NYSE TECHNOLOGIES.

Document title

XDP TRADES CLIENT SPECIFICATION

NYSE TRADES. NYSE ARCA TRADES, NYSE MKT TRADES

Version
2.1

Date
29 November 2013

PREFACE

DOCUMENT HISTORY

The following table provides a description of all changes to this document.

VERSION NO.	DATE	CHANGE DESCRIPTION
0.1	09/29/10	Initial version
0.2	10/21/10	Revised based on development feedback
0.3	11/9/10	Revised based on QA feedback
0.4	12/3/10	Correction to the SourceTime on the Stock Summary Message
1.0a	12/15/10	Initial distribution
1.0b	2/17/11	Changes to Symbol Index Map message Addition of the vendor mapping message Addition of the LiqudityFlag
1.0c	3/21/11	Clarification on the vendor mapping message
1.0d	3/23/11	Addition of the Ticker Designation field to the FTP symbol mapping file.
1.0e	9/29/11	– Split original spec into two and created a new "XDP Common Client Spec" – Removed the reference to the line handler – Format changes throughout
1.1	01/11/12	Addition of chapter on Product ID.
1.2	03/16/12	Added a value of '0x04' (No Liquidity added) to the 'LiquidityIndicatorFlag' field in Table 4 (Trade Message Fields).
1.3	05/16/2012	Changed name to NYSE MKT throughout
	08/14/2012	Rebranded with new NYSE Technologies template
1.4	06/14/2013	Amended section 2. Trade Message – Msg Type '220' Ask Price, Ask Volume, Bid Price, Bid Volume
1.5	07/12/2013	Overview amended. Updates to section 2.1 Message Structure – Ask/Bid Price/Volume fields
1.6	09/12/2013	Addition of '9' – Corrected Last Sale Price in Table 11, TradeCond2. Updated the description "I" in Table 11 to Odd Lot Trade
2.0	10/16/2013	Trade Message MSG TYPE '220' - Section 2.1 – Message Structure - Updated the following fields: TradeCond1, TradeCond2, TradeCond3, TradeCond4, TradeThroughExempt, AskPrice, AskVolume, BidPrice, BidVolume. Section 2.1 – Message Structure - New fields added:

VERSION NO.	DATE	CHANGE DESCRIPTION
		TransactionID, Tick, SellerDays, StopStockIndicatorsTrade Cancel or Bust Message MSG TYPE '221' - Section 3.1 – Message Structure – Updates to the following fields:
		SymbolIndex, OriginalTradeID
		Trade Correction Message MSG TYPE '222' - Section 4.1 – Message Structure – Updates to the following fields:
		SymbolIndex, OriginalTradeID, TradeCond1, TradeCond2, TradeCond3, TradeCond4.
		Section 4.1 – Message Structure – New fields added:
		TransactionID, Tick, SellerDays, StopStockIndicator
		Stock Summary Message MSG TYPE '223' - Section 5.1 – Message Structure – Updates to the following field:
		SymbolIndex
2.1	11/29/2013	Added notes to table 4 in section 2.1 and table 6 in section 4

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:

■ SFTI US Technical Specification

■ SFTI US Customer Guide

■ NYSE Symbology

CONTACT INFORMATION

Service Desk

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FURTHER INFORMATION

For additional product information please visit, http://www.nyxdata.com

For updated capacity figures, visit our capacity pages at: http://www.nyxdata.com/capacity

For details of IP addresses, visit our IP address pages at: http://www.nyxdata.com/ipaddresses

For a full glossary, visit: http://www.nyxdata.com/glossary/

CONTENTS

1.   TRADES INFORMATION

1.1   OVERVIEW

This real-time low latency product provides trade data for all traded securities on respective NYSE exchanges. This trade data is intended for algorithmic traders and anyone who uses high frequency trading applications which require a direct unconsolidated feed and timestamps provided directly from the Exchange matching engines.

1.2   PUBLICATION TIMES

Table 1 Normal Trading Days (All times are EST)

MSGTYPE	DESCRIPTION	NYSE / NYSE MKT	NYSE ARCA
220	Trade Message	9:30am – 4:00pm	4:00am– 8:00pm
221	Trade Cancel or Bust Message	9:30am – 4:00pm	4:00am– 8:00pm
222	Trade Correction Message	9:30am – 4:00pm	4:00am– 8:00pm
223	Stock Summary Message	9:30am – 4:00pm	4:00am– 8:00pm

Table 2 Early Closing Days (All times are EST)

MSGTYPE	DESCRIPTION	NYSE / NYSE MKT	NYSE ARCA
220	Trade Message	9:30am – 1:00pm	4:00am – 1:00pm
221	Trade Cancel or Bust Message	9:30am – 1:00pm	4:00am – 1:00pm
222	Trade Correction Message	9:30am – 1:00pm	4:00am – 1:00pm
223	Stock Summary Message	9:30am – 1:00pm	4:00am – 1:00pm

1.3   CONTROL MESSAGE TYPES

Table 3 Control Message Types used in the Data Feed

MSGTYPE	DESCRIPTION	NYSE	NYSE MKT	NYSE ARCA
1	Sequence Number Reset	x	x	x
2	Time Reference Message	x	x	x
3	Symbol Index Mapping	x	x	x
4	Vendor Mapping Message	x	x	x
5	Option Series Index Mapping			
10	Retransmission Request Message	x	x	x
11	Request Response Message	x	x	x
12	Heartbeat Response Message	x	x	x

MSGTYPE	DESCRIPTION	NYSE	NYSE MKT	NYSE ARCA
13	Symbol Index Mapping Request Message	x	x	x
15	Refresh Request Message			
31	Message Unavailable	x	x	x
32	Symbol Clear	x	x	x
33	Trading Session Change	x	x	x
34	Security Status Message	x	x	x
35	Refresh Header Message			

2.   TRADE MESSAGE – MSG TYPE '220'

The trade messages provided on the Trades feed are the same Trade messages provided to the CTA.

2.1   MESSAGE STRUCTURE

Table 4 describes the body fields of a Trade message, MsgType '220'.

Table 4 Trade Message Fields

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary Integer	Size of the message: ■ NYSE Trades – 54 bytes ■ NYSE Arca Trades – 54 bytes ■ NYSE MKT Trades – 54 bytes
Msg Type	2	2	Binary Integer	This field identifies the type of message: ■ '220' – Trade Message
SourceTime	4	4	Binary Integer	This field specifies the time when the msg was generated in the order book. The number represents the number of seconds in UTC time (since EPOCH).
SourceTimeNS	8	4	Binary Integer	This field specifies the number represents the nanosecond portion of UTC time (since EPOCH)
SymbolIndex	12	4	Binary Integer	This field identifies the numerical representation of the symbol. This field is unique for products within each respective market and cannot be used to cross reference a security between markets.
SymbolSeqNum	16	4	Binary Integer	This field contains the symbol sequence number.
TradeID	20	4	Binary Integer	The TradeID identifies a unique Trade execution.
Price	24	4	Binary Integer	This field specifies the price of the order. Use the Price scale from the symbol mapping index.
Volume	28	4	Binary Integer	Volume of the trade in actual shares
TradeCond1	32	1	ASCII	This field contains a settlement related conditions. Valid values:

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
			Char	■ '@' - Regular Sale ■ 'C' – Cash ■ 'N'– Next Day Trade ■ 'R' – Seller Note: Trade Conditions C, N, and R are applicable for NYSE and NYSE MKT only.
TradeCond2	33	1	ASCII Char	This field contains a the Reason for Trade Through Exemptions. Valid values: ■ ' ' – N/A (0x20) ■ 'F' – Intermarket Sweep Order ■ 'O' – Market Center Opening Trade ■ '5' – Market Center Reopening Trade ■ '6' – Market Center Closing Trade ■ '9' – Corrected Last Sale Price Note: Conditions F and O are applicable for NYSE and NYSE MKT only.
TradeCond3	34	1	ASCII Char	This field contains extended hours/sequencing related conditions. Valid values: ■ ' ' – N/A (0x20) ■ 'L' – Sold Last ■ 'T' – Extended Hours Trade ■ 'U' – Extended Hours Sold (Out of Sequence) ■ 'Z' – Sold Note: Condition L is applicable for NYSE and NYSE MKT only. Conditions L, T, and U are applicable for NYSE Arca only. Condition Z applicable for NYSE, NYSE MKT, and NYSE Arca.
TradeCond4	35	1	ASCII Char	This field contains the SRO Required Detail. Valid values: ■ '@' - Regular Sale ■ ' ' – N/A (0x20)

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
				■ 'E' – Automatic Execution
				■ 'I' – Odd Lot Trade
				■ 'K' – Rule 127 (NYSE only) or Rule 155 (NYSE MKT Only)
				■ 'M' – Official Closing Price
				■ 'Q' – Official Open Price
				Note: Trade conditions E and K are applicable to NYSE and NYSE MKT only. Conditions M and Q are applicable to Arca only.
Trade Through Exempt	36	1	ASCII Char	■ 'X' – 611 Trade through Exempt ■ ' ' – N/A (0x20) Note: This is left as a future enhancement for NYSE and NYSE MKT, but is available today on Arca.
LiquidityIndicatorFlag	37	1	Binary Integer	This field indicates which side added liquidity to the trade. Bit Shift values: ■ 0x01 Buy Side ■ 0x02 Sell Side ■ 0x04 No Liquidity added **Note:** NYSE / NYSE MKT market – Pre UTP Migration ■ '0' – N/A
Ask Price	38	4	Binary Integer	This field specifies the Ask price of the quote at the time of the trade. Use the Price scale from the symbol mapping index. This field is currently only populated for NYSE Arca. The current default value for NYSE and NYSE MKT is '0'
Ask Volume	42	4	Binary Integer	This field contains the Ask size of the quote at the time of the trade. This field is currently only populated for NYSE Arca. The current default value for NYSE and NYSE MKT is '0'

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Bid Price	46	4	Binary Integer	This field specifies the Bid price of the quote at the time of the trade. Use the Price scale from the symbol mapping index. This field is currently only populated for NYSE Arca. The current default value for NYSE and NYSE MKT is '0'
Bid Volume	50	4	Binary Integer	This field contains the Bid size of the quote at the time of the trade. This field is currently only populated for NYSE Arca. The current default value for NYSE and NYSE MKT is '0'
Transaction ID	54	4	Binary Integer	This is a unique key per symbol across all messages within a transaction. Users will be able to map the Transaction ID across the respective depth of book, trades, BBO, and Integrated Book products for each market. Note: This field is not yet implemented and is left as a future release. Clients will be notified upon availability.
Tick	58	1	Binary Integer	The tick tracks the movement from the last sale. Valid Values: • 0 = No tick (first time) • 1 = Zero down tick • 2 = Down tick • 3 = Up tick • 4 = Zero up tick Note: This field is valid for NYSE and NYSE MKT only, but is reserved as a future enhancement for NYSE Arca. Note: This field is not yet implemented and is left as a future release. Clients will be notified upon availability.
Seller Days	59	1	Binary Integer	This field is only valid if TradeCond1 is 'R' (or "seller"), and indicates the number of days to settle. Valid Values:

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
				• 2-180 Note: This field is valid for NYSE and NYSE MKT only, but is reserved as a future enhancement for NYSE Arca. Nasdaq does not allow 3 or greater than 60. Note: This field is not yet implemented and is left as a future release. Clients will be notified upon availability.
Stop Stock Indicator	60	1	Binary Integer	Valid Values: 0 = Price not Stopped 1 = Price Stopped Note: This field is not yet implemented and is left as a future release. Clients will be notified upon availability.

3.   TRADE CANCEL OR BUST MESSAGE – MSG TYPE '221'

3.1   MESSAGE STRUCTURE

Table 5 describes the body fields of a Trade Cancel or Bust message, MsgType '221'.

Table 5 Trade Cancel or Bust Message Fields

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary Integer	Size of the message: ■ NYSE Trades – 24 Bytes ■ NYSE Arca Trades – 24 bytes ■ NYSE MKT Trades – 24 bytes
Msg Type	2	2	Binary Integer	This field identifies the type of message: ■ '221 – Trade Cancel or Bust Message
SourceTime	4	4	Binary Integer	This field specifies the time when the msg was generated in the order book. The number represents the number of seconds in UTC time (since EPOCH).
SourceTimeNS	8	4	Binary Integer	This field specifies the number represents the nanosecond portion of UTC time (since EPOCH).
SymbolIndex	12	4	Binary Integer	This field identifies the numerical representation of the symbol. This field is unique for products within each respective market and cannot be used to cross reference a security between markets.
SymbolSeqNum	16	4	Binary Integer	This field contains the symbol sequence number.
OriginalTradeID	20	4	Binary Integer	This field is the Original TradeID of the trade being canceled.

4.   TRADE CORRECTION MESSAGE – MSG TYPE '222'

4.1   MESSAGE STRUCTURE

Table 6 describes the body fields of a Trade Correction message, MsgType '222'.

Table 6 Trade Correction Message Fields

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary Integer	Size of the message: ■ NYSE Trades – 41 Bytes ■ NYSE Arca Trades – 41 bytes ■ NYSE MKT Trades - 41 bytes
Msg Type	2	2	Binary Integer	This field identifies the type of message: ■ '222 – Trade Correction Message
SourceTime	4	4	Binary Integer	This field specifies the time when the msg was generated in the order book. The number represents the number of seconds in UTC time (since EPOCH).
SourceTimeNS	8	4	Binary Integer	This field specifies the number represents the nanosecond portion of UTC time (since EPOCH).
SymbolIndex	12	4	Binary Integer	This field identifies the numerical representation of the symbol. This field is unique for products within each respective market and cannot be used to cross reference a security between markets.
SymbolSeqNum	16	4	Binary Integer	This field contains the symbol sequence number.
OriginalTradeID	20	4	Binary Integer	This field is the Original TradeID of the trade being corrected.
TradeID	24	4	Binary Integer	The TradeID identifies a unique Trade execution.
Price	28	4	Binary Integer	This field specifies the price of the order. Use the Price scale from the symbol mapping index.
Volume	32	4	Binary Integer	Volume of the trade in actual shares.
TradeCond1	36	1	ASCII Char	This field contains a settlement related conditions. Valid values:

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
				■ '@' - Regular Sale ■ 'C' – Cash ■ 'N'– Next Day Trade ■ 'R' – Seller Note: Trade Conditions C, N, and R are applicable for NYSE and NYSE MKT only.
TradeCond2	37	1	ASCII Char	This field contains a the Reason for Trade Through Exemptions. Valid values: ■ ' ' – N/A (0x20) ■ 'F' – Intermarket Sweep Order ■ 'O' – Market Center Opening Trade ■ '5' – Market Center Reopening Trade ■ '6' – Market Center Closing Trade ■ '9' – Corrected Last Sale Price Note: Conditions F and O are applicable for NYSE and NYSE MKT only.
TradeCond3	38	1	ASCII Char	This field contains extended hours/sequencing related conditions. Valid values: ■ ' ' – N/A (0x20) ■ 'L' – Sold Last ■ 'T' – Extended Hours Trade ■ 'U' – Extended Hours Sold (Out of Sequence) ■ 'Z' – Sold Note: Condition L is applicable for NYSE and NYSE MKT only. Conditions L and U are applicable for NYSE Arca only. Condition Z is applicable for NYSE, NYSE MKT, and NYSE Arca.
TradeCond4	39	1	ASCII Char	This field contains the SRO Required Detail. Valid values: ■ '@' - Regular Sale ■ ' ' – N/A (0x20)

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
				■ 'E' – Automatic Execution ■ 'I' – Odd Lot Trade ■ 'K' – Rule 127 (NYSE only) or Rule 155 (NYSE MKT Only) ■ 'M' – Official Closing Price ■ 'Q' – Official Open Price Note: Trade conditions E and K are applicable to NYSE and NYSE MKT only. Conditions M and Q are applicable to Arca only.
Trade Through Exempt	40	1	ASCII Char	■ 'X' – 611 Trade through Exempt ■ ' ' – N/A (0x20)
Transaction ID	41	4	Binary Integer	This is a unique key per symbol across all messages within a transaction. Users will be able to map the Transaction ID across the respective depth of book, trades, BBO, and Integrated Book products for each market. Note: This field is not yet implemented and is left as a future release. Clients will be notified upon availability.
Tick	45	1	Binary Integer	The tick tracks the movement from the last sale. Valid Values: • 0 = No tick (first time) • 1 = Zero down tick • 2 = Down tick • 3 = Up tick • 4 = Zero up tick Note: This field is valid for NYSE and NYSE MKT only, but is reserved as a future enhancement for NYSE Arca. Note: This field is not yet implemented and is left as a future release. Clients will be notified upon availability.
Seller Days	46	1	Binary	This field is only valid if TradeCond1 is 'R'

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
			Integer	(or "seller"), and indicates the number of days to settle. Valid Values: • 2-180 Note: This field is valid for NYSE and NYSE MKT only, but is reserved as a future enhancement for NYSE Arca. Note: This field is not yet implemented and is left as a future release. Clients will be notified upon availability.
Stop Stock Indicator	47	1	Binary Integer	Valid Values: 0 = Price not Stopped 1 = Price Stopped Note: This field is not yet implemented and is left as a future release. Clients will be notified upon availability.

5.   STOCK SUMMARY MESSAGE – MSG TYPE '223'

The stock summary message is sent every 1 minute on a separate channel from the main trades feed. The message will be sent out every 1 minute regardless of whether a change to a particular value occurred or not. In the event there is no volume on the stock the trade summary message will not be disseminated.

5.1   MESSAGE STRUCTURE

Table 7 describes the body fields of a Stock Summary message, MsgType '223'.

Table 7 Stock Summary Message Fields

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary Integer	Size of the message: ■ NYSE Trades – 36 Bytes ■ NYSE Arca Trades – 36 bytes ■ NYSE MKT Trades – 36 bytes
Msg Type	2	2	Binary Integer	This field identifies the type of message: ■ '223 – Stock Summary Message
SourceTime	4	4	Binary Integer	This field specifies the time when the msg was generated. The number represents the number of seconds in UTC time (since EPOCH).
SourceTimeNS	8	4	Binary Integer	This field specifies the number represents the nanosecond portion of UTC time (since EPOCH).
SymbolIndex	12	4	Binary Integer	This field identifies the he numerical representation of the symbol. This field is unique for products within each respective market and cannot be used to cross reference a security between markets.
HighPrice	16	4	Binary Integer	This field specifies the High price of the stock for the day. Use the Price scale from the symbol mapping index.
LowPrice	20	4	Binary Integer	This field specifies the Low price of the stock for the day. Use the Price scale from the symbol mapping index.
Open	24	4	Binary Integer	This field specifies the Opening price of the stock for the day. Use the Price scale from the symbol mapping index.
Close	28	4	Binary	This field specifies the Closing price of the stock for the day. Use the Price scale from

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
			Integer	the symbol mapping index.
TotalVolume	32	4	Binary Integer	This field specifies the cumulative volume for the stock throughout the day.

6.   PRODUCT ID

Table 8 describes the Product IDs associated with NYSE, NYSE MKT and NYSE Arca XDP Trades.

Table 8 Product ID

EXCHANGE	PRODUCT ID	DESCRIPTION
NYSE	4	NYSE Trades
NYSE MKT	53	NYSE MKT Trades
NYSE Arca	153	NYSE Arca Trades