Nasdaq Last Sale and Nasdaq FilterView 2.1

Contents

1. Product Description:

Nasdaq Last Sale (NLS) is a direct data feed product offered by The Nasdaq Stock Market. NLS will cover the full range of issues including Nasdaq, New York Stock Exchange, and other U.S. regional exchange-listed securities. NLS provides real-time, intra-day trade data from the Nasdaq/FINRA Trade Reporting Facility (TRF) as well as the Nasdaq execution system.

Market data distributors may use the NLS data feed to feed real-time stock tickers, portfolio trackers, trade alert programs, time and sale graphs, and other display systems.

For pricing and administration information, please refer to the NLS product page on the Nasdaq Trader website.

2. Data Delivery Options

The standard NLS data feed is comprised of trade messages from both Nasdaq and FINRA/Nasdaq TRFs for the full range of U.S. exchange-listed issues.

For firms looking to manage their data traffic flows, Nasdaq will support two FilterView options.

This specification is for Nasdaq Last Sale and Nasdaq FilterView.

3. Network Protocol Options

Nasdaq will offer the NLS data feed in three protocol options:

- SoupBinTCP
- Compressed via SoupBinTCP
- MoldUDP64

For network support and ordering information, please refer to the Nasdaq Direct Data Products Specifications Page on the Nasdaq Trader website.

4. Architecture

NLS will be made up of a series of sequenced messages. Each message is variable in length based on the message type. The messages that make up the NLS protocol are typically delivered using a higher-level protocol that takes care of sequencing and delivery guarantees.

5. Data Types

All integer fields are big-endian (network byte order) binary encoded numbers. Unless otherwise noted, they are unsigned.

Prices are integer fields, supplied with an associated precision. Unless specifically denoted as a Signed Price, Prices are unsigned. When converted to a decimal format, prices are in a fixed-point format, where the precision defines the number of decimal places. For example, a field flagged as Price (4) has an implied 4 decimal places. Prices are represented with either a 4-byte integer or an 8-byte integer. Whenever possible, the 4-byte representation will be used. However, for prices that exceed the upper limit of a 4-byte price (e.g., 0xFFFFFFFF=$429,496.7295 for a Price (4), the longer form for the price will be used.

Timestamps reflects the Nasdaq system time at which the outbound message was generated. Nasdaq states time as the number of nanoseconds past midnight. The time zone is U.S. Eastern Time.

All alphanumeric fields are left-justified, ASCII fields. Padding spaces appear on the right as necessary.

6. Message Formats

1. System Event Message

System Event Messages is used to signal key market or data feed control events.

<table>
<tr><th colspan="5">System Event Message</th></tr>
<tr><th>Name</th><th>Offset</th><th>Len</th><th>Value</th><th>Value Description</th></tr>
<tr><td>Tracking Number</td><td>0</td><td>2</td><td>Integer</td><td>Nasdaq internal tracking number</td></tr>
<tr><td>Timestamp</td><td>2</td><td>6</td><td>Integer</td><td>Time Stamp</td></tr>
<tr><td>Message Type</td><td>8</td><td>1</td><td>Alphanumeric</td><td>S = System Event Message</td></tr>
<tr><td>Event Code</td><td>9</td><td>1</td><td>Alphanumeric</td><td>Denotes the NLS type of system event for which the message is being generated. The allowable values are:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>O</td><td>Start of Transmissions: Denotes that the NLS system has started its daily transmission schedule.</td></tr>
<tr><td>S</td><td>Start of System Hours: This message indicates that Nasdaq is open and ready to start accepting orders.</td></tr>
<tr><td>Q</td><td>Start of Market Hours: Denotes the start of the regular US market session. Traditionally, only trade transactions reported during the regular market session are considered to be “last sale” eligible.</td></tr>
<tr><td>M</td><td>End of Market Hours: Denotes the end of the regular US session.</td></tr>
<tr><td>E</td><td>End of System Hours: Indicates that Nasdaq is now closed and will not accept any new orders today.</td></tr>
<tr><td>C</td><td>End of Transmissions: Denotes that the NLS system has ended its daily transmission schedule.</td></tr>
</table></td></tr>
</table>

2. *Trade Report for Non-NextShares Trades*

The following message is used to relay Nasdaq execution system and TRF trade transactions that are reported for the current business day. Please note that Nasdaq only reports one-side of a trade execution on the Nasdaq Last Sale (NLS) feed and other data feed products.

<table>
<tr><th colspan="5">Trade Report Message</th></tr>
<tr><th>Name</th><th>Offset</th><th>Len</th><th>Type</th><th>Value/Description</th></tr>
<tr><td>Tracking Number</td><td>0</td><td>2</td><td>Integer</td><td>Nasdaq internal tracking number</td></tr>
<tr><td>Time Stamp</td><td>2</td><td>6</td><td>Timestamp</td><td>Denotes the time stamp of the Nasdaq system that generated the trade transaction. Please note that the Nasdaq and TRF systems maintain separate time stamps.</td></tr>
<tr><td>Message Type</td><td>8</td><td>1</td><td>Alphanumeric</td><td>T = Trade Report</td></tr>
<tr><td>Market Center Identifier</td><td>9</td><td>1</td><td>Alphanumeric</td><td>Denotes the Nasdaq market system that generated the trade report message. The allowable values are:<table><tr><th>Code</th><th>Value</th></tr><tr><td>Q</td><td>Nasdaq execution system</td></tr><tr><td>L</td><td>Nasdaq/FINRA Trade Reporting Facility (TRF) Carteret</td></tr><tr><td>2</td><td>Nasdaq/FINRA Trade Reporting Facility (TRF) Chicago</td></tr></table></td></tr>
<tr><td>Issue Symbol</td><td>10</td><td>8</td><td>Alphanumeric</td><td>Denotes the Nasdaq-assigned issue symbol of the security for which the trade report is being generated. For details on Nasdaq symbology, please refer to Appendix B.</td></tr>
<tr><td>Security Class</td><td>18</td><td>1</td><td>Alphanumeric</td><td>Indicates the primary listing market for the issue. Allowable values are:<table><tr><th>Code</th><th>Value</th></tr><tr><td>Q</td><td>Nasdaq</td></tr><tr><td>N</td><td>NYSE</td></tr><tr><td>A</td><td>NYSE American</td></tr><tr><td>P</td><td>NYSE Arca</td></tr><tr><td>Z</td><td>BATS</td></tr><tr><td>V</td><td>Investors’ Exchange, LLC</td></tr></table></td></tr>
</table>

<table>
<tr><td>Trade Control Number</td><td>19</td><td>10</td><td>Alphanumeric</td><td>Indicates the source's internal control number associated with the given trade transaction.

Please note that the Trade Control Number is specific to the source system reflected in the Market Center ID field. This number is used as a key field for trade cancellations and trade corrections.</td></tr>
<tr><td>Trade Price</td><td>29</td><td>4</td><td>Price (4)</td><td>Denotes the report price on the trade transaction.</td></tr>
<tr><td>Trade Size</td><td>33</td><td>4</td><td>Integer</td><td>Indicates the reported number of shares on the trade transaction.</td></tr>
<tr><td>Sale Condition Modifier</td><td>37</td><td>4</td><td>Alphanumeric</td><td>Sale condition modifier consists of four levels as defined below.</td></tr>
<tr><td>Sale Condition Modifier – Level 1</td><td>37</td><td>1</td><td>Alphanumeric</td><td>Used for Settlement Type information. Allowable values are:<table><tr><th>Code</th><th>Value</th></tr><tr><td>@</td><td>Regular Settlement</td></tr><tr><td>C</td><td>Cash Settlement</td></tr><tr><td>N</td><td>Next Day Settlement</td></tr><tr><td>R</td><td>Seller Settlement</td></tr></table></td></tr>
<tr><td>Sale Condition Modifier – Level 2</td><td>38</td><td>1</td><td>Alphanumeric</td><td>Used for SEC Regulation NMS Trade Through Exemption Codes. Allowable values are:<table><tr><th>Code</th><th>Value</th></tr><tr><td>F</td><td>Intermarket Sweep</td></tr><tr><td>O</td><td>Opening Print</td></tr><tr><td>4</td><td>Derivative Priced</td></tr><tr><td>5</td><td>Re-Opening Print</td></tr><tr><td>6</td><td>Closing Print</td></tr><tr><td>7</td><td>Qualified Contingent Trade (QCT)</td></tr><tr><td><space></td><td>Not applicable</td></tr></table></td></tr>
<tr><td>Sale Condition Modifier – Level 3</td><td>39</td><td>1</td><td>Alphanumeric</td><td>Used for Extended Hours or Sold Codes. Allowable values are:<table><tr><th>Code</th><th>Value</th></tr><tr><td>T</td><td>Extended Hours Trade</td></tr><tr><td>U</td><td>Extended Hours Trade – Reported Late or Out of Sequence</td></tr></table></td></tr>
</table>

				Code	Value
				L	Sold Last – Reported Late But In Sequence
				Z	Sold – Out of Sequence
				<space>	Not applicable
Sale Condition Modifier – Level 4	*40*	*1*	*Alphanumeric*	Used for special sale condition codes. Please note that this field is case sensitive. Allowable values are:	
				Code	**Value**
				A	Acquisition
				B	Bunched
				D	Distribution
				H	Price Variation Transaction
				M	Nasdaq Official Close Price (NOCP)
				P	Prior Reference Price
				Q	Nasdaq Official Opening Price (NOOP)
				S	Split Trade
				V	Contingent Trade
				W	Average Price Trade[1]
				X	Cross Trade
				o	Odd lot execution
				x	Odd Lot Cross execution
				<space>	Not applicable

[1] For NLS processing, Nasdaq will use the sale condition modifier of "W" for all Average Price Trades regardless of the listing market center. While the UTP SIP uses the same sale condition modifier code for Nasdaq-listed issues, it should be noted that SIAC / CTA SIP uses a "B" sale condition modifier for Average Price Trades for NYSE-, NYSE American- and NYSE Arca- listed securities.

3. Long Form Trade Report for Non-Next Shares

The following message is used to relay Nasdaq execution system and TRF trade transactions that are reported for the current business day, for long form trades exceeding the upper limit of a 4-byte price. Please note that Nasdaq only reports one-side of a trade execution on the Nasdaq Last Sale (NLS Plus) feed and other data feed products. See Appendix B for a description of each sale condition modifier.

<table>
<tr><th colspan="5">Trade Report Message</th></tr>
<tr><th>Name</th><th>Offset</th><th>Len</th><th>Type</th><th>Value/Description</th></tr>
<tr><td>Tracking Number</td><td>0</td><td>2</td><td>Integer</td><td>Nasdaq internal tracking number</td></tr>
<tr><td>Time Stamp</td><td>2</td><td>6</td><td>Integer</td><td>Denotes the time stamp of the Nasdaq system that generated the trade transaction. Please note that the Nasdaq and TRF systems maintain separate time stamps.</td></tr>
<tr><td>Message Type</td><td>8</td><td>1</td><td>Alphanumeric</td><td>t = Trade Report</td></tr>
<tr><td>Originating Market Center Identifier</td><td>9</td><td>1</td><td>Alphanumeric</td><td>Denotes the Nasdaq market system that generated the trade report message. The allowable values are:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>Q</td><td>The Nasdaq Stock Market</td></tr>
<tr><td>L</td><td>Nasdaq/FINRA Trade Reporting Facility (TRF) Carteret</td></tr>
<tr><td>2</td><td>Nasdaq/FINRA Trade Reporting Facility (TRF) Chicago</td></tr>
</table></td></tr>
<tr><td>Issue Symbol</td><td>10</td><td>8</td><td>Alphanumeric</td><td>Denotes the Nasdaq-assigned issue symbol of the security for which the trade report is being generated. For details on Nasdaq symbology, please refer to Appendix B.</td></tr>
<tr><td>Security Class</td><td>18</td><td>1</td><td>Alphanumeric</td><td>Indicates the primary listing market for the issue. Allowable values are:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>Q</td><td>Nasdaq</td></tr>
<tr><td>N</td><td>NYSE</td></tr>
<tr><td>A</td><td>NYSE American</td></tr>
<tr><td>P</td><td>NYSE Arca</td></tr>
<tr><td>Z</td><td>BATS</td></tr>
<tr><td>V</td><td>Investors’ Exchange, LLC</td></tr>
</table></td></tr>
</table>

Trade Report Message				
Name	***Offset***	***Len***	***Type***	***Value/Description***
Trade Control Number	19	10	Alphanumeric	Indicates the source's internal control number associated with the given trade transaction. Please note that the Trade Control Number is specific to the source system reflected in the Market Center ID field. This number is used as a key field for trade cancellations and trade corrections.
Trade Price	29	8	Price (4)	The price associated with the trade transaction being reported. Refer to Data Types for field processing NLS.
Trade Size	37	4	Integer	Indicates the reported number of shares on the trade transaction.
Sale Condition Modifier	41	4	Alphanumeric	Sale condition modifier consists of four levels as defined below.
Sale Condition Modifier – Level 1	*41*	*1*	*Alphanumeric*	Used for Settlement Type information. Allowable values are: Code: Value @: Regular Settlement C: Cash Settlement N: Next Day Settlement R: Seller Settlement
Sale Condition Modifier – Level 2	*42*	*1*	*Alphanumeric*	Used for SEC Regulation NMS Trade Through Exemption Codes. Allowable values are: Code: Value F: Intermarket Sweep O: Opening Print 4: Derivative Priced 5: Re-Opening Print 6: Closing Print 7: Qualified Contingent Trade (QCT) <space>: Not applicable

<table>
<tr><th colspan="5">Trade Report Message</th></tr>
<tr><th>Name</th><th>Offset</th><th>Len</th><th>Type</th><th>Value/Description</th></tr>
<tr><td>Sale Condition Modifier – Level 3</td><td>43</td><td>1</td><td>Alphanumeric</td><td>Used for Extended Hours or Sold Codes. Allowable values are:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>T</td><td>Extended Hours Trade</td></tr>
<tr><td>U</td><td>Extended Hours Trade – Reported Late or Out of Sequence</td></tr>
<tr><td>L</td><td>Sold Last – Reported Late But In Sequence</td></tr>
<tr><td>Z</td><td>Sold – Out of Sequence</td></tr>
<tr><td><space></td><td>Not applicable</td></tr>
</table></td></tr>
<tr><td>Sale Condition Modifier – Level 4</td><td>44</td><td>1</td><td>Alphanumeric</td><td>Used for special sale condition codes. Please note that this field is case sensitive. Allowable values are:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>A</td><td>Acquisition</td></tr>
<tr><td>B</td><td>Bunched</td></tr>
<tr><td>D</td><td>Distribution</td></tr>
<tr><td>H</td><td>Price Variation Transaction</td></tr>
<tr><td>M</td><td>Nasdaq Official Close Price (NOCP)</td></tr>
<tr><td>P</td><td>Prior Reference Price</td></tr>
<tr><td>Q</td><td>Nasdaq Official Opening Price (NOOP)</td></tr>
<tr><td>S</td><td>Split Trade</td></tr>
<tr><td>V</td><td>Contingent Trade</td></tr>
<tr><td>W</td><td>Average Price Trade[1]</td></tr>
<tr><td>X</td><td>Cross Trade</td></tr>
<tr><td>o</td><td>Odd lot execution</td></tr>
<tr><td>x</td><td>Odd Lot Cross execution</td></tr>
<tr><td><space></td><td>Not applicable</td></tr>
</table></td></tr>
</table>

[1] For NLS processing, Nasdaq will use the sale condition modifier of “W” for all Average Price Trades regardless of the listing market center. While the UTP SIP uses the same sale condition modifier code for Nasdaq-listed issues, it should be noted that SIAC / CTA SIP uses a “B” sale condition modifier for Average Price Trades for NYSE-, NYSE American- and NYSE Arca-listed securities.

4. *NextShares Trade Report*

The following message is used to relay Nasdaq execution system and TRF trade transactions for Exchange Traded Managed Funds (NextShares) that are reported for the current business day. Please note that Nasdaq only reports one-side of a trade execution on the Nasdaq Last Sale (NLS) feed and other data feed products.

<table>
<tr><th colspan="5">Trade Report Message</th></tr>
<tr><th>Name</th><th>Offset</th><th>Len</th><th>Type</th><th>Value/Description</th></tr>
<tr><td>Tracking Number</td><td>0</td><td>2</td><td>Integer</td><td>Nasdaq internal tracking number</td></tr>
<tr><td>Time Stamp</td><td>2</td><td>6</td><td>Timestamp</td><td>Denotes the time stamp of the Nasdaq system that generated the NextShares trade transaction. Please note that the Nasdaq and TRF systems maintain separate time stamps.</td></tr>
<tr><td>Message Type</td><td>8</td><td>1</td><td>Alphanumeric</td><td>M = NextShares Trade Report</td></tr>
<tr><td>Market Center Identifier</td><td>9</td><td>1</td><td>Alphanumeric</td><td>Denotes the Nasdaq market system that generated the trade report message. The allowable values are:<table><tr><th>Code</th><th>Value</th></tr><tr><td>Q</td><td>Nasdaq execution system</td></tr><tr><td>L</td><td>Nasdaq/FINRA Trade Reporting Facility (TRF)</td></tr><tr><td>2</td><td>Nasdaq/FINRA Trade Reporting Facility (TRF) Chicago</td></tr></table></td></tr>
<tr><td>NextShares Symbol</td><td>10</td><td>8</td><td>Alphanumeric</td><td>Denotes the symbol of the NextShares for which the trade report is being generated.</td></tr>
<tr><td>Security Class</td><td>18</td><td>1</td><td>Alphanumeric</td><td>Indicates the primary listing market for the issue. Allowable values are:<table><tr><th>Code</th><th>Value</th></tr><tr><td>Q</td><td>Nasdaq-Listed Issue</td></tr></table></td></tr>
</table>

Trade Control Number	19	10	Alphanumeric	Indicates the source's internal control number associated with the given trade transaction. Please note that the Trade Control Number is specific to the source system reflected in the Market Center ID field. This number is used as a key field for trade cancellations and trade corrections.
Proxy Price	29	4	Price (4)	Denotes the proxy price on the NextShares trade transaction.
Trade Size	33	4	Integer	Indicates the reported number of shares on the trade transaction.
NAV Premium/Discount Amount	37	4	Signed Price (4)	The NAV premium or discount that should be applied to the Proxy Price. **Please note:** This is a signed (+/-) field.
Sale Condition Modifier	41	4	Alphanumeric	Sale condition modifier consists of four levels as defined below.
Sale Condition Modifier – Level 1	*41*	*1*	*Alphanumeric*	Used for Settlement Type information. Allowable values are: Code / Value: @ – Regular Settlement C – Cash Settlement N – Next Day Settlement R – Seller Settlement
Sale Condition Modifier – Level 2	*42*	*1*	*Alphanumeric*	Used for SEC Regulation NMS Trade Through Exemption Codes. Allowable values are: Code / Value: F – Intermarket Sweep O – Opening Print 4 – Derivative Priced 5 – Re-Opening Print 6 – Closing Print

<table>
<tr><td></td><td></td><td></td><td></td><td>
<table>
<tr><td>7</td><td>Qualified Contingent Trade (QCT)</td></tr>
<tr><td><space></td><td>Not applicable</td></tr>
</table>
</td></tr>
<tr><td>Sale Condition Modifier – Level 3</td><td>43</td><td>1</td><td>Alphanumeric</td><td>Used for Extended Hours or Sold Codes. Allowable values are:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>T</td><td>Extended Hours Trade</td></tr>
<tr><td>U</td><td>Extended Hours Trade – Reported Late or Out of Sequence</td></tr>
<tr><td>L</td><td>Sold Last – Reported Late But In Sequence</td></tr>
<tr><td>Z</td><td>Sold – Out of Sequence</td></tr>
<tr><td><space></td><td>Not applicable</td></tr>
</table>
</td></tr>
<tr><td>Sale Condition Modifier – Level 4</td><td>44</td><td>1</td><td>Alphanumeric</td><td>Used for special sale condition codes. Please note that this field is case sensitive. Allowable values are:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>A</td><td>Acquisition</td></tr>
<tr><td>B</td><td>Bunched</td></tr>
<tr><td>D</td><td>Distribution</td></tr>
<tr><td>H</td><td>Price Variation Transaction</td></tr>
<tr><td>M</td><td>Nasdaq Official Close Price (NOCP)</td></tr>
<tr><td>P</td><td>Prior Reference Price</td></tr>
<tr><td>Q</td><td>Nasdaq Official Opening Price (NOOP)</td></tr>
<tr><td>S</td><td>Split Trade</td></tr>
<tr><td>V</td><td>Contingent Trade</td></tr>
<tr><td>W</td><td>Average Price Trade[2]</td></tr>
<tr><td>X</td><td>Cross Trade</td></tr>
<tr><td>o</td><td>Odd lot execution</td></tr>
</table>
</td></tr>
</table>

				x	Odd Lot Cross execution
				<space>	Not applicable

[2] For NLS processing, Nasdaq will use the sale condition modifier of "W" for all Average Price Trades regardless of the listing market center. While the UTP SIP uses the same sale condition modifier code for Nasdaq-listed issues, it should be noted that SIAC / CTA SIP uses a "B" sale condition modifier for Average Price Trades for NYSE-, NYSE American- and NYSE Arca- listed securities.

5. Trade Cancel/Error for Non-NextShares Trades

The following message is used in the event that a Nasdaq or TRF trade transaction is cancelled on the same business day that it is reported.

<table>
<tr><th colspan="5">Trade Cancel/Error Message</th></tr>
<tr><th>Name</th><th>Offset</th><th>Len</th><th>Type</th><th>Value/Description</th></tr>
<tr><td>Tracking Number</td><td>0</td><td>2</td><td>Integer</td><td>Nasdaq internal tracking number</td></tr>
<tr><td>Time Stamp</td><td>2</td><td>6</td><td>Timestamp</td><td>Denotes the time stamp of the Nasdaq system that generated the trade cancel/error message.</td></tr>
<tr><td>Message Type</td><td>8</td><td>1</td><td>Alphanumeric</td><td>X = Trade Cancel/Error</td></tr>
<tr><td>Market Center Identifier</td><td>9</td><td>1</td><td>Alphanumeric</td><td>Denotes the Nasdaq market system that generated the trade report and cancel/error message. The allowable values are:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>Q</td><td>Nasdaq Execution System</td></tr>
<tr><td>L</td><td>Nasdaq/FINRA Trade Reporting Facility (TRF)</td></tr>
<tr><td>2</td><td>Nasdaq/FINRA Trade Reporting Facility (TRF) Chicago</td></tr>
</table></td></tr>
<tr><td>Issue Symbol</td><td>10</td><td>8</td><td>Alphanumeric</td><td>Denotes the Nasdaq-assigned issue symbol of the security for which the trade report is being generated. For details on Nasdaq symbology, please refer to Appendix B.</td></tr>
<tr><td>Security Class</td><td>18</td><td>1</td><td>Alphanumeric</td><td>Indicates the primary listing market for the issue. Allowable values are:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>Q</td><td>Nasdaq</td></tr>
<tr><td>N</td><td>NYSE</td></tr>
<tr><td>A</td><td>NYSE American</td></tr>
</table></td></tr>
</table>

				P: NYSE Arca Z: BATS V: Investors' Exchange, LLC
Original Trade Control Number	19	10	Alphanumeric	Indicates the source's internal control number associated with the given trade transaction. Please note that the Trade Control Number is specific to the source system reflected in the Market Center ID field.
Original Trade Price	29	4	Price (4)	Reported price for the transaction.
Original Trade Size	33	4	Integer	Reported number of shares for transaction.
Original Sale Condition Modifier	37	4	Alphanumeric	Defines the sale condition modifiers as reported on the original trade transaction.

6. *Long Form Trade Cancel/Error for Non-NextShares Trades*

The following message is used in the event that a Nasdaq trade transaction, exceeding the upper limit of a 4-byte price, is cancelled on the same business day that it is reported.

Trade Cancel/Error Message				
Name	***Offset***	***Len***	***Type***	***Value/Description***
Tracking Number	0	2	Integer	Nasdaq internal tracking number
Time Stamp	2	6	Integer	Denotes the time stamp of the Nasdaq system that generated the trade cancel/error message.
Message Type	8	1	Alphanumeric	x = Trade Cancel/Error
Originating Market Center Identifier	9	1	Alphanumeric	Denotes the Nasdaq market system that generated the trade report and cancel/error message. The allowable values are: Code: Value Q: Nasdaq L: Nasdaq/FINRA TRF 2: Nasdaq/FINRA Trade Reporting Facility (TRF) Chicago
Issue Symbol	10	8	Alphanumeric	Denotes the Nasdaq-assigned issue symbol of the security for which the trade report is being generated. For details on Nasdaq symbology, please refer to Appendix B.

<table>
<tr><th colspan="5">Trade Cancel/Error Message</th></tr>
<tr><th>Name</th><th>Offset</th><th>Len</th><th>Type</th><th>Value/Description</th></tr>
<tr><td>Security Class</td><td>18</td><td>1</td><td>Alphanumeric</td><td>Indicates the primary listing market for the issue. Allowable values are:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>Q</td><td>Nasdaq</td></tr>
<tr><td>N</td><td>NYSE</td></tr>
<tr><td>A</td><td>NYSE American</td></tr>
<tr><td>P</td><td>NYSE Arca</td></tr>
<tr><td>Z</td><td>BATS</td></tr>
<tr><td>V</td><td>Investors’ Exchange, LLC</td></tr>
</table></td></tr>
<tr><td>Original Trade Control Number</td><td>19</td><td>10</td><td>Alphanumeric</td><td>Indicates the source’s internal control number associated with the given trade transaction.

Please note that the Trade Control Number is specific to the source system reflected in the Market Center ID field.</td></tr>
<tr><td>Original Trade Price</td><td>29</td><td>8</td><td>Price (4)</td><td>Reported price for the original trade transaction. Refer to Data Types for field processing NLS.</td></tr>
<tr><td>Original Trade Size</td><td>37</td><td>4</td><td>Integer</td><td>Reported number of shares for original trade transaction.</td></tr>
<tr><td>Original Sale Condition Modifier</td><td>41</td><td>4</td><td>Alphanumeric</td><td>Defines the sale condition modifiers as reported on the original trade transaction.</td></tr>
</table>

7. Trade Cancel/Error for NextShares

The following message is used in the event that a Nasdaq or TRF trade transaction for an NextShares is cancelled on the same business day that it is reported.

Trade Cancel/Error Message				
Name	***Offset***	***Len***	***Type***	***Value/Description***
Tracking Number	0	2	Integer	Nasdaq internal tracking number
Time Stamp	2	6	Timestamp	Denotes the time stamp of the Nasdaq system that generated the trade cancel/error message.
Message Type	8	1	Alphanumeric	O = Trade Cancel/Error
Market Center Identifier	9	1	Alphanumeric	Denotes the Nasdaq market system that generated the trade report and cancel/error message. The allowable values are: Code / Value Q — Nasdaq Execution System L — Nasdaq/FINRA Trade Reporting Facility (TRF) 2 — Nasdaq/FINRA Trade Reporting Facility (TRF) Chicago
Issue Symbol	10	8	Alphanumeric	Denotes the Nasdaq-assigned issue symbol of the security for which the trade report is being generated. For details on Nasdaq symbology, please refer to Appendix B.
Security Class	18	1	Alphanumeric	Indicates the primary listing market for the issue. Allowable values are: Code / Value Q — Nasdaq

Original Trade Control Number	19	10	Alphanumeric	Indicates the source's internal control number associated with the given trade transaction. Please note that the Trade Control Number is specific to the source system reflected in the Market Center ID field.
Original Trade Price	29	4	Price (4)	Reported proxy price for the transaction.
Original NAV Premium/Discount Amount	33	4	Signed Price (4)	Original NAV premium or discount originally applied to the Proxy Price. **Please note:** This is a signed (+/-) field.
Original Trade Size	37	4	Integer	Reported number of shares for transaction.
Original Sale Condition Modifier	41	4	Alphanumeric	Defines the sale condition modifiers as reported on the original trade transaction.

8. Trade Correction for Non-NextShares Trades

The following message is used in the event that a TRF trade transaction is corrected on the same business day that it is reported.

<table>
<tr><td colspan="5">Trade Correction Message</td></tr>
<tr><td>Name</td><td>Offset</td><td>Len</td><td>Type</td><td>Value/Description</td></tr>
<tr><td>Tracking Number</td><td>0</td><td>2</td><td>Integer</td><td>Nasdaq internal tracking number</td></tr>
<tr><td>Time Stamp</td><td>2</td><td>6</td><td>Timestamp</td><td>Denotes the time stamp of the Nasdaq system that generated the trade correction message.</td></tr>
<tr><td>Message Type</td><td>8</td><td>1</td><td>Alphanumeric</td><td>C = Trade Correction</td></tr>
<tr><td>Market Center Identifier</td><td>9</td><td>1</td><td>Alphanumeric</td><td>Denotes the Nasdaq market system that generated the trade report and cancel/error message. The allowable values are:<table><tr><td>Code</td><td>Value</td></tr><tr><td>Q</td><td>Nasdaq Execution System</td></tr></table></td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td></td><td><table><tr><td>L</td><td>Nasdaq/FINRA Trade Reporting Facility (TRF)</td></tr><tr><td>2</td><td>Nasdaq/FINRA Trade Reporting Facility (TRF) Chicago</td></tr></table></td></tr>
<tr><td>Issue Symbol</td><td>10</td><td>8</td><td>Alphanumeric</td><td>Denotes the Nasdaq-assigned issue symbol of the security for which the trade correction message is being generated. For details on Nasdaq symbology, please refer to Appendix B.</td></tr>
<tr><td>Security Class</td><td>18</td><td>1</td><td>Alphanumeric</td><td>Indicates the primary listing market for the issue. Allowable values are:<table><tr><th>Code</th><th>Value</th></tr><tr><td>Q</td><td>Nasdaq</td></tr><tr><td>N</td><td>NYSE</td></tr><tr><td>A</td><td>NYSE American</td></tr><tr><td>P</td><td>NYSE Arca</td></tr><tr><td>Z</td><td>BATS</td></tr><tr><td>V</td><td>Investors’ Exchange, LLC</td></tr></table></td></tr>
<tr><td>Original Trade Control Number</td><td>19</td><td>10</td><td>Alphanumeric</td><td>Indicates the source's internal control number associated with the given trade transaction.

Please note that the Trade Control Number is specific to the source system reflected in the Market Center ID field.</td></tr>
<tr><td>Original Trade Price</td><td>29</td><td>4</td><td>Price (4)</td><td>Reported price on the original trade transaction.</td></tr>
<tr><td>Original Trade Size</td><td>33</td><td>4</td><td>Integer</td><td>Reported number of shares on the original trade transaction.</td></tr>
<tr><td>Original Sale Condition Modifier</td><td>37</td><td>4</td><td>Alphanumeric</td><td>Indicates sale condition modifiers associated with the original transaction.</td></tr>
<tr><td>Corrected Trade Control Number</td><td>41</td><td>10</td><td>Alphanumeric</td><td>Indicates the Nasdaq internal control number associated with the adjusted trade transaction.

Please note that the Trade Control Number is specific to the Nasdaq host system reflected in the Market Center ID field.</td></tr>
</table>

Corrected Trade Price	51	4	Price (4)	Indicates the price for the corrected trade transaction.
Corrected Trade Size	55	4	Integer	Indicates the number of shares for the corrected trade transaction.
Corrected Sale Condition Modifier	59	4	Alphanumeric	Denotes the sale condition modifiers associated with the corrected trade transaction.

9. Long Form Trade Correction for Non-NextShares Trades

The following message is used in the event that a Nasdaq trade transaction is corrected on the same business day that it is reported. Please note this is only for trades that have exceeded the upper limit of a 4-byte price.

<table>
<tr><th colspan="5">Trade Correction Message</th></tr>
<tr><th>Name</th><th>Offset</th><th>Len</th><th>Type</th><th>Value/Description</th></tr>
<tr><td>Tracking Number</td><td>0</td><td>2</td><td>Integer</td><td>Nasdaq internal tracking number</td></tr>
<tr><td>Time Stamp</td><td>2</td><td>6</td><td>Integer</td><td>Denotes the time stamp of the Nasdaq system that generated the trade correction message.</td></tr>
<tr><td>Message Type</td><td>8</td><td>1</td><td>Alphanumeric</td><td>c = Trade Correction</td></tr>
<tr><td>Originating Market Center Identifier</td><td>9</td><td>1</td><td>Alphanumeric</td><td>Denotes the Nasdaq market system that generated the trade report and cancel/error message. The allowable values are:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>Q</td><td>Nasdaq</td></tr>
<tr><td>L</td><td>Nasdaq/FINRA TRF</td></tr>
<tr><td>2</td><td>Nasdaq/FINRA Trade Reporting Facility (TRF) Chicago</td></tr>
</table></td></tr>
<tr><td>Issue Symbol</td><td>10</td><td>8</td><td>Alphanumeric</td><td>Denotes the Nasdaq-assigned issue symbol of the security for which the trade correction message is being generated. For details on Nasdaq symbology, please refer to Appendix B.</td></tr>
</table>

Trade Correction Message				
Name	***Offset***	***Len***	***Type***	***Value/Description***
Security Class	18	1	Alphanumeric	Indicates the primary listing market for the issue. Allowable values are: Code – Value Q – Nasdaq N – NYSE A – NYSE American P – NYSE Arca Z – BATS V – Investors' Exchange, LLC
Original Trade Control Number	19	10	Alphanumeric	Indicates the source's internal control number associated with the given trade transaction. Please note that the Trade Control Number is specific to the source system reflected in the Market Center ID field.
Original Trade Price	29	8	Price (4)	Reported price on the original trade transaction. Refer to Data Types for field processing NLS.
Original Trade Size	37	4	Integer	Reported number of shares on the original trade transaction.
Original Sale Condition Modifier	41	4	Alphanumeric	Indicates sale condition modifiers associated with the original transaction.
Corrected Trade Control Number	45	10	Alphanumeric	Indicates the Nasdaq internal control number associated with the adjusted trade transaction. Please note that the Trade Control Number is specific to the Nasdaq host system reflected in the Originating Market Center ID field.
Corrected Trade Price	55	8	Price (4)	Indicates the price for the corrected trade transaction. Refer to Data Types for field processing NLS.
Corrected Trade Size	63	4	Integer	Indicates the number of shares for the corrected trade transaction.
Corrected Sale Condition Modifier	67	4	Alphanumeric	Denotes the sale condition modifiers associated with the corrected trade transaction.

10. Trade Correction for NextShares

The following message is used in the event that a TRF trade transaction for an NextShares is corrected on the same business day that it is reported.

Trade Correction Message				
Name	***Offset***	***Len***	***Type***	***Value/Description***
Tracking Number	0	2	Integer	Nasdaq internal tracking number
Time Stamp	2	6	Timestamp	Denotes the time stamp of the Nasdaq system that generated the trade correction message.
Message Type	8	1	Alphanumeric	Z = Trade Correction
Market Center Identifier	9	1	Alphanumeric	Denotes the Nasdaq market system that generated the trade report and cancel/error message. The allowable values are: <table><tr><th>Code</th><th>Value</th></tr><tr><td>Q</td><td>Nasdaq Execution System</td></tr><tr><td>L</td><td>Nasdaq/FINRA Trade Reporting Facility (TRF)</td></tr><tr><td>2</td><td>Nasdaq/FINRA Trade Reporting Facility (TRF)</td></tr></table>
Issue Symbol	10	8	Alphanumeric	Denotes the Nasdaq-assigned issue symbol of the security for which the trade correction message is being generated. For details on Nasdaq symbology, please refer to Appendix B.
Security Class	18	1	Alphanumeric	Indicates the primary listing market for the issue. Allowable values are: <table><tr><th>Code</th><th>Value</th></tr><tr><td>Q</td><td>Nasdaq-Listed Issue</td></tr></table>
Original Trade Control Number	19	10	Alphanumeric	Indicates the source's internal control number associated with the given trade transaction. Please note that the Trade Control Number is specific to the source system reflected in the Market Center ID field.
Original Trade Price	29	4	Price (4)	Reported proxy price on the original trade transaction.

Original NAV Premium/Discount Amount	33	4	Signed Price (4)	Original NAV premium or discount originally applied to the Proxy Price. **Please note:** This is a signed (+/-) field.
Original Trade Size	37	4	Integer	Reported number of shares on the original trade transaction.
Original Sale Condition Modifier	41	4	Alphanumeric	Indicates sale condition modifiers associated with the original transaction.
Corrected Trade Control Number	45	10	Alphanumeric	Indicates the Nasdaq internal control number associated with the adjusted trade transaction. Please note that the Trade Control Number is specific to the Nasdaq host system reflected in the Market Center ID field.
Corrected Trade Price	55	4	Price (4)	Indicates the price for the corrected trade transaction in proxy price.
Corrected NAV Premium/Discount Amount	59	4	Signed Price (4)	Indicates the corrected NAV premium or discount originally applied to the Proxy Price. **Please note:** This is a signed (+/-) field.
Corrected Trade Size	63	4	Integer	Indicates the number of shares for the corrected trade transaction.
Corrected Sale Condition Modifier	67	4	Alphanumeric	Denotes the sale condition modifiers associated with the corrected trade transaction.

7. Administrative Messages

To help firms create a full display, Nasdaq supports the following administrative messages: (1) Stock Trading Action, (2) Symbol Directory, (3) Reg SHO Short Sale Price Test Restricted Indicator (4) Adjusted Closing Price.

1. Stock Trading Action

Nasdaq uses this administrative message to indicate the current trading status of a security to the trading community.

Prior to the start of system hours, Nasdaq will send out a Trading Action spin. In the spin, Nasdaq will send out a Stock Trading Action message with the “T” (Trading Resumption) for all Nasdaq- and other exchange-listed securities that are eligible for trading at the start of the system hours. If a security is absent from the pre-opening Trading Action spin, firms should assume that the security is being treated as halted in the Nasdaq platform at the start of the system hours. Please note that securities may be halted in the Nasdaq system for regulatory or operational reasons.

After the start of system hours, Nasdaq will use the Trading Action message to relay changes in trading status for an individual security. Messages will be sent when a stock is:

Halted
Paused*
Released for quotation
Released for trading

* The paused status will be disseminated for Nasdaq-listed securities only. Trading pauses on non- Nasdaq listed securities will be treated simply as a halt.

TRADING ACTION MESSAGE				
Name	***Offset***	***Len***	***Type***	***Value/Description***
Tracking Number	0	2	Integer	Nasdaq internal tracking number
Time Stamp	2	6	Timestamp	Time Stamp.
Message Type	8	1	Alphanumeric	H = Trading Action
Issue Symbol	9	8	Alphanumeric	Nasdaq-assigned indicator for issue for which the trading action message is being generated. For details on Nasdaq symbology, please refer to Appendix B.
Security Class	17	1	Alphanumeric	Indicates the primary listing market for the issue. Allowable values are: Code: Value Q: Nasdaq N: NYSE A: NYSE American P: NYSE Arca Z: BATS-Listed Issue V: Investors’ Exchange, LLC
Current Trading State	18	1	Alphanumeric	Reflects the current trading state for the issue. The allowable values are: Code: Value H: Halted across all U.S. equity markets / SROs P: Paused across all U.S. equity markets / SROs (Nasdaq-listed securities only)

				Q — Quotation only period for cross-SRO halt or pause T — Trading on Nasdaq
Reason	19	4	Alphanumeric	Reflects the Market Ops or Market Watch code for the trading state change. Refer to Appendix C for current code list.

Note: For Nasdaq-listed securities, Nasdaq conducts a cross when it releases an IPO security or when it re-opens a seasoned security after a trading halt or trading pause. To facilitate price transparency for its crosses, Nasdaq disseminates a Net Order Imbalance Indicator (NOII) message via the Nasdaq TotalView product suite at 5- second intervals during the quotation only period of the Trading Action release. The NOII data is especially valuable because it includes all order types (displayable and non- displayable) in its calculation.

2. *Reg SHO Short Sale Price Test Restricted Indicator*

In February 2011, the Securities and Exchange Commission (SEC) implemented changes to Rule 201 of the Regulation SHO (Reg SHO). For details, please refer to SEC Release Number 34-61595. In association with the Reg SHO rule change, Nasdaq introduced the following Reg SHO Short Sale Price Test Restricted Indicator message format.

For Nasdaq-listed issues, Nasdaq supports a full pre-opening spin of Reg SHO Short Sale Price Test Restricted Indicator messages indicating the Rule 201 status for all active issues. Nasdaq also sends the Reg SHO Short Sale Price Test Restricted Indicator message in the event of an intraday status change.

For other exchange-listed issues, Nasdaq relays the Reg SHO Short Sale Price Test Restricted Indicator message when it receives an update from the primary listing exchange.

Nasdaq processes orders based on the most recent Reg SHO Restriction status value.

REG SHO RESTRICTION				
Name	***Offset***	***Len***	***Value***	***Notes***
Tracking Number	0	2	Integer	Nasdaq internal tracking number
Timestamp	2	6	Timestamp	Time at which the Reg SHO Restriction message was generated
Message Type	8	1	“Y”	Reg SHO Short Sale Price Test Restricted Indicator
Stock	9	8	Alphanumeric	Stock symbol right padded with spaces.
Reg SHO Action	17	1	Alphanumeric	Denotes the Reg SHO Short Sale Price Test Restriction status for the issue at the time of the message dissemination. Allowable values are: “0” = No price test in place “1” = Reg SHO Short Sale Price Test Restriction in effect due to an intra-day price drop in security “2” = Reg SHO Short Sale Price Test Restriction remains in effect

3. Stock Directory

At the start of each trading day, Nasdaq disseminates stock directory messages for all active Nasdaq and non-Nasdaq-listed security symbols.

Market data redistributors should process this message to populate the Financial Status Indicator (required display field) and the Market Category (recommended display field) for Nasdaq-listed issues.

<table>
<tr><th colspan="5">STOCK DIRECTORY</th></tr>
<tr><th>Name</th><th>Offset</th><th>Length</th><th>Value</th><th>Notes</th></tr>
<tr><td>Tracking Number</td><td>0</td><td>2</td><td>Integer</td><td>Nasdaq internal tracking number</td></tr>
<tr><td>Timestamp</td><td>2</td><td>6</td><td>Integer</td><td>Time Stamp</td></tr>
<tr><td>Message Type</td><td>8</td><td>1</td><td>Alphanumeric</td><td>R = Stock Directory Message</td></tr>
<tr><td>Stock</td><td>9</td><td>8</td><td>Alphanumeric</td><td>Denotes the security symbol for the issue in the Nasdaq execution system.</td></tr>
<tr><td>Market Category</td><td>17</td><td>1</td><td>Alphanumeric</td><td>Indicates Listing market or listing market tier for the issue
<table>
<tr><th>Code</th><th>Definition</th></tr>
<tr><td colspan="2">Nasdaq-Listed Instruments</td></tr>
<tr><td>Q</td><td>Nasdaq Global Select Market^{SM}</td></tr>
<tr><td>G</td><td>Nasdaq Global Market^{SM}</td></tr>
<tr><td>S</td><td>Nasdaq Capital Market®</td></tr>
<tr><td colspan="2">Non-Nasdaq-Listed Instruments</td></tr>
<tr><td>N</td><td>New York Stock Exchange (NYSE)</td></tr>
<tr><td>A</td><td>NYSE American</td></tr>
<tr><td>P</td><td>NYSE Arca</td></tr>
<tr><td>Z</td><td>BATS Z Exchange</td></tr>
<tr><td>V</td><td>Investors’ Exchange, LLC</td></tr>
<tr><td><space></td><td>Not available</td></tr>
</table></td></tr>
<tr><td>Financial Status Indicator</td><td>18</td><td>1</td><td>Alphanumeric</td><td>For Nasdaq-listed issues, this field indicates when a firm is not in compliance with Nasdaq continued listing requirements.
<table>
<tr><th>Code</th><th>Definition</th></tr>
<tr><td colspan="2">Nasdaq-Listed Instruments</td></tr>
<tr><td>D</td><td>Deficient</td></tr>
<tr><td>E</td><td>Delinquent</td></tr>
<tr><td>Q</td><td>Bankrupt</td></tr>
<tr><td>S</td><td>Suspended</td></tr>
<tr><td>G</td><td>Deficient and Bankrupt</td></tr>
<tr><td>H</td><td>Deficient and Delinquent</td></tr>
<tr><td>J</td><td>Delinquent and Bankrupt</td></tr>
<tr><td>K</td><td>Deficient, Delinquent and Bankrupt</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td></td><td><table>
<tr><td>C</td><td>Creations and/or Redemptions Suspended for Exchange Traded Product</td></tr>
<tr><td>N</td><td>Normal (Default): Issuer Is NOT Deficient, Delinquent, or Bankrupt</td></tr>
<tr><td colspan="2">Non-Nasdaq-Listed Instruments</td></tr>
<tr><td><space></td><td>Not available. Firms should refer to SIAC feeds for code if needed.</td></tr>
</table></td></tr>
<tr><td>Round Lot Size</td><td>19</td><td>4</td><td>Integer</td><td>Denotes the number of shares that represent a round lot for the issue</td></tr>
<tr><td>Round Lots Only</td><td>23</td><td>1</td><td>Alphanumeric</td><td>Indicates if Nasdaq system limits order entry for issue

<table>
<tr><td>Code</td><td>Definition</td></tr>
<tr><td>Y</td><td>Nasdaq system only accepts round lots orders for this security.</td></tr>
<tr><td>N</td><td>Nasdaq system does not have any order size restrictions for this security. Odd and mixed lot orders are allowed.</td></tr>
</table></td></tr>
<tr><td>Issue Classification</td><td>24</td><td>1</td><td>Alphanumeric</td><td>Identifies the security class for the issue as assigned by Nasdaq. See Appendix for allowable values.</td></tr>
<tr><td>Issue Sub-Type</td><td>25</td><td>2</td><td>Alphanumeric</td><td>Identifies the security sub-type for the issue as assigned by Nasdaq. See Appendix for allowable values.</td></tr>
<tr><td>Authenticity</td><td>27</td><td>1</td><td>Alphanumeric</td><td>Denotes if an issue or quoting participant record is set-up in Nasdaq systems in a live/production, test, or demo state. Please note that firms should only show live issues and quoting participants on public quotation displays.

<table>
<tr><td>Code</td><td>Definition</td></tr>
<tr><td>P</td><td>Live/Production</td></tr>
<tr><td>T</td><td>Test</td></tr>
</table></td></tr>
<tr><td>Short Sale Threshold Indicator</td><td>28</td><td>1</td><td>Alphanumeric</td><td>Indicates if a security is subject to mandatory close-out of short sales under SEC Rule 203(b)(3).

<table>
<tr><td>Code</td><td>Definition</td></tr>
<tr><td>Y</td><td>Issue is restricted under SEC Rule 203(b)(3)</td></tr>
<tr><td>N</td><td>Issue is not restricted</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td></td><td><table><tr><td><space></td><td>Threshold Indicator not available</td></tr></table></td></tr>
<tr><td>IPO Flag</td><td>29</td><td>1</td><td>Alphanumeric</td><td>Indicates if the Nasdaq security is set up for IPO release. This field is intended to help Nasdaq market participant firms comply with FINRA Rule 5131(b).<table><tr><th>Code</th><th>Definition</th></tr><tr><td colspan="2">Nasdaq-Listed Instruments</td></tr><tr><td>Y</td><td>Nasdaq listed instrument is set up as a new IPO security</td></tr><tr><td>N</td><td>Nasdaq listed instrument is not set up as a new IPO security</td></tr><tr><td colspan="2">Non-Nasdaq-Listed Instruments</td></tr><tr><td><space></td><td>Not available</td></tr></table></td></tr>
<tr><td>LULD Reference Price Tier</td><td>30</td><td>1</td><td>Alphanumeric</td><td>Indicates which Limit Up / Limit Down price band calculation parameter is to be used for the instrument. Refer to LULD Rule for details.<table><tr><th>Code</th><th>Definition</th></tr><tr><td>1</td><td>Tier 1 NMS Stocks and select ETPs</td></tr><tr><td>2</td><td>Tier 2 NMS Stocks</td></tr><tr><td><space></td><td>Not applicable</td></tr></table></td></tr>
<tr><td>ETP Flag</td><td>31</td><td>1</td><td>Alphanumeric</td><td>Indicates whether the security is an exchange traded product (ETP):<table><tr><th>Code</th><th>Definition</th></tr><tr><td>Y</td><td>Instrument is an ETP</td></tr><tr><td>N</td><td>Instrument is not an ETP</td></tr><tr><td><space></td><td>Not available</td></tr></table></td></tr>
<tr><td>ETP Leverage Factor</td><td>32</td><td>4</td><td>Integer</td><td>Tracks the integral relationship of the ETP to the underlying index. Example: If the underlying Index increases by a value of 1 and the ETP’s Leverage factor is 3, indicates the ETF will increase/decrease (see Inverse) by 3.

Leverage Factor is rounded to the nearest integer below, e.g. leverage factor 1 would represent leverages of 1 to 1.99.

This field is used for LULD Tier I price band calculation purposes.

ETP Leverage Factor currently not supported for Non-Nasdaq listed ETP’s.</td></tr>
</table>

<table>
<tr><td>Inverse Indicator</td><td>36</td><td>1</td><td>Alphanumeric</td><td>Indicates the directional relationship between the ETP and underlying index.
<table><tr><th>Code</th><th>Definition</th></tr><tr><td>Y</td><td>ETP is an Inverse ETP</td></tr><tr><td>N</td><td>ETP is not an Inverse ETP</td></tr></table>
Example: An ETP Leverage Factor of 3 and an Inverse value of ‘Y’ indicates the ETP will decrease by a value of 3.</td></tr>
<tr><td>Bloomberg ID</td><td>37</td><td>12</td><td>Alphanumeric</td><td>The composite ID that Bloomberg has assigned to the security. Please note that Bloomberg ID will not be disseminated for Nasdaq FilterView</td></tr>
</table>

4. *Adjusted Closing Price*

At the start of each trading day, Nasdaq disseminates the adjusted closing price for all active symbols in the Nasdaq system.

For Nasdaq-listed securities the Nasdaq Official Closing Price will be used to calculate the adjusted close. For non-Nasdaq securities, the consolidated close will be used to calculate adjusted close.

Note: Nasdaq will not support the adjusted closing price message format for NextShares.

<table>
<tr><th colspan="5">ADJUSTED CLOSING PRICE</th></tr>
<tr><th>Name</th><th>Offset</th><th>Len</th><th>Value</th><th>Notes</th></tr>
<tr><td>Tracking Number</td><td>0</td><td>2</td><td>Integer</td><td>Nasdaq internal tracking number</td></tr>
<tr><td>Timestamp</td><td>2</td><td>6</td><td>Timestamp</td><td>Time at which the Adjusted Closing Price message was generated</td></tr>
<tr><td>Message Type</td><td>8</td><td>1</td><td>“G”</td><td>Adjusted Closing Price</td></tr>
<tr><td>Stock</td><td>9</td><td>8</td><td>Alphanumeric</td><td>Stock symbol right padded with spaces.</td></tr>
<tr><td>Security Class</td><td>17</td><td>1</td><td>Alphanumeric</td><td>Indicates the primary listing market for the issue. Allowable values are:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>Q</td><td>Nasdaq</td></tr>
<tr><td>N</td><td>NYSE</td></tr>
<tr><td>A</td><td>NYSE American</td></tr>
<tr><td>P</td><td>NYSE Arca</td></tr>
<tr><td>Z</td><td>BATS</td></tr>
<tr><td>V</td><td>Investors’ Exchange, LLC</td></tr>
</table></td></tr>
<tr><td>Adjusted Closing Price</td><td>18</td><td>4</td><td>Price (4)</td><td>The previous trading day’s official closing price adjusted for any applicable corporate actions. If there were no corporate actions for a security, the previous day’s official close will be disseminated.</td></tr>
</table>

5. *Long Form Adjusted Closing Price*

At the start of each trading day, Nasdaq disseminates the adjusted closing price for all active symbols in the Nasdaq system.

For Nasdaq-listed securities the Nasdaq Official Closing Price will be used to calculate the adjusted close. For non-Nasdaq securities, the consolidated close will be used to calculate adjusted close.

Note: Nasdaq will not support the adjusted closing price message format for NextShares.
Please note this is only for securities that have exceeded the upper limit of a 4-byte price.

ADJUSTED CLOSING PRICE				
Name	***Offset***	***Len***	***Value***	***Notes***
Tracking Number	0	2	Integer	Nasdaq internal tracking number
Time Stamp	2	6	Integer	Time Stamp.
Message Type	8	1	“g”	Adjusted Closing Price
Issue Symbol	9	8	Alphanumeric	Nasdaq-assigned indicator for issue for which the short sale restriction indicator message is being generated. For details on Nasdaq symbology, please refer to Appendix B.
Security Class	17	1	Alphanumeric	Indicates the primary listing market for the issue. Allowable values are: <table><tr><td>Code</td><td>Value</td></tr><tr><td>Q</td><td>Nasdaq</td></tr><tr><td>N</td><td>NYSE</td></tr><tr><td>A</td><td>NYSE American</td></tr><tr><td>P</td><td>NYSE Arca</td></tr><tr><td>Z</td><td>BATS</td></tr><tr><td>V</td><td>Investors’ Exchange, LLC</td></tr></table>
Adjusted Closing Price	18	8	Price (4)	The previous trading day’s official closing price adjusted for any applicable corporate actions. If there were no corporate actions for a security, the previous day’s official close will be disseminated.

6. *Market-Wide Circuit Breaker (MWCB) Messaging*

1. ***MWCB Decline Level Message***

Informs data recipients what the daily MWCB breach points are set to for the current trading day.

MWCB Decline Level Message				
Name	***Offset***	***Length***	***Value***	***Notes***
Tracking Number	0	2	Integer	Nasdaq internal tracking number
Timestamp	2	6	Timestamp	Time at which the MWCB Decline Level message was generated
Message Type	8	1	“V”	Market wide circuit breaker Decline Level Message.
Level 1	9	8	Price (8)	Denotes the MWCB Level 1 Value.
Level 2	17	8	Price (8)	Denotes the MWCB Level 2 Value.
Level 3	25	8	Price (8)	Denotes the MWCB Level 3 Value.

2. *MWCB Status Message*

Informs data recipients when a MWCB has breached one of the established levels

MWCB Breach Message				
Name	***Offset***	***Length***	***Value***	***Notes***
Tracking Number	0	2	Integer	Nasdaq internal tracking number
Timestamp	2	6	Timestamp	Time at which the MWCB Breaker Status message was generated
Message Type	8	1	"W"	Market-Wide Circuit Breaker Status message
Breached Level	9	1	Alphanumeric	Denotes the MWCB Level that was breached. "1" = Level 1 "2" = Level 2 "3" = Level 3

8. IPO Quoting Period Update

Indicates the anticipated IPO quotation release time of a security.

IPO Quoting Period Update				
Name	***Offset***	***Length***	***Value***	***Notes***
Tracking Number	0	2	Integer	Nasdaq internal tracking number
Timestamp	2	6	Timestamp	Time at which the IPQ Quoting Period Update message was generated
Message Type	8	1	"K"	IPO Quoting Period Update Message
Stock	9	8	Alphanumeric	Denotes the security symbol for the issue in the Nasdaq execution system.
IPO Quotation Release Time	17	4	Integer	Denotes the IPO release time, in seconds since midnight, for quotation to the nearest second. Format: HHMMSS NOTE: If the quotation period is being canceled/postponed, we should state that 1. IPO Quotation Time will be set to 0 2. IPO Price will be set to 0
IPO Quotation	21	1	Alphanumeric	**Code** | **Description**

<table>
<tr><td>Release Qualifier</td><td></td><td></td><td></td><td><table><tr><td>A</td><td>Anticipated quotation release time
This value would be used when Nasdaq Market Operations initially enters the IPO instrument for release.</td></tr><tr><td>C</td><td>IPO release canceled/postponed
This value would be used when Nasdaq Market Operations cancels or postpones the release of the IPO instrument.</td></tr></table></td></tr>
<tr><td>IPO Price</td><td>22</td><td>4</td><td>Price (4)</td><td>Denotes the IPO price to be used for intraday net change calculations.</td></tr>
</table>

1. *Operational Halt*

The Exchange uses this message to indicate the current Operational Status of a security to the trading community. An Operational Halt means that there has been an interruption of service on the identified security impacting only the designated Market Center. These Halts differ from the "Stock Trading Action" message types since an Operational Halt is specific to the exchange for which it is declared, and does not interrupt the ability of the trading community to trade the identified instrument on any other market place.

Nasdaq uses this administrative message to indicate the current trading status of the three market centers operated by Nasdaq.

Operational Halt				
Name	***Offset***	***Length***	***Value***	***Notes***
Tracking Number	0	2	Integer	Nasdaq internal tracking number
Timestamp	2	6	Integer	Time at which the Operational Halt message was generated. Refer to Data Types for field processing notes.
Message Type	8	1	"h"	Operational Halt
Stock	9	8	Alpha	Denotes the security symbol for the issue in Nasdaq execution system.
Market Code	17	1	Alpha	Code / Value Q / Nasdaq B / BX X / PSX
Operational Halt Action	18	1	Alpha	Code / Value H / Operationally Halted on the identified Market T / Operational Halt has been lifted and Trading resumed

2. *Contact Information*

Questions about the NLS entitlement, display guidelines may be directed to Clientsuccess@nasdaq.com.

9. Appendix A – Last Sale Processing

SEC Vendor Display Rule

The Securities and Exchange Commission (SEC) has established certain display standards for market data vendors. For more information, please contact the SEC directly.

NLS carries only trade transactions from Nasdaq systems. Since NLS is not a consolidated trade data feed, it should not be used to feed market data displays that are subject to the SEC Vendor Display Rule.

Issue Statistic Calculations

NLS only provides raw trade data for the Nasdaq execution and TRF systems. If needed, firms should create their own algorithms for issue- and market center-level statistics. To help in the process, Nasdaq offers the following guidelines.

a) Last Sale and Volume Calculation

Within the market data industry, the term “last sale” has been widely used in conjunction with the SEC Vendor Display Rule. “Last Sale” is typically used to denote the most recent round or mixed lot trade transaction reported by a market center with an eligible sale condition code for the regular U.S. market session. For consolidated Nasdaq and TRF displays, firms should use the time stamp field from the Trade Report message to determine the proper trade sequence order for last sale calculations as well as time and sales displays.

To facilitate a “Last Sale” calculation, NLS includes the sale condition modifier for both Nasdaq execution system and TRF transactions. The Sale Condition Modifier field consists of four levels. A trade should only be applied to the high, low, last sale, and volume calculations if all four sales condition modifiers so allow.

Sale Condition – Level 1 denotes the settlement type of the transaction. If a transaction has a special settlement code, firms should not include transaction in high, low, or last sale price calculations. If the transaction has a regular settlement type, firms should process the next levels to determine proper processing.

Code	Value	High/Low	Last Sale	Volume
@	Regular Settlement	Yes, if other levels do not overrule	Yes, if other levels do not overrule	Yes, if other levels do not overrule
C	Cash Settlement	No	No	Yes
N	Next Day Settlement	No	No	Yes
R	Seller Settlement	No	No	Yes

Sale Condition – Level 2 indicates if a transaction was trade through exempt.

Code	Value	High/Low	Last Sale	Volume
F	Intermarket Sweep	Yes	Yes	Yes
O	Opening Print	Yes	Yes	Yes
4	Derivative Priced	Yes	No (except if first regular market trade of day)	Yes
5	Re-Opening Print	Yes	Yes	Yes
6	Closing Print	Yes	Yes	Yes
7	Qualified Contingent Trade (QCT)	No	No	Yes
<space>	Not applicable	See other levels	See other levels	See other levels

Sale Condition – Level 3 indicates if the transaction was reported during regular market hours with a "sold" code or during the extended trading hours session. For the TRF system, the "sold" code is used to indicate that a trade occurred during normal market hours but was reported more than 90 seconds after execution. Historically, only trades that occur during normal market hours and in proper sequence are included in the "last sale" calculation.

Code	Value	High/Low	Last Sale	Volume
T	Extended Hours Trade	No	No	Yes
U	Extended Hours Trade – Reported Late or Out of Sequence	No	No	Yes
L	Sold Last – Reported Late But In Sequence	Yes	Yes	Yes
Z	Sold – Out of Sequence	Yes	No (except if first regular market trade of day)	Yes
<space>	Not applicable	See other levels	See other levels	See other levels

Sale Condition – Level 4 indicates special trading situations.

For the Nasdaq execution system, this sale condition level is used to denote when a trade record contains the Nasdaq Official Opening Price (NOOP) or Nasdaq Official

Closing Price (NOCP) values. Since Nasdaq also reports the underlying cross execution transaction to the tape, the NOOP and NOCP report volume should <u>not</u> be included in the daily volume calculation.

For the Cross Trade (X) modifiers, firms should defer to the Level 2 and Level 3 sale condition codes to determine whether to include the trade in the high, low, and last sale calculation statistics.

As outlined in the table below, Nasdaq also observes special processing rules for the Prior Reference Price (P), Weighted Average Price (W), and Odd Lot Execution (o) codes.

Code	Value	High/Low	Last Sale	Volume
A	Acquisition	Yes	Yes	Yes
B	Bunched	Yes	Yes	Yes
D	Distribution	Yes	Yes	Yes
H	Price Variation Trade	No	No	Yes
M	Nasdaq Official Close Price (NOCP)	Yes for Nasdaq market center only or Nasdaq system-wide displays No for Nasdaq/ FINRA TRF only displays	Yes (for Nasdaq market center only or Nasdaq system-wide displays only)	No
o	Odd lot execution	No	No	Yes
P	Prior Reference Price	Yes	No (except if first regular market trade of day)	Yes
Q	Nasdaq Official Opening Price (NOOP)	Yes for Nasdaq market center only or Nasdaq system-wide displays No for Nasdaq/ FINRA TRF only displays	No	No
S	Split Trade	Yes	Yes	Yes

V	Contingent Trade	No	No	Yes
W	Average Price[3]	No	No	Yes
X	Cross Trade	Yes (if sent with an eligible Level 2 modifier)	Yes (if sent with an eligible Level 2 modifier)	Yes
x	Odd Lot Cross Trade	No	No	Yes
<space>	Not applicable	See other levels	See other levels	See other levels

b) Last Trade Calculation

The term "Last Trade" is more widely applied within the market data industry. Many firms use the term "last trade" to refer to the most recent trade transaction reported in sequence. In addition to the "last sale" codes, many firms include odd lots and extended trading hour executions in the "last trade" price calculations.

c) Net Change Calculation

NLS does not include a net change indicator field. Data feed recipient must perform their own calculation for last sale eligible and last trade eligible transactions. The formula should be as follows:

Net Change for Issue Symbol = Current Trade Price - Adjusted Previous Close Price

To obtain the Adjusted Previous Close, firms will need to apply dividends to the previous day's closing price value. For Nasdaq-listed securities, firms may obtain dividend information via the Dividend Daily List web-based product. For ordering information, please refer to the Daily List product page on the Nasdaq Trader website..

For NYSE-, NYSE American-, NYSE Arca- and BATS-listed securities, firms should contact the listing exchange directly to inquire about corporate action data delivery options.

Dividend adjustments are typically applied to the closing price on the day prior to ex- date and reflected on the ex-date, the next business day. Cash dividends of $0.01 or greater should be subtracted from the closing price. For stock dividends, the closing price should be divided by the dividend amount.

[3] For NLS processing, Nasdaq will use the sale condition modifier of "W" for all Average Price Trades regardless of the listing market center. While the UTP SIP uses the same sale condition modifier code for Nasdaq-listed issues, it should be noted that SIAC / CTA SIP uses a "B" sale condition modifier for Average Price Trades for NYSE-, NYSE American and NYSE Arca- listed securities.

10. Appendix B - Stock Symbol Convention

For Nasdaq-listed issues, Nasdaq currently restricts its symbol length to a maximum of 8 characters. For common stock issuances, Nasdaq, PSX and BX will only assign root symbols of 1 to 4 characters in length with possible fifth and or sixth character denoting a suffix. In certain instances, a dot "." delimiter may be applied to symbols after the root and between the suffix eg., XXXX.A. For subordinate securities, Nasdaq and BX will assign a 5 character symbol for which the last character relays information about the issue class or issue type. For the current list of fifth and or six character symbol suffixes,
please refer to Ticker Symbol Convention page on the Nasdaq Trader website.

For NYSE-, NYSE American- and NYSE Arca-listed securities with subordinate issue types, please refer to Ticker Symbol Convention page on the Nasdaq Trader website.

11. Appendix C – Trading Action Reason Codes

For Nasdaq-listed issues, Nasdaq acts as the primary market and has the authority to institute a trading halt or trading pause in an issue due to news dissemination or regulatory reasons.

For CQS issues, Nasdaq abides by any regulatory trading halts and trading pauses instituted by the primary or listing market as appropriate.

For both issue types, Nasdaq may also halt trading for operational reasons.

Nasdaq will send out a trading action message to inform its market participants when the trading status of an issue changes. For informational purposes, Nasdaq also attempts to provide the reason for each trading action update. For bandwidth efficiency reasons, Nasdaq uses a 4-byte code for the reason on its outbound data feeds.

REASON CODES FOR TRADING HALT ACTIONS	
Code	Value
T1	Halt News Pending
T2	Halt News Disseminated
T5	Single Stock Trading Pause In Effect
T6	Regulatory Halt — Extraordinary Market Activity
T8	Halt ETF
T12	Trading Halted; For Information Requested by Listing Market
H4	Halt Non-Compliance
H9	Halt Filings Not Current
H10	Halt SEC Trading Suspension
H11	Halt Regulatory Concern
O1	Operations Halt; Contact Market Operations
LUDP	Volatility Trading Pause
LUDS	Volatility Trading Pause – Straddle Condition
MWC1	Market Wide Circuit Breaker Halt – Level 1
MWC2	Market Wide Circuit Breaker Halt – Level 2
MWC3	Market Wide Circuit Breaker Halt – Level 3
MWC0	Market Wide Circuit Breaker Halt – Carry over from previous day
IPO1	IPO Issue Not Yet Trading
M1	Corporate Action
M2	Quotation Not Available
<space>	Reason Not Available

REASON CODES FOR QUOTATION/TRADING RESUMPTION ACTIONS	
Code	Value
T3	News and Resumption Times
T7	Single Stock Trading Pause / Quotation Only Period
R4	Qualifications Issues Reviewed/Resolved; Quotations/Trading to Resume
R9	Filing Requirements Satisfied/Resolved; Quotations/Trading To Resume
C3	Issuer News Not Forthcoming; Quotations/Trading To Resume
C4	Qualifications Halt ended; Maintenance Requirements Met; Resume
C9	Qualifications Halt Concluded; Filings Met; Quotes/Trades To Resume
C11	Trade Halt Concluded By Other Regulatory Auth.; Quotes/Trades Resume
MWCQ	Market Wide Circuit Breaker Resumption
R1	New Issue Available
R2	Issue Available
IPOQ	IPO Security Released for Quotation (Nasdaq Securities Only)
IPOE	IPO Security — Positioning Window Extension (Nasdaq Securities Only)
<space>	Reason Not Available

For the current list of regulatory halts, please refer to the Trading Halts page on the Nasdaq Trader website.

12. Appendix D - Issue Classification Values

Identifies the security class for the issue as assigned by Nasdaq

CODES FOR ISSUE CLASSIFICATION VALUES	
Code	Value
A	American Depositary Share
B	Bond
C	Common Stock
F	Depository Receipt
I	144A
L	Limited Partnership
N	Notes
O	Ordinary Share
P	Preferred Stock
Q	Other Securities
R	Right
S	Shares of Beneficial Interest
T	Convertible Debenture
U	Unit
V	Units/Benif Int
W	Warrant

13. Appendix E - Issue Sub-Type Values

CODES FOR ISSUE CLASSIFICATION VALUES	
Code	**Value**
A	Preferred Trust Securities
AI	Alpha Index ETNs
B	Index Based Derivative
C	Common Shares
CB	Commodity Based Trust Shares
CF	Commodity Futures Trust Shares
CL	Commodity-Linked Securities
CM	Commodity Index Trust Shares
CO	Collateralized Mortgage Obligation
CT	Currency Trust Shares
CU	Commodity-Currency-Linked Securities
CW	Currency Warrants
D	Global Depositary Shares
E	ETF-Portfolio Depositary Receipt
EG	Equity Gold Shares
EI	ETN-Equity Index-Linked Securities
EM	NextShares*
EN	Exchange Traded Notes
EU	Equity Units
F	HOLDRS
FI	ETN-Fixed Income-Linked Securities
FL	ETN-Futures-Linked Securities
G	Global Shares
I	ETF-Index Fund Shares
IR	Interest Rate
IW	Index Warrant
IX	Index-Linked Exchangeable Notes
J	Corporate Backed Trust Security
L	Contingent Litigation Right
LL	Identifies securities of companies that are set up as a Limited Liability Company (LLC)
M	Equity-Based Derivative
MF	Managed Fund Shares
ML	ETN-Multi-Factor Index-Linked Securities
MT	Managed Trust Securities
N	NY Registry Shares
O	Open Ended Mutual Fund
P	Privately Held Security
PP	Poison Pill
PU	Partnership Units
Q	Closed-End Funds
R	Reg-S
RC	Commodity-Redeemable Commodity-Linked Securities
RF	ETN-Redeemable Futures-Linked Securities
RT	REIT
RU	Commodity-Redeemable Currency-Linked Securities
S	SEED
SC	Spot Rate Closing
SI	Spot Rate Intraday
T	Tracking Stock
TC	Trust Certificates
TU	Trust Units

U	Portal
V	Contingent Value Right
W	Trust Issued Receipts
WC	World Currency Option
X	Trust
Y	Other
Z	Not Applicable

*Nasdaq is planning to introduce Exchange Traded Managed Funds (NextShares) in 2015. Next Shares prices will be stated in proxy price and NAV offset on this feed. Nasdaq is expected to issue vendor display requirements for this new asset class.

14. Appendix F – Documentation Version Control Log

NLS Version 1.00 **February 22, 2007**
NLS specification document released to public. For ordering information, please refer to Nasdaq Vendor Alert #2007-011.

NLS Version 1.00 **April 30, 2007**

The following sections of the NLS were updated for clarity reasons:

Section 5 – Data Type field was updated for all formats to delineate between alphabetic and alphanumeric fields.

Section 5.5.1 – Within the Stock Trading Action message, Nasdaq corrected the Data Type field to alphabetic for Current Trading Status field.

Section 5.5.2 – Within the Issue Directory message format, Nasdaq updated the code list for the Market Category field to denote that space is an allowable value. The Market Category field may be space filled if the security symbol is associated with a test issue OR if Nasdaq Operations adds a production issue to its online systems intra-day.

NLS Version 1.00 **June 7, 2007**

The following sections of the NLS were updated for clarity reasons:

Section 5.4 – Modified Trade Control message to add a Corrected Trade Control Number field to the message.

NLS Version 1.00 **July 2, 2007**

The following sections of the NLS were updated to reflect upcoming product changes:

Section 5.2 and Appendix A – Added new sale condition codes for Cross Trade transactions. For details on the new cross trade modifiers, please refer to Nasdaq Vendor Alert #2007-047.

NLS Version 1.00 **August 22, 2007**

The following sections of the NLS were updated to reflect upcoming product changes:

- Section 1.0 and Section 5 – Updated references to the Trade Reporting Facility (TRF) to the fact the National Association of Securities Dealers (NASD) changed its name to Financial Industry Regulatory Authority (FINRA).
- Section 5.2 and Appendix A – Added note to clearly state that the Nasdaq and TRF systems maintain separate time stamps.
- Appendix A – Modified Level 4 sale condition matrix to clarify processing rules for Nasdaq Official Opening Price (NOOP) and Nasdaq Official Closing Price (NOCP) prints. Firms should include NOOP and NOCP values in Nasdaq market center system (Market Center = "Q" only) or Nasdaq system-wide (Market Centers = "Q" **+** "L") statistics. Firms should however, use the NOOP and NOCP values to set Nasdaq/FINRA TRF system (Market Center = "L" only) statistics.

NLS Version 1.00 **October 24, 2008**

The NLS specification was updated to reflect the following documentation changes: Hyperlinks to Nasdaq Trader website pages were corrected and email addresses were updated.

NLS Version 1.00 **October 30, 2008**

The NLS specification was updated to reflect the following documentation changes:

Updated document to ensure that the value of "H" (Price Variation) properly reflected in references to the Level 4 Sale Condition Modifier.

NLS Version 1.00 **December 4, 2009**

The NLS specification was updated to reflect the following documentation changes:

Edited document to reflect that Sale Condition Level 2 now supports for Intermarket Sweep Order (ISO) values.

NLS Version 1.00 **December 17, 2009**

The NLS specification was updated to reflect the following documentation changes: Changed the Security Class field values to differentiate between NYSE and NYSE MKT listed issues.
Changed the Sale Condition Modifier - Level 4 code for Odd Lot transactions to lower case "o".
Added Delivery Option sections to highlight FilterView options for Nasdaq Last Sale (NLS).

NLS Version 1.00 **January 7, 2010**

The NLS specification was updated to reflect the following documentation changes:

- the Security Class field values to differentiate between NYSE, NYSE MKT and Arca listed issues.

NLS Version 1.10 January 26, 2010

Released a new version of the NLS documentation to support the following changes:

- Increased length of the symbol field from 6 characters to 8 characters in multiple message formats in support of the equity symbology initiative.
- Added note to Appendix B to reflect that Nasdaq is reviewing its stock symbol conventions to determine if changes are needed.

NLS Version 1.10 May 25, 2010

The NLS specification was updated to reflect the following documentation changes:

- Added two new Trading Action – Reason Code values (T5 and T7) in support of the Single Stock Trading Pause.

NLS Version 1.10 July 2, 2010

Nasdaq added new Action Trading code(s) to the Stock Trading Action message for the Nasdaq Volatility Guard trading pause.

NLS Version 1.10 July 14, 2010

Nasdaq added a new Regulation SHO Short Sale Price Test Restricted Indicator message format to be introduced in the fourth quarter of 2010.

NLS Version 1.10 November 4, 2010

Nasdaq updated the Reg SHO message description to reflect the new SEC implementation date.

Nasdaq also fixed a documentation error related to the field layout for the the Stock Trading Action message. (Error was introduced in July of 2010.)

NLS Version 1.10 November 11, 2010

Nasdaq added a note to the sale condition matrixes about its standardization of the Average Price Trade code. As of November 2010, Nasdaq will use the “W” sale condition code for all exchange-listed issues.

NLS Version 1.10 **April 6, 2011**

Nasdaqadded two new Trading Action – Reason codes to Appendix C for the Nasdaq Volatility Guard pilot program. New Reason codes were V1 and V2.

NLS Version 1.10 **September 20, 2011**

Nasdaq added two new values to the Financial Status Indicator. New values were N and S.

NLS Version 1.10 **November 1, 2011**

Nasdaq added a new Market Center code, “Z”, for BATS-listed securities to the Market Category and Security Class fields.

NLS Version 1.10 **November 6, 2012**

Released a new version of the NLS documentation to support the following changes:

- Added the “P” value to the Trading State in the Stock Trading Message.
- Modified the values for the Trading Action Reason Codes. Added the following codes:
    - LUDP - Volatility Trading Pause
    - MWC1 - Market Wide Circuit Breaker Halt – Level 1
    - MWC2 - Market Wide Circuit Breaker Halt – Level 2
    - MWC3 - Market Wide Circuit Breaker Halt – Level 3
    - MWCQ - Market Wide Circuit Breaker Resumption
- Removed the Trading Action values related to the Volatility Guard Program.
- Removed Trading State, “V”. Eliminated Trading Action Reason Codes, V1 and V2.

NLS Version 1.10 **January 9, 2013**

Released a new version of the NLS documentation to support the following changes:
Added the following Trading Action Reason Code:

- MWC0 - Market Wide Circuit Breaker Halt – Carry over from previous day
- Removed the Trading State, “R”, from the Stock Trading Action message.

NLS Version 1.10 **February 22, 2013**

Released a new version of the NLS documentation to correct offsets in the Stock Trading Action and Reg SHO Short Sale Price Test Restricted Indicator messages.

NLS Version 1.10 **March 9, 2013**

Released a new version of the NLS documentation to support the following changes:

Added the following Trading Action Reason Code for LULD to reflect when the National Best Bid is below the lower price band and/or the National Best Offer is above than the upper price band and the NMS Stock is not in a Limit State.

- LUDS - Volatility Trading Pause – Straddle Condition

NLS Version 1.10 **April 12, 2013**

The NLS specification was updated to reflect the following documentation changes: Changed all references from

NYSE Amex to NYSE MKT.

NLS Version 1.10 **April 23, 2013**

The NLS specification was updated to reflect the addition of the following Event

Codes in the System Event Message:

Start of System Hours: This message indicates that Nasdaq is open and ready to start accepting orders.

End of System Hours: Indicates that Nasdaq is now closed and will not accept any new orders today.

NLS Version 1.20 **May 29, 2013**

The NLS specification was updated to reflect the addition of the Adjusted Closing Price Message.

NLS Version 2.00 **July 10, 2013**

The NLS Specification was updated to reflect the following changes:

Added Enhanced Symbol Directory

Added IPO Quotation Release Message

Added Market-Wide Circuit Breaker (MWCB) Messaging

- MWCB Decline Level Message
- MWCB Status Message

Addition of an internal tracking number to multiple messages

Addition of 'C' to the Financial Status Indicator field in the Symbol Directory Message

Addition of 'x' to Sale Condition - Level 4

NLS Version 2.00 **August 2, 2013**

The NLS Specification was updated to reflect the following changes:

Removed internal tracking number from multiple messages

Inclusion of the Appendices for Issue Classification and Issue Sub-Type

Updated offsets in the Symbol Directory Message

Updated offsets and lengths in the MWCB Decline Level Message

Changed the IPO Quotation Release Message Type to "K"

Updated offsets in the IPO Quotation Release Message

NLS Version 2.00 **October 1, 2013**

The NLS Specification was updated to reflect the following changes:

Conversion to a binary format

Clarified interpretation of the levels in the MWCB Decline Levels Message

NLS Version 2.00 **August 28, 2014**

The NLS Specification was updated to reflect the following changes:

Section 6.5.4- Corrected the language for the Adjusted Closing Price

NLS Version 2.00 **December 5, 2014**

The NLS Specification was updated to include missing Issue Sub-Type Codes (Appendix F):

AI – Alpha Indexes ETNs
CO – Collateralized Mortgage Obligation
EU – Equity Units
F – HOLDRS
IR – Interest Rate
IW – Index Warrant
J – Corporate Backed Trust Security
PP – Poison Pill
Q – Closed -End Funds
RT – REIT
SC – Spot Rate Closing
SI – Spot Rate Intraday
WC – World Currency Option
X – Trust
Y – Other
Z – NA

NLS Version 2.1 **March 27, 2015**

The NLS Specification was updated to include the following:

Addition of the following messages:

- NextShares Trade Report
- Trade Cancel/Error for NextShares
- Trade Correction for NextShares

Addition the Issue Sub-Type "EM" for Exchange Traded Managed Funds
Addition of the Level 1 Sale Condition "J " for Proxy Price Settlement
Clarification of Data Types
Increased timestamp length to reflect nanosecond granularity
These changes will take effect 10/1/2015. The 2.1 version will go live on 10/1/2015 - with v 2.0 running in parallel through 1/29/16.

Nasdaq and NFS are requesting that market data vendors display NextShares orders, quotations and trades in NAV-based format, if at all possible. For display use, Nasdaq is including the NAV premium / discount amount data points on QBBO, NLS and NLS Plus for these purposes. Firms may also calculate the NAV premium / discount amount from proxy price field by deducting $100 from the disseminated value.

If firms decide to display NextShares data in proxy price format, Nasdaq and NFS are asking firms to add an indicator to the display so consumers to understand that this value is not the actual execution price for the trade/quote

NLS Version 2.1 **June 30, 2015**

The NLS Specification was updated to now exclude the initially planned Level 1 Sale Condition “J “ for Proxy Price Settlement

http://www.Nasdaqtrader.com/TraderNews.aspx?id=dtn2015-7

NLS Version 2.1 **October 30, 2015**

The NLS Specification was updated to reflect sale condition modifiers for Qualified Contingent Trades (QCT)

NLS Version 2.1 **December 23, 2015**

The NLS Specification was updated to reflect the following changes: Section 6.7 - Trade correction for NextShares - Corrected the field offsets

NLS Version 2.1 **September 12, 2017**

The NLS Specification was updated to reflect the following change:

- A new Market Category code in the Symbol Directory messages for the Investors’ Exchange, LLC to distinguish IEX-listed issues. New market category code is “V”.
- A new Security Class field in the following messages:
  - Stock Trading Action (Type H)
  - Trade Report – Non-NextShares (Type T)
  - Trade Cancel/Error – Non-NextShares (Type X)
  - Trade Correction – Non-NextShares (Type C)
  - Adjusted Closing Price (Type G)

NLS Version 2.2 **March 3, 2018**

Released a new version of Nasdaq Last Sale documentation to add the new Operational Halt message (Section 6.8.7) to indicate the current Operational Status of a security to the trading community.

NLS Version 2.1 **May 3, 2018**

Nasdaq made the decision to fall back to the previous version number to avoid customer confusion related to different sequencing between the version number of the product specifications and the version number of the actual product code.

NLS Version 3.0 **August 17, 2018**

Nasdaq upgraded the software engine that creates the NLS Plus data stream to accommodate the introduction of the FINRA/Nasdaq TRF Chicago facility. The introduction of a new market center code of “2” to support TRF Chicago was also added to this specification. NLS Nasdaq Trades FilterView did not require an upgrade to support TRF Chicago, so the version number has not changed from 2.1.

NLS Version 3.0 **May 17, 2021**

Nasdaq enhanced message End of Day Trade Summary messages to now inlucde the Consolidated High Price, Consolidated Low Price, Consolidated Closing Price, and add Consolidated Open Price to the end of the message.

NLS Version 3.0 **May 17, 2021**

Nasdaq enhanced non-nextshares trades with Long form trades messages exceeding the upper limit 4-byte.

NLS Version 3.0 **December 31, 2021**

Nasdaq created separate and distinct specifications for both Nasdaq FilterView and Nasdaq TRF FilterView.

NLS Version 3.0 **July 14, 2022**

Due to the launch of non-integer leverage factors, updated ETP Leverage Factor from section 7.3 page 29.