

Document title

## **XDP TRADES CLIENT SPECIFICATION**

**NYSE TRADES. NYSE ARCA TRADES, NYSE MKT TRADES**

Version

1.7

Date

12 September 2013

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## 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 LiquidityFlag
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, TradeCon4 to Odd Lot Trade
1.7	9/12/2013	Market-specific notes on Msg Type ‘220’ and ‘222’: Ask Price, Ask Volume, Bid Price, Bid Volume, Condition 3

## 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](#)

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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/>

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## 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 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
<b>Msg Size</b>	0	2	Binary Integer	Size of the message: <ul style="list-style-type: none"> <li>■ NYSE Trades – 54 bytes</li> <li>■ NYSE Arca Trades – 54 bytes</li> <li>■ NYSE MKT Trades – 54 bytes</li> </ul>
<b>Msg Type</b>	2	2	Binary Integer	This field identifies the type of message: <ul style="list-style-type: none"> <li>■ ‘220’ – Trade Message</li> </ul>
<b>SourceTime</b>	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).
<b>SourceTimeNS</b>	8	4	Binary Integer	This field specifies the number represents the nanosecond portion of UTC time (since EPOCH)
<b>SymbolIndex</b>	12	4	Binary Integer	This field identifies the numerical representation of the symbol.
<b>SymbolSeqNum</b>	16	4	Binary Integer	This field contains the symbol sequence number.
<b>TradeID</b>	20	4	Binary Integer	The TradeID identifies a unique Trade execution.
<b>Price</b>	24	4	Binary Integer	This field specifies the price of the order. Use the Price scale from the symbol mapping index.
<b>Volume</b>	28	4	Binary Integer	Volume of the trade in actual shares
<b>TradeCond1</b>	32	1	ASCII Char	This field contains a settlement related conditions. Valid values: <ul style="list-style-type: none"> <li>■ ‘@’ - Regular Sale</li> <li>■ ‘C’ – Cash</li> <li>■ ‘N’– Next Day Trade</li> </ul>

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
				<ul style="list-style-type: none"> <li>■ 'R' – Seller</li> </ul>
TradeCond2	33	1	ASCII Char	<p>This field contains a the Reason for Trade Through Exemptions. Valid values:</p> <ul style="list-style-type: none"> <li>■ '0x20' – N/A</li> <li>■ 'F' – Intermarket Sweep Order</li> <li>■ 'O' – Market Center Opening Trade</li> <li>■ '4' – Derivatively Priced</li> <li>■ '5' – Market Center Reopening Trade</li> <li>■ '6' – Market Center Closing Trade</li> <li>■ '9' – Corrected Last Sale Price</li> </ul>
TradeCond3	34	1	ASCII Char	<p>This field contains extended hours/sequencing related conditions. Valid values:</p> <ul style="list-style-type: none"> <li>■ '0x20' – N/A</li> <li>■ 'L' – Sold Last</li> <li>■ 'T' – Extended Hours Trade</li> <li>■ 'U' – Extended Hours Sold (Out of Sequence)</li> <li>■ 'Z' – Sold</li> <li>■ Note: Condition L is applicable for NYSE and NYSE MKT only. Conditions T, and U are applicable for NYSE Arca only. Condition Z is applicable to all.</li> </ul>
TradeCond4	35	1	ASCII Char	<p>This field contains the SRO Required Detail. Valid values:</p> <ul style="list-style-type: none"> <li>■ '@' - Regular Sale</li> <li>■ '0x20' – N/A</li> <li>■ 'B' – Average Price Trade</li> <li>■ 'E' – Automatic Execution</li> <li>■ 'H' – Price Variation Trade</li> <li>■ 'I' – Odd Lot Trade</li> <li>■ 'K' – Rule 127 (NYSE only) or Rule 155 (NYSE MKT Only)</li> <li>■ 'M' – Official Closing Price</li> </ul>



FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
				<ul style="list-style-type: none"> <li>■ 'P' – Prior Reference Price</li> <li>■ 'Q' – Official Open Price</li> <li>■ 'V' – Stock-Option Trade</li> <li>■ 'X' – Cross Trade</li> </ul>
Trade Through Exempt	36	1	ASCII Char	<ul style="list-style-type: none"> <li>■ 'X' – 611 Trade through Exempt</li> <li>■ '0x20' – N/A</li> </ul>
LiquidityIndicatorFlag	37	1	Binary Integer	<p>This field indicates which side added liquidity to the trade. Bit Shift values:</p> <ul style="list-style-type: none"> <li>■ 0x01 Buy Side</li> <li>■ 0x02 Sell Side</li> <li>■ 0x04 No Liquidity added</li> </ul>
Ask Price	38	4	Binary Integer	<p>This field specifies the Ask price of the last quote at the time of the trade. Use the Price scale from the symbol mapping index.</p> <p><b>NYSE/NYSE MKT</b> - This field will not be populated with data. The Current default value is '0'</p>
Ask Volume	42	4	Binary Integer	<p>This field contains the Ask size of the last quote at the time of the trade.</p> <p><b>NYSE/NYSE MKT</b> - This field will not be populated with data. The Current default value is '0'</p>
Bid Price	46	4	Binary Integer	<p>This field specifies the Bid price of the last quote at the time of the trade. Use the Price scale from the symbol mapping index.</p> <p><b>NYSE/NYSE MKT</b> - This field will not be populated with data. The Current default value is '0'</p>
Bid Volume	50	4	Binary Integer	<p>This field contains the Bid size of the last quote at the time of the trade.</p> <p><b>NYSE/NYSE MKT</b> - This field will not be populated with data. The Current default value is '0'</p>

### 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
<b>Msg Size</b>	0	2	Binary Integer	Size of the message: <ul style="list-style-type: none"> <li>■ NYSE Trades – 24 Bytes</li> <li>■ NYSE Arca Trades – 24 bytes</li> <li>■ NYSE MKT Trades – 24 bytes</li> </ul>
<b>Msg Type</b>	2	2	Binary Integer	This field identifies the type of message: <ul style="list-style-type: none"> <li>■ ‘221 – Trade Cancel or Bust Message</li> </ul>
<b>SourceTime</b>	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).
<b>SourceTimeNS</b>	8	4	Binary Integer	This field specifies the number represents the nanosecond portion of UTC time (since EPOCH).
<b>SymbolIndex</b>	12	4	Binary Integer	This field identifies the numerical representation of the symbol.
<b>SymbolSeqNum</b>	16	4	Binary Integer	This field contains the symbol sequence number.
<b>OriginalTradeID</b>	20	4	Binary Integer	<p><b>Note: NYSE / NYSE MKT market – Pre UTP Migration</b></p> <p>This field is the Symbol sequence number of the original trade marked as a correction by this message.</p> <p><b>Post UTP and NYSE Arca</b></p> <p>This field is the Original TradeID of the trade.</p>

## 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
<b>Msg Size</b>	0	2	Binary Integer	Size of the message: <ul style="list-style-type: none"> <li>■ NYSE Trades – 41 Bytes</li> <li>■ NYSE Arca Trades – 41 bytes</li> <li>■ NYSE MKT Trades - 41 bytes</li> </ul>
<b>Msg Type</b>	2	2	Binary Integer	This field identifies the type of message: <ul style="list-style-type: none"> <li>■ ‘222 – Trade Correction Message</li> </ul>
<b>SourceTime</b>	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).
<b>SourceTimeNS</b>	8	4	Binary Integer	This field specifies the number represents the nanosecond portion of UTC time (since EPOCH).
<b>SymbolIndex</b>	12	4	Binary Integer	This field identifies the numerical representation of the symbol.
<b>SymbolSeqNum</b>	16	4	Binary Integer	This field contains the symbol sequence number.
<b>OriginalTradeID</b>	20	4	Binary Integer	<p><b>Note: NYSE / NYSE MKT market – Pre UTP Migration</b></p> <p>This field is the Symbol sequence number of the original trade marked as a correction by this message.</p> <p><b>Post UTP and NYSE Arca</b></p> <p>This field is the Original TradeID of the trade.</p>
<b>TradeID</b>	24	4	Binary Integer	The TradeID identifies a unique Trade execution.
<b>Price</b>	28	4	Binary Integer	This field specifies the price of the order. Use the Price scale from the symbol mapping index.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
<b>Volume</b>	32	4	Binary Integer	Volume of the trade in actual shares.
<b>TradeCond1</b>	36	1	ASCII Char	This field contains a settlement related conditions. Valid values: <ul style="list-style-type: none"> <li>■ '@' - Regular Sale</li> <li>■ 'C' – Cash</li> <li>■ 'N' – Next Day Trade</li> <li>■ 'R' – Seller</li> </ul>
<b>TradeCond2</b>	37	1	ASCII Char	This field contains a the Reason for Trade Through Exemptions. Valid values: <ul style="list-style-type: none"> <li>■ '0x20' – N/A</li> <li>■ 'F' – Intermarket Sweep Order</li> <li>■ 'O' – Market Center Opening Trade</li> <li>■ '4' – Derivatively Priced</li> <li>■ '5' – Market Center Reopening Trade</li> <li>■ '6' – Market Center Closing Trade</li> </ul>
<b>TradeCond3</b>	38	1	ASCII Char	This field contains extended hours/sequencing related conditions. Valid values: <ul style="list-style-type: none"> <li>■ '0x20' – N/A</li> <li>■ 'L' – Sold Last</li> <li>■ 'T' – Extended Hours Trade</li> <li>■ 'U' – Extended Hours Sold (Out of Sequence)</li> <li>■ 'Z' – Sold</li> </ul> <p>Note: Condition L is applicable for NYSE and NYSE MKT only. Conditions T, and U are applicable for NYSE Arca only. Condition Z is applicable to all.</p>
<b>TradeCond4</b>	39	1	ASCII Char	This field contains the SRO Required Detail. Valid values: <ul style="list-style-type: none"> <li>■ '@' - Regular Sale</li> <li>■ '0x20' – N/A</li> <li>■ 'B' – Average Price Trade</li> </ul>

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
				<ul style="list-style-type: none"> <li>■ 'E' – Automatic Execution</li> <li>■ 'H' – Price Variation Trade</li> <li>■ 'I' – CAP Election Trade</li> <li>■ 'K' – Rule 127 (NYSE only) or Rule 155 (NYSE MKT Only)</li> <li>■ 'M' – Official Closing Price</li> <li>■ 'P' – Prior Reference Price</li> <li>■ 'Q' – Official Open Price</li> <li>■ 'V' – Stock-Option Trade</li> <li>■ 'X' – Cross Trade</li> </ul>
Trade Through Exempt	40	1	ASCII Char	<ul style="list-style-type: none"> <li>■ 'X' – 611 Trade through Exempt</li> <li>■ '0x20' – N/A</li> </ul>

## 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 if there is a change to a particular value 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
<b>Msg Size</b>	0	2	Binary Integer	Size of the message: <ul style="list-style-type: none"> <li>■ NYSE Trades – 36 Bytes</li> <li>■ NYSE Arca Trades – 36 bytes</li> <li>■ NYSE MKT Trades – 36 bytes</li> </ul>
<b>Msg Type</b>	2	2	Binary Integer	This field identifies the type of message: <ul style="list-style-type: none"> <li>■ ‘223 – Stock Summary Message</li> </ul>
<b>SourceTime</b>	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).
<b>SourceTimeNS</b>	8	4	Binary Integer	This field specifies the nanosecond portion of UTC time (since EPOCH).
<b>SymbolIndex</b>	12	4	Binary Integer	This field identifies the numerical representation of the symbol.
<b>HighPrice</b>	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.
<b>LowPrice</b>	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.
<b>Open</b>	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.
<b>Close</b>	28	4	Binary Integer	This field specifies the Closing price of the stock for the day. Use the Price scale from the symbol mapping index.
<b>TotalVolume</b>	32	4	Binary Integer	This field specifies the cumulative volume for the stock throughout the day.

## 6. PRODUCT ID

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**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