

NLS Plus

Version 3.0

A trade-by-trade data feed with Nasdaq, Nasdaq BX and Nasdaq PSX transactions and consolidated volume information for U.S. exchange-listed equities

Table of Contents

			cription: ry / Protocol Options	
			rmats	
-	5.1		n Event Message	
	5.2	•	Report for Non-NextShares	
	5.3		Form Trade Report for NonNext Shares	
	5.4	-	Report for NextShares	
	5.5		Cancel/Error for Non-NextShares Trades	
	5.6		Form Trade Cancel/Error for Non-NextShares Trades	
	5.7	Trade	Cancel/Error for NextShares Trades	21
	5.8		Correction for Non-NextShares Trades	
	5.9		Form Trade Correction for Non-NextShares Trades	
	5.10		de Correction for NextShares Trades	
	5.11		ninistrative Messages	
		5.11.1	0	
	5	5.11.2	-	
		5.11.3	Reg SHO Short Sale Price Test Restricted Indicator	
		5.11.4	Adjusted Closing Price	
	5	5.11.5	Long Form Adjusted Closing Price	
	-	5.11.6	End of Day Trade Summary	
		5.11.7	Long Form End of Day Trade Summary	
			End of Day Trade Summary - NextShares	
	-		IPO Information	
			Market-Wide Circuit Breaker (MWCB) Messaging	
			IPO Quoting Period Update	
			Operational Halt	
6			prmation	
			ast Sale Processing	
			Sale Condition Modifier Definitions	
			Stock Symbol Convention	
			Trading Action Reason Codes	
			ssue Classification Values ssue Sub-Type Values	
			Documentation Version Control Log	
~	Pena			

1 Product Description:

The NLS Plus data feed is designed to provide a comprehensive view into the trading activity on the U.S. equity exchanges.

- Market coverage: The NLS Plus data feed reflect all transactions from the Nasdaq US market systems: The Nasdaq Stock Market, FINRA/Nasdaq Trade Reporting Facility (TRF), Nasdaq BX (BX) and Nasdaq PSX (PSX). In addition, NLS Plus features total cross-market volume information at the issue level.
- Security coverage: The NLS Plus covers all Nasdaq, New York Stock Exchange (NYSE)-, and other US regional exchange-listed securities.

Market data distributors may use the NLS Plus 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 <u>NLS Plus product page</u> on the Nasdaq Trader website.

2 Data Delivery / Protocol Options

Nasdaq will offer the NLS Plus data feed in two protocol options:

- MoldUDP64
- <u>Compressed</u> via <u>SoupBINTCP</u>

NLS Plus will be delivery via two data channels:

Channel #	Data Set
NLS Plus #1	Nasdaq trades with real-time consolidated volume for Nasdaq-listed securities
NLS Plus #2	Nasdaq trades with real-time consolidated volume for NYSE, and other listed securities

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

3 Architecture

NLS Plus 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 Plus protocol are typically delivered using a higher level protocol that takes care of sequencing and delivery guarantees.

4 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 fixed point format, where the precision defines the number of decimal places. For example, a Price (4) field 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., 0xFFFFFFF=\$429,496.7295 for a Price(4)), the longer form for the price will be used.

Timestamp 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.

5 Message Formats

5.1 System Event Message

System Event Message							
Name	Offset	Len	Value	NLS Plus			
Tracking Number	0	2	Integer	Nasdaq internal tracking number			
Timestamp	2	6	Integer	Time Stamp			
Message Type	8	1	Alphanumeric	S = System Event Message			
Event Code	9	1	Alphanumeric	Denotes the NLS Plus type of system event for which the message is being generated. The allowable values are:			

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

Name	Offset	Len	Value	NLS Plus	
				Code	Value
				0	Start of Transmissions: Denotes that the NLS Plus system has started its daily transmission schedule.
				5	Start of System Hours: This message indicates that Nasdaq is open and ready to start accepting orders.
				Q	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.
				М	End of Market Hours: Denotes the end of the regular US session.
				E	End of System Hours: Indicates that Nasdaq is now closed and will not accept any new orders today.
				С	End of Transmissions: Denotes that the NLS Plus system has ended its daily transmission schedule.

5.2 Trade Report for Non-NextShares

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 Plus) feed and other data feed products. See Appendix B for a description of each sale condition modifier.

Trade Report Message						
Name	Offset	Len	Туре	Value/Description		
Tracking Number	0	2	Integer	Nasdaq internal tracking number		

Name	Offset	Len	Туре	Value/De	escript	tion
Time Stamp	2	6	Integer	that gene note that	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.	
Message Type	8	1	Alphanumeric	T = Trade	e Repo	rt
Originating Market Center Identifier	9	1	Alphanumeric	umeric Denotes the Nasdaq market sys generated the trade report mes allowable values are:		trade report message. The
				Code	Valu	ue
				Q	The	Nasdaq Stock Market
				L		daq/FINRA Trade Reporting ility (TRF) Cartaret
				2		daq/FINRA Trade Reporting ility (TRF) Chicago
				В	Nas	daq BX (BX)
				x	Nas	daq PSX (PSX)
Issue Symbol	10	8	Alphanumeric	the secur generate	rity for d. For	asdaq-assigned issue symbol of which the trade report is being details on Nasdaq symbology, Appendix C.
Security Class	18	1	Alphanumeric			rimary listing market for the le values are:
				Code		Value
				Q		Nasdaq
				Ν		NYSE
				А		NYSE American
				Р		NYSE Arca
				Z		BATS
				V		Investors' Exchange, LLC

Trade Report Message								
Name	Offset	Len	Туре	Value/Description				
Trade Control Number	19	10	Alphanumeric	Indicates the source's internal control number associated with the given trade transaction.				
	specific to the sou Market Center ID f		at the Trade Control Number is source system reflected in the ID field. This number is used as a ade cancellations and trade					
Trade Price	29	4	Price (4)		ciated with the trade transaction . Refer to Data Types for field Plus.			
Trade Size	33	4	Integer	Indicates the re trade transaction	eported number of shares on the on.			
Sale Condition Modifier	37	4	Alphanumeric	Sale condition modifier consists of four levels as defined below.				
Sale Condition Modifier – Level	37	1	Alphanumeric	Used for Settlement Type information. Allowable values are:				
1				Code	Value			
				@	Regular Settlement			
				С	Cash Settlement			
				N	Next Day Settlement			
				R	Seller Settlement			
Sale Condition Modifier – Level 2	38	1	Alphanumeric		egulation NMS Trade Through les. Allowable values are:			
2				Code	Value			
				F	Intermarket Sweep			
				0	Opening Print			
				4	Derivative Priced			
				5	Re-Opening Print			
				6	Closing Print			
				7	Qualified Contingent Trade (QCT)			
				<space></space>	Not applicable			

Trade Report Message							
Name	Offset	Len	Туре	Value/Description			
Sale Condition Modifier – Level 3	39	1	Alphanumeric	Used for Extended Hours or Sold Codes. Allowable values are:			
5				Code	Value		
				т	Extended Hours Trade		
				U	Extended Hours Trade – Reported Late or Out of Sequence		
				L	Sold Last – Reported Late But In Sequence		
				Z	Sold – Out of Sequence		
				<space></space>	Not applicable		

Trade Report Mes	Trade Report Message								
Name	Offset	Len	Туре	Value/Descri	iption				
Sale Condition Modifier – Level 4	40	1	Alphanumeric		cial sale condition codes. Please s field is case sensitive. Allowable				
				Code	Value				
				А	Acquisition				
				В	Bunched				
				D	Distribution				
				Н	Price Variation Transaction				
				М	Nasdaq Official Close Price (NOCP)				
				Р	Prior Reference Price				
				Q S	Nasdaq Official Opening Price (NOOP)				
					Split Trade				
				V	Contingent Trade				
				W	Average Price Trade ¹				
				х	Cross Trade				
				0	Odd lot execution				
				x	Odd Lot Cross execution				
				<space></space>	Not applicable				
Consolidated Volume	41	8	Integer	Reflects the volume for the Issue Symbol as reported on the consolidated market data fee at the time that the trade message was generated. See Appendix A for calculation and dissemination information for this data element.					

¹ For NLS Plus 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 MKT- and NYSE Arca-listed securities.

5.3 Long Form Trade Report for Non-NextShares

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.

Trade Report Message								
Name	Offset	Len	Туре	Value/De	Value/Description			
Tracking Number	0	2	Integer	Nasdaq i	Nasdaq internal tracking number			
Time Stamp	2	6	Integer	that gene note that	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.			
Message Type	8	1	Alphanumeric	t = Trade	Report			
Originating Market Center Identifier	9	1	Alphanumeric	Denotes the Nasdaq market system that generated the trade report message. The allowable values are:				
				Code	Value			
				Q	The Nasdaq Stock Market			
				L	Nasdaq/FINRA Trade Reporting Facility (TRF) Cartaret			
				2	Nasdaq/FINRA Trade Reporting Facility (TRF) Chicago			
				В	Nasdaq BX (BX)			
				x	Nasdaq PSX (PSX)			
Issue Symbol	10	8	Alphanumeric	the secur generate	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 C.			

Trade Report Message								
Name	Offset	Len	Туре	Value/Descr	iption			
Security Class	18	1	Alphanumeric		e primary listing market for the able values are:			
				Code	Value			
				Q	Nasdaq			
				Ν	NYSE			
				А	NYSE American			
				Р	NYSE Arca			
				Z	BATS			
				V	Investors' Exchange, LLC			
Trade Control Number	19	10	Alphanumeric		e source's internal control number vith the given trade transaction.			
				specific to th Market Cent	that the Trade Control Number is le source system reflected in the er ID field. This number is used as a trade cancellations and trade			
Trade Price	29	8	Price (4)		sociated with the trade transaction ed. Refer to Data Types for field ILS Plus.			
Trade Size	37	4	Integer	Indicates the reported number of shares on the trade transaction.				
Sale Condition Modifier	41	4	Alphanumeric	Sale condition	on modifier consists of four levels as w.			
Sale Condition Modifier – Level	41	1	Alphanumeric	Used for Set Allowable va	tlement Type information. lues are:			
1				Code	Value			
				@	Regular Settlement			
				С	Cash Settlement			
				N	Next Day Settlement			
				R	Seller Settlement			

Trade Report Mes	Trade Report Message								
Name	Offset	Len	Туре	Value/Descri	ption				
Sale Condition Modifier – Level 2	42	1	Alphanumeric		Regulation NMS Trade Through odes. Allowable values are:				
2				Code	Value				
				F	Intermarket Sweep				
				0	Opening Print				
				4	Derivative Priced				
				5	Re-Opening Print				
				6	Closing Print				
				7	Qualified Contingent Trade (QCT)				
				<space></space>	Not applicable				
Sale Condition Modifier – Level 3	43	1	Alphanumeric	Used for Exte Allowable val	nded Hours or Sold Codes. ues are:				
3				Code	Value				
				Т	Extended Hours Trade				
				U	Extended Hours Trade – Reported Late or Out of Sequence				
				L	Sold Last – Reported Late But In Sequence				
				Z	Sold – Out of Sequence				
				<space></space>	Not applicable				

Trade Report Mes	sage				
Name	Offset	Len	Туре	Value/Descr	iption
Sale Condition Modifier – Level 4	44	1	Alphanumeric		cial sale condition codes. Please s field is case sensitive. Allowable
				Code	Value
				А	Acquisition
				В	Bunched
				D	Distribution
				н	Price Variation Transaction
				М	Nasdaq Official Close Price (NOCP)
				Р	Prior Reference Price
				Q	Nasdaq Official Opening Price (NOOP)
				S	Split Trade
				V	Contingent Trade
				w	Average Price Trade ²
				х	Cross Trade
				o	Odd lot execution
				x	Odd Lot Cross execution
				<space></space>	Not applicable
Consolidated Volume	45	8	Integer	reported on at the time t generated.	volume for the Issue Symbol as the consolidated market data feed hat the trade message was See Appendix A for calculation and on information for this data

5.4 Trade Report for NextShares

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

² For NLS Plus 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.

on the Nasdaq Last Sale (NLS Plus) feed and other data feed products. See Appendix B for a description of each sale condition modifier.

Name	Offset	Len	Туре	Value/Desc	cription
Tracking Number	0	2	Integer	Nasdaq inte	ernal tracking number
Time Stamp	2	6	Integer	Denotes the time stamp of the Nasdaq system that generated the trade transaction. Please note that the Nasda and TRF systems maintain separate time stamps.	
Message Type	8	1	Alphanumeric	M = Trade I	Report
Originating Market Center Identifier	9	1	Alphanumeric		e Nasdaq market system that the trade report message. The alues are:
				Code	Value
				Q	The Nasdaq Stock Market
				L	Nasdaq/FINRA Trade Reporting Facility (TRF)
				2	Nasdaq/FINRA Trade Reporting Facility (TRF) Chicago
				В	Nasdaq BX (BX)
				Х	Nasdaq PSX (PSX)
NextShares Symbol	10	8	Alphanumeric		e NextShares symbol for which eport is being generated.
Security Class	18	1	Alphanumeric		ne primary listing market for Allowable values are:
				Code	Value
				Q	Nasdaq Listed Issue
Trade Control Number	19	10	Alphanumeric		ne source's internal control sociated with the given trade
				Number is a reflected in This number	e that the Trade Control specific to the source system the Market Center ID field. er is used as a key field for ellations and trade corrections.
Proxy Price	29	4	Price (4)	Reported p	roxy price for the transaction.

Name	Offset	Len	Туре	Value/Desci	ription
Trade Size	33	4	Integer		e reported number of shares transaction.
NAV Offset Amount	37	4	Signed Price (4)	The NAV off the Proxy Pr	set that should be applied to ice.
				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 Set Allowable va	tlement Type information. alues are:
				Code	Value
				@	Regular Settlement
				С	Cash Settlement
				N	Next Day Settlement
				R	Seller Settlement
Sale Condition Modifier – Level 2	42	1	Alphanumeric		<u>CRegulation NMS</u> Trade Emption Codes. Allowable
				Code	Value
				F	Intermarket Sweep
				0	Opening Print
				4	Derivative Priced
				5	Re-Opening Print
				6	Closing Print
				7	Qualified Contingent Trade (QCT)
				<space></space>	Not applicable

Trade Report Message								
Name	Offset	Len	Туре	Value/Des	scription			
Sale Condition Modifier – Level 3	43	1	Alphanumeric		xtended Hours or Sold Codes. values are:			
				Code	Value			
				Т	Extended Hours Trade			
				U	Extended Hours Trade – Reported Late or Out of Sequence			
				L	Sold Last – Reported Late But In Sequence			
				Z	Sold – Out of Sequence			
				<space></space>	Not applicable			

Name	Offset	Len	Туре	Value/Desc	ription
Sale Condition Modifier – Level 4	44	1	Alphanumeric		ecial sale condition codes. that this field is case sensitive. alues are:
				Code	Value
				А	Acquisition
				В	Bunched
				D	Distribution
				Н	Price Variation Transaction
				М	Nasdaq Official Close Price (NOCP)
				Р	Prior Reference Price
				Q	Nasdaq Official Opening Price (NOOP)
				S	Split Trade
				V	Contingent Trade
				W	Average Price Trade ³
				х	Cross Trade
				ο	Odd lot execution
				x	Odd Lot Cross execution
				<space></space>	Not applicable
Consolidated Volume	45	8	Integer	as reported data feed at message wa for calculati	volume for the Issue Symbol on the consolidated market t the time that the trade as generated. See Appendix A on and dissemination for this data element.

³ For NLS Plus 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.

5.5 Trade Cancel/Error for Non-NextShares Trades

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

Trade Cancel/Err	or Messa	age			
Name	Offset	Len	Туре	Value/Descri	iption
Tracking Number	0	2	Integer	Nasdaq inter	rnal tracking number
Time Stamp	2	6	Integer		time stamp of the Nasdaq system that e trade cancel/error message.
Message Type	8	1	Alphanumeric	X = Trade Car	ncel/Error
Originating Market Center Identifier	9	1	Alphanumeric		Nasdaq market system that generated ort and cancel/error message. The ues are:
				Code	Value
				Q	Nasdaq
				L	Nasdaq/FINRA TRF
				2	Nasdaq/FINRA Trade Reporting Facility (TRF) Chicago
				В	BX
				х	PSX
Issue Symbol	10	8	Alphanumeric	security for	Nasdaq-assigned issue symbol of the which the trade report is being for details on Nasdaq symbology, please endix C.
Security Class	18	1	Alphanumeric	Indicates the Allowable val	primary listing market for the issue. lues are:
				Code	Value
				Q	Nasdaq
				N	NYSE
				А	NYSE American
				Р	NYSE Arca
				Z	BATS
				V	Investors' Exchange, LLC

Trade Cancel/Error Message								
Name	Offset	Len	Туре	Value/Description				
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 original trade transaction. Refer to Data Types for field processing NLS Plus.				
Original Trade Size	33	4	Integer	Reported number of shares for original trade transaction.				
Original Sale Condition Modifier	37	4	Alphanumeric	Defines the sale condition modifiers as reported on the original trade transaction.				
Consolidated Volume	41	8	Integer	Reflects the volume for the Issue Symbol as reported on the consolidated market data feed at the time that the trade cancel/error message was generated. See Appendix A for calculation and dissemination information for this data element				

5.6 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	Туре	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				

Trade Cancel/Err	or Messa	ige				
Name	Offset	Len	Туре	Value/Descri	iption	
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	
				В	BX	
				х	PSX	
Issue Symbol	10	8	Alphanumeric	security for	Nasdaq-assigned issue symbol of the which the trade report is being for details on Nasdaq symbology, please endix C.	
Security Class	Security Class 18 1		1 Alphanumeric	Indicates the primary listing market for the issue. Allowable values are:		
				Code	Value	
				Q	Nasdaq	
				N	NYSE	
				А	NYSE American	
				Р	NYSE Arca	
				Z	BATS	
				v	Investors' Exchange, LLC	
Original Trade Control	19	10	Alphanumeric		source's internal control number ith the given trade transaction.	
Number					hat the Trade Control Number is e source system reflected in the Market d.	
Original Trade Price	29	8	Price (4)	Reported price for the original trade transaction Refer to Data Types for field processing NLS Plus.		
Original Trade Size	37	4	Integer	Reported nu transaction.	umber of shares for original trade	
Original Sale Condition Modifier	41	4	Alphanumeric		sale condition modifiers as reported on rade transaction.	

Trade Cancel/Error Message								
Name	Offset	Len	Туре	Value/Description				
Consolidated Volume	45	8	Integer	Reflects the volume for the Issue Symbol as reported on the consolidated market data feed at the time that the trade cancel/error message was generated. See Appendix A for calculation and dissemination information for this data element				

5.7 Trade Cancel/Error for NextShares Trades

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

Trade Cancel/Error Message								
Name	Offset	Len	Туре	Value/Descrip	tion			
Tracking Number	0	2	Integer	Nasdaq intern	nal tracking number			
Time Stamp	2	6	Integer	Denotes the time stamp of the Nasdaq system the generated the trade cancel/error message.				
Message Type	8	1	Alphanumeric	O = Trade Cancel/Error				
Market Center Identifier	9	1 Alphanumeric			asdaq market system that generated ort and cancel/error message. The es 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 security for which the trade report is be generated. For details on Nasdaq symbology, plea refer to Appendix C.				
Security Class	18	1	Alphanumeric	Indicates the p Allowable valu	primary listing market for the issue. les are:			
				Code	Value			
				Q	Nasdaq-Listed Issue			

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 Proxy Price	29	4	Price (4)	Reported proxy price for the transaction.
Original NAV Offset Amount	33	4	Signed Price (4)	Original NAV offset 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.
Consolidated Volume	45	8	Integer	Reflects the volume for the Issue Symbol as reported on the consolidated market data feed at the time that the trade cancel/error message was generated. See Appendix A for calculation and dissemination information for this data element

5.8 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.

Trade Correction Message							
Name	Offset	Len	Туре	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 correction message.			
Message Type	8	1	Alphanumeric	C = Trade Correction			

Trade Correction	Message	5					
Name	Offset	Len	Туре	Value/Desc	ription		
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		
				В	BX		
				х	PSX		
Issue Symbol	10	8	Alphanumeric	security for being gener	e Nasdaq-assigned issue symbol of the which the trade correction message is rated. For details on Nasdaq symbology r to Appendix C.	γ,	
Security Class	18	1	Alphanumeric	Indicates the primary listing market for the issue. Allowable values are:			
				Code	Value		
				Q	Nasdaq		
				Ν	NYSE		
				А	NYSE American		
				Р	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.			
					that the Trade Control Number is he source system reflected in the Mark eld.	æt	
Original Trade Price	29	4	Price (4)		rice on the original trade transaction. ta Types for field processing NLS Plus.		
Original Trade Size	33	4	Integer		Reported number of shares on the original trade transaction.		
Original Sale Condition Modifier	37	4	Alphanumeric		le condition modifiers associated with transaction.		

Trade Correction	Trade Correction Message						
Name	Offset	Len	Туре	Value/Description			
Corrected Trade Control Number	41	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	51	4	Price (4)	Indicates the price for the corrected trade transaction. Refer to Data Types for field processing NLS Plus.			
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.			
Consolidated Volume	63	8	Integer	Reflects the volume for the Issue Symbol as reported on the consolidated market data feed at the time that the trade correction message was generated. See Appendix A for calculation and dissemination information for this data element.			

5.9 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.

Trade Correction Message							
Name	Offset	Len	Туре	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 correction message.			
Message Type	8	1	Alphanumeric	c = Trade Correction			

Trade Correction	Message	9				
Name	Offset	Len	Туре	Value/Desc	ription	
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	
				В	BX	
				х	PSX	
Issue Symbol	10	8	Alphanumeric	security for being gener	e Nasdaq-assigned issue symbol of the which the trade correction message is rated. For details on Nasdaq symbology, r to Appendix C.	
Security Class	18	1	1 Alphanumeric	Indicates the primary listing market for the issue. Allowable values are:		
				Code	Value	
				Q	Nasdaq	
				N	NYSE	
				А	NYSE American	
				Р	NYSE Arca	
				Z	BATS	
				v	Investors' Exchange, LLC	
Original Trade Control Number	19	10	Alphanumeric		e source's internal control number with the given trade transaction.	
					that the Trade Control Number is he source system reflected in the Marke eld.	
Original Trade Price	29	8	Price (4)		rice on the original trade transaction. ta Types for field processing NLS Plus.	
Original Trade Size	37	4	Integer	Reported nutransaction.	umber of shares on the original trade	
Original Sale Condition Modifier	41	4	Alphanumeric		le condition modifiers associated with transaction.	

Trade Correction	Trade Correction Message							
Name	Offset	Len	Туре	Value/Description				
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 Plus.				
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.				
Consolidated Volume	71	8	Integer	Reflects the volume for the Issue Symbol as reported on the consolidated market data feed at the time that the trade correction message was generated. See Appendix A for calculation and dissemination information for this data element.				

5.10 Trade Correction for 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.

Trade Correction	Trade Correction Message							
Name	Offset	Len	Туре	Value/Descript	tion			
Tracking Number	0	2	Integer	Nasdaq interna	al tracking number			
Time Stamp	2	6	Integer		me stamp of the Nasdaq system that trade correction message.			
Message Type	8	1	Alphanumeric	Z = Trade Correction				
Market Center Identifier	9	1	Alphanumeric		asdaq market system that generated t and cancel/error message. The es 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 correction message is being generated. For details on Nasdaq symbology please refer to Appendix C.		
Security Class	18	1	Alphanumeric	Indicates the p Allowable valu	primary listing market for the issue. les are:	
				Code	Value	
				Q	Nasdaq-Listed Issue	
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 Marke Center ID field.		
Original Proxy Price	29	4	Price (4)	Reported proxy price on the original trade transaction.		
Original NAV Offset Amount	33	4	Signed Price (4)	Original NAV offset originally applied to the Proxy Price.		
				Please note: T	his 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 the original tra	condition modifiers associated with ansaction.	
Corrected Trade Control	45	10	Alphanumeric		Nasdaq internal control number h the adjusted trade transaction.	
Number					at the Trade Control Number is Nasdaq host system reflected in the ^r ID field.	
Corrected Proxy Price	55	4	Price (4)	Indicates the p transaction in	price for the corrected trade proxy price.	
Corrected NAV Offset Amount	59	4	Signed Price (4)	Indicates the c to the Proxy P	corrected NAV offset originally applied rice.	
				Please note: T	his is a signed (+/-) field.	
Corrected Trade Size	63	4	Integer	Indicates the r trade transact	number of shares for the corrected ion.	
Corrected Sale Condition Modifier	67	4	Alphanumeric		ale condition modifiers associated cted trade transaction.	

Consolidated Volume	71	8	Integer	Reflects the volume for the Issue Symbol as reported on the consolidated market data feed at the time that the trade correction message was generated. See Appendix A for calculation and dissemination information for this data element.
				dissemination information for tins data element.

5.11 Administrative Messages

To help firms create a full display, Nasdaq supports the following five administrative messages: (1) Trading Action, (2) Symbol Directory, (3) Reg SHO Short Sale Price Test Restricted Indicator, (4) Adjusted Closing Price, (5) End of Day Trade Summary and (6) IPO Information.

5.11.1 Stock Trading Action

Nasdaq uses this administrative message to indicate the current trading status of a security to the trading community. Please note that this message originates from the Nasdaq market center system.

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 exchangelisted 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.

Stock Trad	Stock Trading Action Message								
Name	Offset	Len	Туре	Value/Descript	ion				
Tracking Number	0	2	Integer	Nasdaq internal tracking number					
Time Stamp	2	6	Integer	Time Stamp.					
Message Type	8	1	Alphanumeric	H = Trading Action					
Reserved	9	1	Alphanumeric	This field is reserved for future use. In the initial release, this field will be space filled.					
lssue Symbol	10	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 C.					
Security Class	18	1	Alphanumeric	Indicates the primary listing market for the issue. Allowable values are:					
				Code	Value				

Name	Offset	Len	Туре	Value/Description				
				Q	Nasdaq			
				N	NYSE			
				А	NYSE American			
				Р	NYSE Arca			
				Z	BATS			
				V	Investors' Exchange, LLC			
Current 19 1 Trading State		1	Alphanumeric	Reflects the current trading state for the issue. The allowable values are:				
				Code	Value			
				н	Halt in effect (Cross all U.S. equity exchanges)			
				Ρ	Paused across all U.S. equity markets / SROs (Nasdaq-listed securities only)			
				Q	Quote only period in effect (Cross all U.S. equity changes)			
				Т	Trading on Nasdaq market			
	20	4	Alphanumeric	Reflects the Market Ops or Market Watch code for the trading state change. Refer to Appendix D for current code list.				

5.11.2 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.

STOCK DIRE	CTORY					
Name	Offset	Length	Value	Notes		
Tracking Number	0	2	Integer	Nasdaq int	ernal tracking number	
Timestamp	2	6	Integer	Time Stamp		
Message Type	8	1	Alphanumeric	R = Stock [Directory Message	
Stock	9	8	Alphanumeric		he security symbol for the issue q execution system.	in
Market Category	17	1	Alphanumeric		isting market or listing market	tier
				Code	Definition	
				Nasdag-L	Listed Instruments	
				Q	Nasdaq Global Select Market SM	
				G	Nasdaq Global Market SM	
				S	Nasdaq Capital Market [®]	
				Non-Nasdaq-Listed Instruments		
				N	New York Stock Exchange (NYSE)	
				A	NYSE American	
				Р	NYSE Arca	
				Z	BATS Z Exchange	
				V	Investors' Exchange, LLC	
				<space></space>	Not available	
Financial Status Indicator	18	1	Alphanumeric	when a fir	q-listed issues, this field indicate m is not in compliance with intinued listing requirements.	es
				Code	Definition	
				Nasdaq-L	Listed Instruments	
				D	Deficient	
				E	Delinquent	
				Q	Bankrupt	
				S	Suspended	
				G	Deficient and Bankrupt	

	1	1	1		-	
				Н	Deficient and Delinquent	
				J	Delinquent and Bankrupt	t
				K	Deficient, Delinquent	
					and Bankrupt	
				С	Creations and/or	
					Redemptions Suspended	
					for Exchange Traded	
					Product	
				N	Normal (Default): Issuer	
					Is NOT Deficient,	
					Delinquent, or Bankrupt	
				Non-Nasda	aq-Listed Instruments	_
				<pre><space></space></pre>	Not available. Firms	_
				<space></space>	should refer to SIAC	
					feeds for code if needed.	
					Teeus for code if fielded.	•
Round Lot	19	4	Integer	Denotes the	number of shares that	
Size	15	-	integer		round lot for the issue	
Round Lots	23	1	Alphanumeric	Indicates if Nasdaq system limits order entry		entry
Only	20	-	, aprication of the	for issue		entry
<i>c</i> ,						
				Code	Definition	
				Y	Nasdaq system only	
					accepts round lots	
					orders for this security.	
				N	Nasdaq system does not	+
					have any order size	-
					restrictions for this	
					security. Odd and mixed	
					lot orders are allowed.	
Issue	24	1	Alphanumeric	Identifies th	e security class for the issue	e as
Classification	27	1	Alphanumene		Nasdag. See Appendix for	c as
Classification				allowable va		
Issue Sub-	25	2	Alphanumeric		e security sub-type for the	issuo
	23	2	Alphanumenc		by Nasdaq. See Appendix fo	
Туре				allowable va		01
Authopticity	27	1	Alphanumaria			t
Authenticity	27	L L	Alphanumeric	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		tation
				displays.		
				Carla	Definition	
				Code	Definition	
				P	Live/Production	
				Т	Test	

Short Sale Threshold Indicator	28	1	Alphanumeric	Indicates if a security is subject to mandatory close-out of short sales under SEC Rule 203(b)(3).		
				Code	Definition	
				Y	Issue is restricted under SEC Rule 203(b)(3)	
				N	Issue is not restricted	
				<space></space>	Threshold Indicator not	
					available	
IPO Flag	29	1	Alphanumeric	Indicates if the Nasdaq security is set up fo IPO release. This field is intended to help Nasdaq market participant firms comply w FINRA Rule 5131(b).)
				Code	Definition	
					sted Instruments	
				Y	Nasdaq listed instrument is set up as a new IPO security	
				N	Nasdaq listed instrument is not set up as a new IPO security	
				Non-Nasd	aq-Listed Instruments	
				<space></space>	Not available	
LULD Reference Price Tier	30	1	Alphanumeric	Indicates which Limit Up / Limit Down price band calculation parameter is to be used for the instrument. Refer to <u>LULD Rule</u> for details.		
				Code	Definition	
				1	Tier 1 NMS Stocks and select ETPs	
				2	Tier 2 NMS Stocks	
				<space></space>	Not applicable	
ETP Flag	31	1	Alphanumeric	Indicates w	hether the security is an	
				exchange traded product (ETP):		
				Code	Definition	
				Υ	Instrument is an ETP	
				N	Instrument is not an ETP	
				<space></space>	Not available	
ETP Leverage Factor	32	4	Integer	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.		es

				Leverage Factor is rounded to the nearest integer below, e.g. leverage factor 1 would represent leverage factors 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.	
Inverse Indicator	36	1	Alphanumeric	Indicates the directional relationship between the ETP and underlying index.	
				Code	Definition
				Y	ETP is an Inverse ETP
				Ν	ETP is not an Inverse ETP
				Example: An ETP Leverage Factor of 3 and an Inverse value of 'Y' indicates the ETP will decrease by a value of 3.	
Bloomberg	37	12	Alphanumeric	The composite ID that Bloomberg has	
ID				assigned to the security.	

5.11.3 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 <u>SEC Release Number 34-61595</u>.

In association with the Reg SHO rule change, Nasdaq introduced a Reg SHO Short Sale Price Test Restricted Indicator.

The Reg SHO Short Sale Price Test Restricted Indicator message is disseminated intra-day when a security has a price drop of 10% or more from the adjusted prior day's Nasdaq Official Closing Price (NOCP). Once a message with the "S" indicator is disseminated, all short sale orders entered for the given security will be subject to processing under Rule 201 (Alternative Bid Tick Rule) of Reg SHO for the remainder of the trading day or until a "C" action message is disseminated whichever is sooner.

In addition, Nasdaq supports a pre-opening spin of Reg SHO Short Sale Price Test Restricted Indicator messages for those securities in which Rule 201 will remain in effect for the current trading day.

Short Sale Restriction Indicator Message								
Name	Offset	Len	n Type Value/Description					
Tracking Number	0	2	Integer	Nasdaq internal tracking number				
Time Stamp	2	6	Integer	Time Stamp.				
Message Type	8	1	Alphanumeric	Y = Short Sale Restriction Indicator				
lssue 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 C.				
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 				

5.11.4 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.

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	Alphanumeric	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 C.	
Security Class	17	1	Alphanumeric	Indicates the primary listing market for the iss Allowable values are:	
				Code	Value
				Q	Nasdaq
				Ν	NYSE
				А	NYSE American
				Р	NYSE Arca
				Z	BATS
				V	Investors' Exchange, LLC
Adjusted Closing Price	18	4	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.	

5.11.5 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 inter	Nasdaq internal tracking number			
Time Stamp	2	6	Integer	Time Stamp.				
Message Type	8	1	Alphanumeric	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 C.				
Security Class	17	1	Alphanumeric	Indicates the primary listing market for the issu Allowable values are:				
				Code	Value			
				Q	Nasdaq			
				Ν	NYSE			
				А	NYSE American			
				Р	NYSE Arca			
				Z	BATS			
				v	Investors' Exchange, LLC			
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.				

5.11.6 End of Day Trade Summary

At the close of each trading day, Nasdaq will disseminate the following end of day trade summary messages for all active Nasdaq- and non-Nasdaq-listed securities. Nasdaq disseminates this message to ensure that NLS Plus subscribers have the correct daily volume information for all issues.

Name	Offset	Len	Туре	Value/Desc	ription		
Tracking Number	0	2	Integer	Nasdaq internal tracking number			
Time Stamp	2	6	Integer	Time Stamp.			
Message Type	8	1	Alphanumeric	J = End of D	ay Trade Summary		
Issue Symbol	9	8	Alphanumeric	Nasdaq-assigned indicator for issue for which the directory message is being generated. For details on Nasdaq symbology, please refer to Appendix C.			
Market Category	17	1	Alphanumeric	Denotes the are:	listing market for the issue. The allowable ve	alues	
				Code	Value		
				Q	Nasdaq		
				N	NYSE		
				А	NYSE American		
				Р	NYSE Arca		
				Z	BATS		
				V	Investors' Exchange, LLC		
Consolidated High Price	18	4	Price (4)	-	price of any high/low eligible transaction on red on the trading day.	Tapes A,	
Consolidated Low Price	22	4	Price (4)		price of any high/low eligible transaction on ⁻ ved on the trading day.	Tapes A,	
Consolidated Closing Price	26	4	Price (4)	The final last sale eligible transaction on Tapes A, B or C received on the trading day.			
Consolidated Volume	30	8	Integer	Reflects the total volume for the issue reported at the consolidated market level.			
Consolidated Open Price	38	4	Price (4)	The first las for Tapes A,	sale eligible transactions received on the Transactions received on the Transactions received on the Transactions and the transactions are the transactions are tr	ading day	

5.11.7 Long Form End of Day Trade Summary

At the close of each trading day, Nasdaq will disseminate the following end of day trade summary messages for all active Nasdaq- and non-Nasdaq-listed securities. Nasdaq disseminates this message to ensure that

NLS Plus subscribers have the correct daily volume information for all issues. This message only applies to securities that have exceeded the upper limit of a 4-byte price.

Name	Offset	Len	Туре	Value/Desc	ription		
Tracking Number	0	2	Integer	Nasdaq internal tracking number			
Time Stamp	2	6	Integer	Time Stamp.			
Message Type	8	1	Alphanumeric	j = End of Da	ay Trade Summary		
Issue Symbol	9	8	Alphanumeric	Nasdaq-assigned indicator for issue for which the directory message is being generated. For details on Nasdaq symbology, please refer to Appendix C.			
Market Category 17 1 Alphanumeric				Denotes the are:	listing market for the issue. The all	owable values	
				Code	Value		
				Q	Nasdaq		
				N	NYSE		
				А	NYSE American		
				Р	NYSE Arca		
				Z	BATS		
				V	Investors' Exchange, LLC		
Consolidated High Price	18	8	Price (4)	•	price of any high/low eligible transa ved on the trading day.	action on Tapes A,	
Consolidated Low Price	26	8	Price (4)		price of any high/low eligible transa ved on the trading day.	ction on Tapes A,	
Consolidated Closing Price	34	8	Price (4)	The final last sale eligible transaction on Tapes A, B or C received on the trading day.			
Consolidated Volume	42	8	Integer	Reflects the total volume for the issue reported at the consolidated market level.			
Consolidated Open Price	50	8	Price (4)	The first last for Tapes A,	sale eligible transactions received B or C.	on the Trading day	

5.11.8 End of Day Trade Summary - NextShares

At the close of each trading day, Nasdaq will disseminate the following end of day trade summary messages for all active Nasdaq listed NextShares securities. Nasdaq disseminates this message to ensure that NLS Plus subscribers have the correct daily volume information for all issues.

Name	Offset	Len	Туре	Value/Desc	ription		
Tracking Number	0	2	Integer	Nasdaq internal tracking number			
Time Stamp	2	6	Integer	Time Stamp	Time Stamp.		
Message Type	8	1	Alphanumeric	N = End of E	Day Trade Summary		
Issue Symbol	9	8	Alphanumeric	directory m	igned indicator for issue for which the essage is being generated. For details on abology, please refer to Appendix C.		
Market Category	17	1	Alphanumeric	Denotes the allowable va	e listing market for the issue. The alues are:		
				Code	Value		
				Q	Nasdaq Listed Issue		
Consolidated High Price	18	4	Price (4)	The highest price of any high/low eligible transactio on Tapes A, B or C received on the trading day. In Proxy Price format.			
NAV Offset Amount - High	22	4	Signed Price (4)	The NAV offset that should be applied to the Proxy Price.			
Consolidated Low Price	26	4	Price (4)	Please note: This is a signed (+/-) field. The lowest price of any high/low eligible transaction on Tapes A, B or C received on the trading day. In Proxy Price format.			
NAV Offset Amount - Low	30	4	Signed Price (4)	The NAV offset that should be applied to the Proxy Price.			
					e: This is a signed (+/-) field.		
Consolidated Closing Price	34	4	Price (4)		st sale eligible transaction on Tapes A, B or on the trading day. In Proxy Price format.		
NAV Offset Amount - Close	38	4	Signed Price (4)	The NAV off Price.	fset that should be applied to the Proxy		
				Please note	e: This is a signed (+/-) field.		
Consolidated Volume	42	8	Integer	Reflects the	total volume for the issue reported at the d market level.		
Consolidated Open Price	50	4	Price (4)	The first last sale eligible transactions received on the Trading day for Tapes A, B or C. In Proxy Price format			
NAV Offset Amount - Open	54	4	Signed Price (4)	The NAV off Price.	fset that should be applied to the Proxy		
				Dia series de la constante	e: This is a signed (+/-) field.		

5.11.9 IPO Information

Nasdaq will disseminate the following IPO messages from the UTP feeds for Initial Public Offerings for all Nasdaq-listed securities. Please note that NLS Plus filters the General Administrative Messages from the UTP feeds for IPO specific text as the General Administrative Messages are free-form text and not used solely for IPO messages only.

Name	Offset	Len	Туре	Value/Desc	ription
Tracking Number	0	2	Integer	Nasdaq internal tracking number	
Timestamp	2	6	Integer	Time Stamp).
Message Type	8	1	Alphanumeric	I = IPO Mes	sage
Issue Symbol	9	8	Alphanumeric	Nasdaq-assigned indicator for issue for which the trading action message is being generated. For deta on Nasdaq symbology, please refer to Appendix C.	
Security Class	17	1	Alphanumeric	Indicates the primary listing market for the issue. Allowable values are:	
			Code	Value	
				Q	Nasdaq
				N	NYSE
				А	NYSE American
				Р	NYSE Arca
				Z	BATS
				V	Investors' Exchange, LLC
Reference For Net Change	18	1	Alphanumeric	Reflects the allowable v	e current trading state for the issue. The alues are:
				Code	Value
				F	First Trade Price
				W	Underwriter Price
Reference Price	19	4	Price (4)	Reference Price	

5.11.10 Market-Wide Circuit Breaker (MWCB) Messaging

5.5.7.1 MWCB Decline Level Message

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

MWCB Decli	MWCB Decline Level Message						
Name	Offset	Length	Value	Notes			
Tracking Number	0	2	Integer	Nasdaq internal tracking number			
Timestamp	2	6	Integer	Time at which the MWCB Decline Level message was generated			
Message Type	8	1	Alphanumeric	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.			

5.5.7.2 MWCB Status Message

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

MWCB Breac	MWCB Breach Message						
Name	Offset	Length	Value	Notes			
Tracking Number	0	2	Integer	Nasdaq internal tracking number			
Timestamp	2	6	Integer	Time at which the MWCB Breaker Status message was generated			
Message Type	8	1	Alphanumeric	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			

5.11.11 IPO Quoting Period Update

Indicates the anticipated IPO quotation release time of a security.

IPO Quoting P Name	Offset	Length	Value	Notes	
Tracking	0	2	Integer	Nasdaq internal tracking number	
Number					
Timestamp	2	6	Integer	Time at which the IPQ Quoting Period Update	
				message was generated	
Message	8	1	Alphanumeric	K = IPO Quoting Period Update Message	
Туре					
Stock	9	8	Alphanumeric	Denotes the security symbol for the issue in the	
				Nasdaq execution system.	
IPO	17	4	Integer	Denotes the IPO release time, in seconds since	
Quotation				midnight, for quotation to the nearest second.	
Release Time					
				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	21	1	Alphanumeric	Code Description	
Quotation	21	1	Alphanameric		
Release				A Anticipated quotation release time	
				This value would be used when	
Qualifier				Nasdaq Market Operations initially	
				enters the IPO instrument for	
				release.	
				C IPO release canceled/postponed	
				This value would be used when	
				Nasdaq Market Operations cancels	
				or postpones the release of the IPO	
				instrument.	
				instrument.	
	22	4	Drice (4)	Depetes the IDO price to be used for introdeu	
IPO Price	22	4	Price (4)	Denotes the IPO price to be used for intraday	
				net change calculations.	
				Prices are given in decimal format with 6 whole	
				number places followed by 4 decimal digits. The	
				whole number portion is padded on the left	
				with spaces; the decimal portion is padded on	
				the right with zeros. The decimal point is	
				implied by position; it does not appear inside	
				the price field.	

5.8.10 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 Ha	lt					
Name	Offset	Length	Value	Notes		
Tracking Number	0	2	Integer	Nasdaq internal tracking number		
Time Stamp	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 the Nasdaq execution system		
Market Code	17	1	Alpha	Code	Value	
				Q	Nasdaq	
				В	ВХ	
				х	PSX	
Operational	18	1	Alpha			
Halt Action				Code	Value	
				н	Operationally Halted on the identified Market	
				Т	Operational Halt has been lifted and Trading resumed	

6 Contact Information

Questions about the NLS Plus entitlement, display guidelines may be directed to <u>Clientsuccess@nasdaq.com</u>.

Appendix A – Last Sale Processing

Issue Price-Level Statistics

For messaging efficiencies, NLS Plus provides raw trade data for the Nasdaq trading venues. If needed, firms may create their own algorithms for issue- and market center-level price statistics. To help in the process, Nasdaq offers the following guidelines.

a) Last Sale 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 Nasdaq cross-market 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 Plus includes the sale condition modifier. 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
@	Regular Settlement	Yes, if other levels do not overrule	Yes, if other levels do not overrule
с	Cash Settlement	No	No
Ν	Next Day Settlement	No	No
R	Seller Settlement	No	No

Code	Value	High/Low	Last Sale
F	Intermarket Sweep	Yes	Yes
0	Opening Print	Yes	Yes
4	Derivative Priced	Yes	No (except if first regular market trade of day)
5	Re-Opening Print	Yes	Yes
6	Closing Print	Yes	Yes
7	Qualified Contingent Trade (QCT)	No	No
<space></space>	Not applicable	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" codes are 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
Т	Extended Hours Trade	No	No
U	Extended Hours Trade – Reported Late or Out of Sequence	No	No
L	Sold Last – Reported Late But In Sequence	Yes	Yes
Z	Sold – Out of Sequence	Yes	No (except if first regular market trade of day)
<space></space>	Not applicable	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), Average Price (W), and Odd Lot Execution (o) codes.

Code	Value	High/Low	Last Sale
А	Acquisition	Yes	Yes
В	Bunched	Yes	Yes
D	Distribution	Yes	Yes
н	Price Variation Trade	No	No
М	Nasdaq Official Close Price (NOCP)	Yes for Nasdaq market center only or Nasdaq system-wide displays No for BX, PSX or	Yes for Nasdaq market center only or Nasdaq system-wide displays No for BX, PSX or
		Nasdaq/ FINRA TRF only displays	Nasdaq/ FINRA TRF only displays
0	Odd lot execution ⁴	No	No
Ρ	Prior Reference Price	Yes	No (except if first regular market trade of day)
Q	Nasdaq Official Opening Price (NOOP)	Yes for Nasdaq market center only or Nasdaq system-wide displays No for BX, PSX or Nasdaq/ FINRA TRF only displays	No
S	Split Trade	Yes	Yes
V	Contingent Trade	No	No

⁴ Please note that the consolidated trade feeds offered by the Nasdaq Security Information Processor (SIP) and the Securities Information Automation Corporation (SIAC) do not include odd lot execution data at this time. While Nasdaq OMX believes that odd lot executions should be included in volume statistics, a firm may choose to omit odd lot executions from the calculation if it needs volume numbers to match across multiple system platforms.

Code	Value	High/Low	Last Sale
w	Average Price Trade⁵	No	No
x	Cross Trade	Yes (if sent with an eligible Level 2 modifier)	Yes (if sent with an eligible Level 2 modifier)
x	Odd Lot Cross Trade	No	No
<space></space>	Not applicable	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 Plus does <u>not</u> 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 <u>Daily List product page</u> on the Nasdaq Trader website.

For NYSE-, NYSE MKT-, 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.

d) Consolidated Volume

As a reference point, Nasdaq includes the volume for the Issue Symbol as reported on the consolidated market data feed on the individual NLS Plus trade messages. The volume reflects the consolidated volume at the time that the NLS Plus trade message is generated.

For Nasdaq-listed issues, the consolidated volume is based on the real-time trades reported via NLS Plus and UTP Trade Data Feed (UTDF) for the issue symbol. Nasdaq calculates the real-time issue volume for its trading venues based on the NLS Plus trade messages. It then adds the real-time trading volume for the other (non-Nasdaq) trading venues as reported via the UTDF data feed.

⁵ For NLS Plus 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 MKT- and NYSE Arca-listed securities.

For non-Nasdaq-listed issues, the consolidated volume is based on trades reported via NLS Plus and SIAC's Consolidated Tape System (CTS) for the issue symbol. Nasdaq calculates the real-time issue volume for its trading venues based on the NLS Plus trade messages. It then adds the real-time trading volume for the other (non-Nasdaq) trading venues as reported via the CTS data feed.

Appendix B – Sale Condition Modifier Definitions

Sale Condition Modifier	Description
Acquisition (A)	A transaction made on the Exchange as a result of an acquisition.
Average Price Trade (W)	A trade where the price reported is based upon an average of the prices for transactions in a security during all or any portion of the trading day.
	Please note that the Nasdaq market center also uses this value to report stopped stock situations.
	For NLS Plus 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 MKT-, NYSE Arca and BATS-listed securities.
Bunched Trade (B)	A trade representing an aggregate of two or more regular trades in a security occurring at the same price either simultaneously or within the same 60-second period, with no individual trade exceeding 10,000 shares.
Bunched Sold Trades (G)	A bunched trade that is reported late.
Cash Sale (C)	A transaction that calls for the delivery of securities and payment on the same day the trade took place.
Cross Trade (X)	A Cross Trade a trade transaction resulting from a market center's crossing session.
Dot-T or Form-T (T)	A trade executed before or after the regular US market hours. Please note that the Dot-T modifier should be appended to all transactions that occur during the pre- and post-market sessions. The volume of Form-T trades will be included in the calculation of consolidated and market center volume. The price information in Dot-T trades will not be used to update high, low and last sale data for individual securities or indices since they occur outside of normal trade reporting hours.
Distribution (D)	Sale of a large block of stock in such a manner that the price is not adversely affected.
Extended Trading Hours - Sold Out of Sequence (U)	Trade reports used to identify extended trading hours trades that are reported more than 30 seconds after execution. Currently, the extended trading hours are comprised of pre- market trading from 7 a.m. to 9:30 a.m., Eastern Time (ET), and post-market trading from 4 p.m. to 8:00 p.m., ET.
	This sale condition would be similar to the existing "T" sale condition in that trades executed outside of market hours will not impact market center or consolidated high, low, or last sale prices for an issue. The transactions would, however, count toward issue and market volume.

The following definitions are included for informational purposes only.

Sale Condition Modifier	Description
Intermarket Sweep (F)	 Intermarket sweep order means a limit order for an NMS stock that meets the following requirements: When routed to a trading center, the limit order is identified as an intermarket sweep order; and Simultaneously with the routing of the limit order identified as an intermarket sweep order, one or more additional limit orders, as necessary, are routed to execute against the full displayed size of any protected bid, in the case of a limit order to sell, or the full displayed size of any protected offer, in the case of a limit order to buy, for the NMS stock with a price that is superior to the limit price of the limit order identified as an intermarket sweep order. These additional routed orders also must be marked as intermarket sweep orders.
Market Center Close Price (M)	Indicates the "Official" closing value as determined by a Market Center. This transaction report will contain the market center generated closing price. The "M" (Market Center Close Price) sale condition modifier shall only affect the Market Center Closing/Last Sale value and will not affect the consolidated market value.
Market Center Open Price (Q)	Indicates the "Official" opening value as determined by a Market Center. This transaction report will contain the market center generated opening price. The "Q" (Market Center Open Price) sale condition modifier shall only affect the Market Center Opening value and will not affect the consolidated market value. Direct data recipients that maintain individual market center open values should use this value as the official market center opening value and populate data displays accordingly
Next Day (N)	A transaction that calls for the delivery of securities between one and four days (to be agreed by both parties to the trade – the number of days are not noted with the transaction) after the trade date.
Odd Lot Transaction (o)	The Odd Lot sale condition modifier indicates that the execution size for a transaction was less than one round lot for the security. Please note that the consolidated trade feeds offered by the UTP Security Information Processor (UTP SIP) and the Securities Information Automation Corporation (SIAC) do not include odd lot execution data at this time.
Opening Prints (O)	The transaction or group of transactions reported as a result of a single-priced opening event by the Market Center.
Price Variation Trade (H)	The Price Variation Trade sale condition code is used to denote a regular market session trade transaction that carries a price that is significantly away from the prevailing consolidated or primary market value at the time of the transaction.
Prior Reference Price (P)	An executed trade that relates to an obligation to trade at an earlier point in the trading day or that refers to a prior referenced price. This may be the result of an order that was lost or misplaced or was not executed on a timely basis.
Seller (R)	A Seller's option transaction is a special transaction that gives the seller the right to deliver the stock at any time within a specific period, ranging from not less than four calendar days to not more than sixty calendar days.
Sold Out of Sequence (Z)	Sold Out of Sequence is used when a trade is printed (reported) out of sequence and at a time different from the actual transaction time.
Sold Last (L)	Sold Last sale condition modifier is used when a trade prints in sequence but is reported late. A Sold Last transaction should only impact the consolidated last sale price for an issue if the market center reporting the sold last transaction also reported the transaction setting the current last sale price.

Sale Condition Modifier	Description
Split Trade (S)	An execution in two markets when the specialist or Market Maker in the market first receiving the order agrees to execute a portion of it at whatever price is realized in another market to which the balance of the order is forwarded for execution.
Derivatively Priced (4)	A transaction that constituted the trade-through was the execution of an order at a price that was not based, directly or indirectly, on the quoted price of the NMS stock at the time of execution and for which the material terms were not reasonably determinable at the time the commitment to execute the order was made.
Re-Opening Prints (5)	The transaction or group of transactions reported as a result of a single-priced re-opening event by the Market Center.
Closing Prints (6)	The transaction or group of transactions reported as a result of a single-priced closing event by the Market Center.

Appendix C - 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 <u>Ticker Symbol Convention</u> page on the Nasdaq Trader website.

For NYSE-, NYSE MKT- and NYSE Arca-listed securities with subordinate issue types, please refer to <u>Ticker</u> <u>Symbol Convention</u> page on the Nasdaq Trader website

Appendix D – 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. 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
Т1	Halt News Pending
Т2	Halt News Disseminated
Т5	Single Stock Trading Pause In Effect
Т6	Regulatory Halt — Extraordinary Market Activity
Т8	Halt ETF
T12	Trading Halted; For Information Requested by Listing Market
H4	Halt Non-Compliance
Н9	Halt Filings Not Current
H10	Halt SEC Trading Suspension
H11	Halt Regulatory Concern
01	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
ММСО	Market Wide Circuit Breaker Halt – Carry over from previous day
IPO1	IPO Issue Not Yet Trading
M1	Corporate Action
M2	Quotation Not Available
<space></space>	Reason Not Available

REASON CODES FOR QUOTATION/TRADING RESUMPTION ACTIONS		
Code	Value	
ТЗ	News and Resumption Times	
Т7	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	
С3	Issuer News Not Forthcoming; Quotations/Trading To Resume	
C4	Qualifications Halt ended; Maintenance Requirements Met; Resume	
С9	Qualifications Halt Concluded; Filings Met; Quotes/Trades To Resume	
C11	Trade Halt Concluded By Other Regulatory Auth.; Quotes/Trades Resume	
мwcq	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></space>	Reason Not Available	

For non-Nasdaq-listed issues, Nasdaq abides by any regulatory trading halts and trading pauses instituted by the primary or listing market as appropriate. While Nasdaq does support Trading Action messages for these securities, it is unable to support the full range of Reason Code values.

For the current list of regulatory halts for both Nasdaq- and non-Nasdaq-listed securities, please refer to the <u>Trading</u> <u>Halts page</u> on the Nasdaq Trader website.

Appendix E - Issue Classification Values

Identifies the security class for the issue as assigned by Nasdaq

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

Appendix F - Is	sue Sub-Ty	pe Values
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CODES FOR ISS	UE CLASSIFICATION VALUES
Code	Value
А	Preferred Trust Securities
AI	Alpha Index ETNs
В	Index Based Derivative
С	Common Shares
СВ	Commodity Based Trust Shares
CF	Commodity Futures Trust Shares
CL	Commodity-Linked Securities
CM	Commodity Index Trust Shares
СО	Collateralized Mortgage Obligation
СТ	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	Exchange Traded Managed Funds
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
	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
0	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
RF	REIT
RU	Commodity-Redeemable Currency-Linked Securities
S	SEED
SC	Spot Rate Closing
SI T	Spot Rate Intraday Tracking Stock
ТС	Tracking Stock Trust Certificates
TU	Trust Units
10	

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

* Nasdaq is planning to introduce Exchange Traded Managed Funds (NextShares) in 2015. NextShares 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.

Appendix G – Documentation Version Control Log

NLS Plus Version 1.00

NLS Plus specification document released to public.

NLS Plus Version 1.00

NLS Plus specification updated to reflect availability of compressed TCP/IP protocol option.

NLS Plus specification document updated to include BX listing market codes to be introduced upon SEC approval for the new Nasdag listing rules.

NLS Plus Version 1.00

NLS Plus specification updated to reflect correct type code ("J") for End of Day Trade Summary messages.

NLS Plus Version 1.00

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

NLS Plus Version 1.00

Nasdaq added a note to the sale condition matrixes about its standardization of the Average Price Trade code. Please note that Nasdaq uses the "W" sale condition code for all exchange-listed issues.

Nasdaq also added Appendix B – Sale Condition Modifier Definitions for reference purposes.

NLS Plus Version 1.00

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

NLS Plus Version 1.00

Nasdag added a new Administrative Message – IPO Messages.

NLS Plus Version 1.00 September 20, 2011

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

NLS Plus Version 1.00

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

NLS Plus Version 1.00

Released a new version of the NLS Plus 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:

November 4, 2010

November 11, 2010

October 12, 2010

June 23, 2011

November 1, 2011

November 6, 2012

April 6, 2011

September 23, 2010

July 26, 2010

- o 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 Plus Version 1.00

January 8, 2013

January 9, 2013

Corrected the System Event message to include the "S" and "E" event codes.

NLS Plus Version 1.00

Released a new version of the NLS Plus 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 Plus Version 1.00

March 11, 2013

April 12, 2013

May 29, 2013

July 10, 2013

Released a new version of the NLS Plus 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 Plus Version 1.00

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

• Changed all references from NYSE Amex to NYSE MKT.

NLS Plus Version 1.00

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

NLS Plus Version 2.00

The NLS Plus 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 Plus Version 2.00

August 2, 2013

The NLS Plus 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 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

October 1, 2013

NLS Plus Version 2.00

The NLS Plus Specification was updated to reflect the following changes:

- Clarified interpretation of the levels in the MWCB Decline Level Message
- Updated multiple data fields to Alphanumeric from Alphabetic
- Changed the data type for multiple price fields to Price (4) and Price (8)
- Added Bloomberg ID to the Symbol Directory message

NLS Plus Version 2.00

December 5, 2014

The NLS Plus 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 Plus Version 2.1

March 6, 2015

The NLS Plus Specification was updated to include:

- Addition of the following messages:
 - o ETMF Trade Report
 - Trade Cancel/Error for ETMF trades
 - Trade Correction for ETMF trades
- 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 Timestamp Granularity increased to nanoseconds
- 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 ETMF orders, quotations and trades in NAVbased format, if at all possible. For display use, Nasdaq is including the NAV offset amount data points on QBBO, NLS and NLS Plus for these purposes. Firms may also calculate the NAV offset amounts 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 Plus Version 2.1

June 30, 2015

The NLS Plus 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 Plus Version 2.1

October 30, 2015

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

NLS Plus Version 2.1 December 23, 2015

The NLS Plus Specification was updated to reflect the following changes: Section 5.5 - Trade correction for non-ETMFs- Corrected field offsets

NLS Plus Version 2.1

January 19, 2016

The NLS Plus Specification was corrected to include the consolidated volume on the following messages:

- Trade Correction for ETMF trades
- Trade Cancel/Error for ETMF trades

NLS Plus Version 2.1

March 2, 2016

The NLS Plus Specification was updated to reflect the following changes:

- Updated field names for NextShares Trade messages to NAV "offset".
- Addition of the new NextShares End of Day Summary message (Message Type = N)

NLS Plus Version 2.1

September 12, 2017

The NLS Plus Specification was updated to reflect the following changes:

- 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)
 - End of Day Trade Summary (Type J)
 - IPO Information (Type I)
 - Adjusted Closing Price (Type G)

NLS Plus Version 2.2

March 3, 2018

Released a new version of NLS Plus documentation to reflect the new Operational Halt message (Section 5.8.10) to indicate the current Operational Status of a security to the trading community.

NLS Plus 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 Plus 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 Plus 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 Plus Version 3.0 April 6, 2021

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

July 14, 2022

NLS Plus Version 3.0

Due to the launch of non-integer leverage factors, updated ETP Leverage Factor from section 5.11.2 page 34.

NLS Plus Version 3.0

May 28, 2024

In accordance with recent SEC rule change, per the <u>Equity Trader Alert</u>, Nasdaq will no longer be disseminating Sale Condition code "N" Next Day Settlement on respective trade feeds.