closest to the reference price where the imbalance of closing-only interest is 0. If a closing-only clearing price is not reached, this field is defaulted to 0.
SSRFilingPrice	48	4	Binary	For non-NYSE markets, not supported and defaulted to 0. For NYSE non-Regulatory imbalances, if a Sell Short Restriction is in effect, the price at which Sell Short interest will be filed.
IndicativeMatchPrice	52	4	Binary	For non-NYSE markets, the price at which the highest number of shares would trade, subject to auction collars. It includes the non-displayed quantity of Reserve Orders. See Information on Auctions for details. For NYSE, set to 0.

FIELD NAME	OFFSET	SIZE	FORMAT	DESCRIPTION
UpperCollar	56	4	Binary	If the IndicativeMatchPrice is not strictly between the UpperCollar and the LowerCollar, special auction rules apply. See Rule 7.35 for details For NYSE, set to 0
LowerCollar	60	4	Binary	If the IndicativeMatchPrice is not strictly between the UpperCollar and the LowerCollar, special auction rules apply. See Rule 7.35 for details. For NYSE, set to 0
AuctionStatus	64	1	Binary	Indicates whether the auction will run • 0 - Will run as always for Open and Close • 1 - Will run, interest exists inside or at the collars or is fully paired off • 2 – Will not run because there is an imbalance through the collars • 3 – Will not run, will transition to the Closing Auction instead
FreezeStatus	65	1	Binary	Freeze status is the Imbalance Freeze status - MOC/LOC orders are accepted on the side opposite to the Reg imbalance. • 0 - Imbalance freeze not in effect • 1 - Imbalance freeze is in effect NYSE market has an imbalance freeze for the closing. Arca market has imbalance freeze for opening and re-opening.
NumExtensions	66	1	Binary	Number of times the halt period has been extended For NYSE, set to 0.
Unpaired Qty	67	4	Binary	For NYSE only, during the Closing Auction, the number of unpaired shares priced at or better than the Reference Price. For non-NYSE markets, 0.

FIELD NAME	OFFSET	SIZE	FORMAT	DESCRIPTION
Unpaired Side	71	1	ASCII	For NYSE only, the side of the Unpaired Qty • 'B' - buy side • 'S' - sell side • ' ' - (space or 0x20) - not applicable
Significant Imbalance	72	1	ASCII	Valid values: • 'Y' - the current Imbalance is significant • ' ' - (space or 0x20) - default value till a future implementation date.

8. Add Order Refresh Message – Msg Type 106

The Add Order Refresh message can be sent in either of two contexts:

1) If a client sends a Refresh Request to the Pillar Request Server, an Add Order Refresh message is sent over the Refresh channels as part of the refresh response for every order currently sitting on the book.

2) If NYSE Operations refreshes a symbol, a Symbol Clear message is published, followed by a full refresh. The refresh includes an Add Order Refresh message for every order currently sitting on the book of the symbol.

See the Common Client Specification for details on Time Reference and Symbol Index Mapping messages, and Order ID and Price field formats.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 43 bytes
Msg Type	2	2	Binary	The type of message: 106 – Add Order Refresh Message
SourceTime	4	4	Binary	The time when this msg was generated in the order book, in seconds since Jan 1, 1970 00:00:00 UTC.
SourceTimeNS	8	4	Binary	The nanosecond offset from the SourceTime
SymbolIndex	12	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	16	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	20	8	Binary	The unique ID assigned by the matching engine to this order
Price	28	4	Binary	The order price. Use the Price scale from the symbol-mapping index.
Volume	32	4	Binary	The order quantity in shares.
Side	36	1	ASCII	The side of the order (Buy/sell). Valid values: 'B' – Buy 'S' – Sell
FirmID	37	5	ASCII	The participant's firm ID, or blanks if firm ID was not specified OR if the orer is not marked as attributed.
Reserved 1	42	1	Binary	Defaulted to 0. Future use only.

9. Non-Displayed Trade Message – Msg Type 110

An Non Displayed Trade message is sent as a result of a match between two non-displayed orders.

Customers who are only interested in building a book of displayed orders may safely ignore Non-Displayed Trade messages. Customers who are creating statistics or displays requiring the full record of trades in this market will need to process Non-Displayed Trade messages.

If a MOC order executes against MOC or LOC, then a Non-Displayed Trade message is published. If a MOC order was executed against a displayed order, only an 'Order Execution' message for the displayed order will be published.

See the Common Client Specification for details on Time Reference and Symbol Index Mapping messages, and Order ID, Trade ID, and Price field formats.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 33 bytes
Msg Type	2	2	Binary	The type of message: 110 – Non-Displayed Trade Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
TradeID	16	4	Binary	Unique ID assigned by the matching engine to this trade event. Used by any subsequent Trade Cancel message to identify this execution. Can be matched to the Deal ID field in the gateway Execution Report.
Price	20	4	Binary	The execution price of the trade. Use the Price scale from the symbol mapping index.
Volume	24	4	Binary	Volume of the trade in shares
PrintableFlag	28	1	Binary	• 0 = Not Printed to the SIP • 1 = Printed to the SIP
TradeCond1	29	1	ASCII	Settlement related conditions. Valid values: • '@' – Regular Sale • 'C' – Cash (Chicago only) • 'N' – Next Day Trade (Chicago only)

TradeCond2	30	1	ASCII	The reason for Trade Through Exemptions. Valid values:
				• ' ' – (space or 0x20) • 'F' – Intermarket Sweep Order • 'O' – Market Center Opening Trade (Arca, American and NYSE only) • '5' - Reopening Trade (Arca, American and NYSE only) • '6' – Market Center Closing Trade (Arca, American and NYSE only) • '7' – Qualified Contingent Trade (Chicago only)
TradeCond3	31	1	ASCII	Extended hours/sequencing related conditions. Valid values:
				• ' ' – (space or 0x20) • 'T' – Extended Hours Trade • 'U' – Extended Hours Sold (Out of Sequence) • 'Z' – Sold
TradeCond4	32	1	ASCII	SRO Required Detail. Valid values:
				• ' ' – (space or 0x20) • 'I' – Odd Lot Trade • 'V' – Contingent Trade (Chicago only)

10. Cross Trade Message – Msg Type 111

A Cross Trade message is published on completion of a crossing auction, and shows the bulk volume that traded in the auction. The Reason Code field indicates the auction type. Additionally, a non-printable Order Execution or Non-Displayed Trade message will be published for each order that traded.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 29 bytes
Msg Type	2	2	Binary	The type of message: 111 – Cross Trade Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
CrossID	16	4	Binary	Unique identifier for this Cross Trade. Used in Cross Correction message to identify the Cross Trade to correct.
Price	20	4	Binary	The execution price. Use the Price scale from the symbol mapping index.
Volume	24	4	Binary	Volume executed in shares
CrossType	28	1	ASCII	Reason for the crossing auction. Valid values: • 'E' – Market Center Early Opening Auction • 'O' – Market Center Opening Auction • '5' – Market Center Reopening Auction • '6' – Market Center Closing Auction

11. Trade Cancel Message – Msg Type 112

In the event that an earlier trade has been reported in error, a Trade Cancel message is sent. This occurs whether the initial report was an Order Execution or a Non-Displayed Trade message.

Note that since Trade Cancel messages only affect trades that occurred in the past, customers who are only interested in building a book may safely ignore them.

Customers who are building a complete record of today's trades should remove the cancelled trade from their records and subtract its volume from any statistics.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 20 bytes
Msg Type	2	2	Binary	The type of message: • 112 – Trade Cancel Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
TradeID	16	4	Binary	The TradeID of the original Trade or Execution message to be cancelled.

12. Cross Correction Message – Msg Type 113

In the event that an earlier Cross Trade has been reported in error, a Cross Correction message is sent.

Note that since Cross Correction messages only affect cross auctions that occurred in the past, customers who are only interested in building a book may safely ignore them.

Customers who are building a complete record of current day volume should remove the previously reported volume from their statistics and add the volume of the Cross Correction to them.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 24 bytes
Msg Type	2	2	Binary	The type of message: 113 – Cross Correction Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
CrossID	16	4	Binary	The CrossID of the original Cross Trade message to be corrected.
Volume	20	4	Binary	The corrected volume of Cross Trade message.

13. Retail Price Improvement Message – Msg Type 114

Published when RPI interest (hidden retail price improvement interest) is added or removed between the best bid and best offer price. When all RPI interest for this security is removed from the book, an RPI message with RPIIndicator = ' ' (space character) is published.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 17 bytes
Msg Type	2	2	Binary	The type of message: • 114 – Retail Price Improvement Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
RPIIndicator	16	1	ASCII	The side(s) where Retail Price Improvement orders (RPI orders) exist. Valid values correspond to CQS values: • ' ' – (space or 0x20) means no retail interest (default) • 'A' – Retail interest on the bid side • 'B' – Retail interest on the offer side • 'C' – Retail interest on the bid and offer sides.

14. Stock Summary Message – Msg Type 223

A Stock Summary message per symbol is sent every 60 seconds, on a separate Stock Summary channel from the main feed.

The message is sent regardless of whether there has been a change to the symbol in the last 60 seconds or not.

See the Common Client Specification for details on the Price field format.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 36 bytes
Msg Type	2	2	Binary	The type of message: • 223 – Stock Summary Message
SourceTime	4	4	Binary	The time when this msg was generated in the order book, in seconds since Jan 1, 1970 00:00:00 UTC.
SourceTimeNS	8	4	Binary	The nanosecond offset from the SourceTime
SymbolIndex	12	4	Binary	The ID of the symbol in the Symbol Index msg
HighPrice	16	4	Binary	The exchange high price of this stock for the day. Use the Price Scale in the symbol index msg.
LowPrice	20	4	Binary	The exchange Low price of this stock for the day. Use the Price Scale in the symbol index msg.
Open	24	4	Binary	The exchange Opening price of this stock for the day. Use the Price Scale in the symbol index msg.
Close	28	4	Binary	The exchange Closing price of this stock for the day. Use the Price Scale in the symbol index msg.
TotalVolume	32	4	Binary	The exchange cumulative volume for the stock throughout the day.

APPENDIX A: Information on Auctions

14.1 NYSE AUCTIONS

The NYSE market conducts auctions for NYSE-listed (Tape A) symbols only.

As a part of the auction process, Imbalance messages are published every second if there is any change from the previous second.

Note: During an auction, in calculating the imbalance at a price point on the book, NYSE considers the following to be an imbalance:

- market orders
- interest whose price is better than the book price point

AUCTION TYPE	DESCRIPTION
Opening Auction (M) **and** **Re-Opening Auction (H)**	**Interest Included** ▪ All electronic interest eligible to trade in the opening auction ▪ DMM interest as needed to offset the imbalance **Order Cancellation** ▪ Orders can be cancelled at any time up to the conclusion of the auction **Reference Price Calculation** The Reference Price is ▪ The consolidated last sale* if no Mandatory Indication has been published ▪ The consolidated last sale* if it is within the indication range ▪ The indication low price if it is higher than the consolidated last sale* ▪ The indication high price it is lower than the consolidated last sale* * If there's no consolidated last sale price, the previous close price is used

Closing Auction (C)	**Interest Included**
	
	▪ For Paired Quantity, Unpaired Quantity, and Total Imbalance Quantity:
	  ○ MOC and LOC orders
	  ○ Imbalance offset orders
	  ○ Closing D orders
	
	▪ For Continuous Book Clearing Price:
	
	  ○ All electronic interest eligible to trade in the closing auction
	  ○ DMM interest as needed to offset the imbalance
	
	▪ For Auction Interest Clearing Price:
	
	  ○ MOC and LOC orders
	  ○ Imbalance offset orders

AUCTION TYPE	DESCRIPTION
	Order Cancellation ▪ Orders can be cancelled any time during the auction period, except for MOC, LOC and Imbalance offset orders, which can be cancelled only up to 10 minutes before the scheduled closing time. **Reference Price Calculation** The Reference Price is ▪ The NYSE last sale if it is at or within the NYSE best quote ▪ The NYSE best bid if the NYSE best bid is higher than the NYSE last sale ▪ The NYSE best offer if the NYSE best offer is lower than the NYSE last sale
Regulatory Closing Auction (R)	**Interest Included** ▪ MOC and LOC orders **Reference Price Calculation** ▪ The Reference Price is the NYSE last sale* * If there's no NYSE last sale price, the NYSE previous close price is used
Extreme Imbalance Closing Auction (P)	**Interest Included** ▪ All electronic interest eligible to trade in the closing auction **Reference Price Calculation** ▪ The Reference Price is the NYSE last sale* * If there's no NYSE last sale price, the NYSE previous close price is used

14.2 NYSE ARCA AND NYSE AMERICAN AUCTIONS

Three single-price auctions are conducted during the day: the Early Opening Auction, the Core Opening Auction and the Closing Auction. As a part of the auction process, Imbalance messages are published every second if there is any change from the previous second.

This description covers normal cases. For full detail on exception cases, see Rule 7.35.

Indicative Match Price Details

- The Indicative Match Price is the price that maximizes executable volume of auction-eligible shares, subject to Auction Collars.
- It includes the non-displayed quantity of Reserve Orders.
- If two or more prices maximize executable volume equally, in an effort to maintain continuity, the Indicative Match Price is whichever price is closest to the Reference Price.
- The final auction execution price is the Indicative Match Price at auction time.

Note: During an auction, in calculating the imbalance at a price point on the book, NYSE Arca and American consider the following to be an imbalance:

- Market orders
- Any interest whose price is at or better than the book price point

Imbalance Calculation

AUCTION TYPE	DESCRIPTION
Early Opening Auction (O)	**Interest Included** 1. Limit Orders designated for the Early Trading Session. 2. During the last minute before the Early Opening Auction time, the non-displayed quantity of Reserve Orders designated for the Early Open Auction is included in the Matched Volume and Total Imbalance Volume. **Order Cancellation** Orders can be cancelled at any time up to the conclusion of the auction. **Reference Price** - The Reference Price is normally the listing market's previous Official Closing Price. See Rule 7.35 for full detail. Unexecuted session 1 eligible orders become eligible for the Early Session immediately upon conclusion of the Early Opening Auction.
Core Opening Auction (M) and **Re-Opening Auction (H)**	**Interest Included** 1. Limit, Market, MOO, LOO and Primary Peg orders 2. During the last 5 seconds before the Core Opening Auction time, the non-displayed quantity of Reserve Orders is included in the Matched Volume and Total Imbalance Volume.

AUCTION TYPE	DESCRIPTION
	Order Cancellation Orders can be cancelled any time during the auction, except for MOO and LOO orders which can be cancelled only up to 1 minute before the conclusion of the auction. **Reference Price** The Reference Price is normally the midpoint of the NBBO. See Rule 7.35 for full detail.
Closing Auction (C)	**Interest Included** 1. Limit, Market, MOC, LOC and Primary Peg orders 2. During the last minute before the Closing Auction time, the non-displayed quantity of Reserve Orders is included in the Matched Volume and Total Imbalance Volume. **Reference Price** ▪ The Reference Price is normally the Consolidated Tape last sale. If the price closest to the Reference Price would trade through the exchange book, the indicative match price will be the best price available where no trade through occurs. See Rule 7.35 for full detail.

14.3 IMBALANCE MESSAGE PUBLICATION TIMES

For all markets, the initial publication of Symbol Index Mapping messages occurs shortly after system startup at approximately 12:15am ET.

Scheduled trading session hours on normal and early-close days for all NYSE markets can be found here.

Regularly scheduled auctions occur at the following times. Trading halts and re-opens can occur anytime during any session. Trading halts can last from one session into the next.

During auction periods, Imbalance messages are published every second if there is any change from the last publication.

All times are US Eastern Time

DESCRIPTION	MARKET	NORMAL AUCTION PERIOD
Early Opening Auction	Arca	3:30am - 4:00am ET
	American	7:00am - 9:30am ET
Core Opening Auction	Arca American	8:00am - 9:30am ET
	NYSE	8:00am ET - the stock opens
Closing Auction	Arca American	3:00pm - 4:00pm ET
	NYSE	3:50pm ET - the stock closes

On early closing days for all ARCA and American, the Closing auction runs from 12:00pm to 1:00pm. For NYSE, the closing auction run from 12:50 until the stock closes.

APPENDIX B: Product IDs

Refresh and Retransmission Request messages must specify a Product ID. The correct product IDs for the Integrated Feeds:

EXCHANGE	PRODUCT ID	DESCRIPTION
NYSE	11	NYSE Integrated Feed
NYSE American	59	NYSE American Integrated Feed
NYSE National	109	NYSE National Integrated Feed
NYSE Arca	157	NYSE Arca Integrated Feed
NYSE Chicago	209	NYSE Chicago Integrated Feed