

Nasdaq BX Last Sale (BLS)

Version 2.1

1 Overview

1.1 Product Description

Nasdaq BX Last Sale (BLS) is a direct data feed product offered by Nasdaq to support the BX Trading and Listing Market upon launch. BLS covers the full range of issues including Nasdaq-, New York Stock Exchange (NYSE)-, NYSE American-, NYSE Arca-, BATS-, IEXG-, and US regional exchange-listed securities. BLS provides real-time, intra-day trade data from the BX execution system.

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

For pricing and ordering information:

Refer to Market Data section of the Nasdaq Trader website.

Contact the Nasdaq Investment Intelligence at +1 301 978 5307 or +45 33 93 33 66.

2 Network Protocol Options

For direct data feed subscribers, Nasdaq BX will offer BLS in the following protocol options:

- o SoupBinTCP
- o MoldUDP64

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

3 Architecture

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

4 Data Types

All integer fields are unsigned big-endian (network byte order) binary encoded numbers.

Prices are integer fields, supplied with an associated precision. 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.

Timestamps reflects the BX system time at which the outbound message was generated. BX 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 Messages is used to signal key market or data feed control events.

System Event Message								
Name	Offset	Len	Value	Notes				
Tracking Number	0	2	Integer	Nasdaq internal tracking number				
Time Stamp	2	6	Timestamp	Time Stamp				
Message Type	8	1	Alphanumeric	S = System Event Message				
Event Code	9	1	Alphanumeric		type of event for which the message is ted. The allowable			
				Code	Value			
				0	Start of Transmissions: Denotes that the BX Last Sale has started its daily transmission schedule.			
				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.
S	Start of System Hours: This message indicates that Nasdaq is open and ready to start accepting orders.
М	End of Market Hours: Denotes the end of the regular US session.
Е	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 BX Last Sale has ended its daily transmission schedule.

5.2 Trade Report

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

Trade Report Message								
Name	Offset	Len	Туре	Value/Desci	ription			
Tracking Number	0	2	Integer	Nasdaq inter	rnal tracking number			
Time Stamp	2	6	Timestamp		Denotes the time stamp of the BX system that generated the trade transaction.			
Message Type	8	1	Alphanumeric	T = Trade Re	port			
Market Center Identifier	9	1	Alphanumeric		BX market system that generated port message. The allowable			
				Code	Value			
				В	BX execution system			
				L	Over the Counter Trade Reporting Facility (ORF)			
Issue Symbol	10	8	Alphanumeric	security for v	security symbol for the issue of the which the trade report is being For details on symbology, please refer B.			
Security Class	18	1	Alphanumeric	Indicates the Allowable va	e primary listing market for the issue. slues are:			
				Code	Value			
				Q	Nasdaq			
				N	NYSE			
				А	NYSE Aermican			
				Р	NYSE Arca			
				Z	BATS			
				V	Investors' Exchange, LLC			
				В	BX-listed securities (Pending SEC approval of listing exchange)			

Trade Control Number	19	10	Alphanumeric	Indicates the BX system internal control number associated with the given trade transaction. Please note that the Trade Control Number is specific to the BX host 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	4	Price (4)	Denotes the report price on the trade transaction.		
Trade Size	33	4	Integer	Indicates the reported number of shares on the trade transaction.		
Sale Condition Modifier	37	4	Alphanumeric	Sale condition modifier consists of four levels as defined below.		
Sale Condition Modifier – Level 1	37	1	Alphanumeric	Used for Settle Allowable value	ment Type information. es are:	
Level 1				Code	Value	
				@	Regular Settlement	
				С	Cash Settlement	
				N	Next Day Settlement	
				R	Seller Settlement	

Sale Condition Modifier – Level 2	38	1	Alphanumeric		For Reg NMS eligible securities, this sale condition level is used to define the trade through reason code. For the BX trading market, the allowable codes are:						
				Code	Code	Value					
				F	Intermarket Sweep						
					<space></space>	Not applicable					
				le	evel is used to id	S securities, this sale condition lentify cross transactions. For es, the allowable codes are:					
					Code	Value					
					0	Opening Print					
					5	Re-Opening Print					
			6							6	Closing Print
					<space></space>	Not applicable					
Sale Condition Modifier –	39	1	Alphanumeric	Used for Extended Hours or Sold Codes. Allowable values are:							
Level 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					

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											
				А	Acquisition													
				В	Bunched													
				D	Distribution													
				Н	Price Variation Transaction													
				М	BX Official Close Price – for BX-listed securities only													
				Р	Prior Reference Price													
				Q	BX Official Opening Price – for BX-listed securities only													
				S	Split Trade													
				W	Weighted Average Price													
					Х	Cross Trade – For BX- listed securities only												
				0	Odd lot execution													
																		х
				<space></space>	Not applicable													

5.3 NextShares Trade Report

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

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

Time Stamp	2	6	Timestamp	Denotes the time stamp of the BX system that generated the NextShares trade transaction. Please note that the BX and TRF systems maintain separate time stamps.	
Message Type	8	1	Alphanumeric	M = NextSha	ires Trade Report
Market Center Identifier	9	1	Alphanumeric	generated th	Nasdaq market system that ne trade age. The allowable
				Code	Value
				В	BX execution system
				L	Nasdaq/FINRA Trade Reporting Facility (TRF)
NextShares Symbol	10	8	Alphanumeric		symbol of the NextShares e trade report is being
Security Class	18	1	Alphanumeric	Indicates the primary listing market for the issue. Allowable values are:	
				Code	Value
				Q	Nasdaq-Listed Issue
Trade Control Number	19	10	Alphanumeric		e source's internal control ociated with the given ction.
				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)		proxy price on the transaction.
Trade Size	33	4	Integer		e reported number of shares transaction.

NAV Premium/Discount Amount	37	4	Signed Price (4)	should l	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			modifier consisted below.	s of four
Sale Condition Modifier – Level 1	41	1	Alphanumeric		Used for Settlement Type informati Allowable values are:		ation.
				Code	Value	2	
				J	-	/ Price ement	
				@	Regu	lar Settlement	
				С	Cash	Settlement	
				Ν	Next Settle	Day ement	
				R	Seller	Settlement	
Sale Condition Modifier – Level 2	42	1	Alphanumeric		h Exemp	egulation NMS Tra otion Codes. es are:	ade
				Code		Value	
				F		Intermarket Swe	ер
				0		Opening Print	
				5		Derivative Priced	
						Re-Opening Print	
				6		Closing Print	
				<space< td=""><td>e></td><td>Not applicable</td><td></td></space<>	e>	Not applicable	

Sale Condition Modifier – Level 3	43	1	Alphanumeric		ended Hours or Sold wable 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

Sale Condition Modifier – Level 4	44	1	Alphanumeric	Please note	cial sale condition codes. that this field is case owable values are:
				Code	Value
				А	Acquisition
				В	Bunched
				D	Distribution
				Н	Price Variation Transaction
				M	Nasdaq Official Close Price (NOCP)
				Р	Prior Reference Price
				Q	Nasdaq Official Opening Price (NOOP)
				S	Split Trade
				W	Average Price Trade ¹
				Х	Cross Trade
				0	Odd lot execution
				х	Odd Lot Cross execution
				<space></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.

5.4 Trade Cancel/Error

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

Trade Cancel/Error Message									
Name	Offset	Len	Туре	Value/Descrip	otion				
Tracking Number	0	2	Integer	Nasdaq intern	nal tracking number				
Time Stamp	2	6	Timestamp		Denotes the time stamp of the BX system that generated the trade cancel/error message.				
Message Type	8	1	Alphanumeric	X = Trade Can	cel/Error				
Market Center Identifier	9	1 Alphanumeric		9 1 Alphanu			BX market system that e trade report and cancel/error e allowable		
				Code	Value				
				В	BX Execution System				
				L	Over the Counter Trade Reporting Facility (ORF)				
Issue Symbol	10	8	Alphanumeric	the trade rep	ecurity symbol for the issue for which ort is being generated. For details r , please refer to Appendix B.				
Security Class	18	1	Alphanumeric	Indicates the p	primary listing market for the issue. ues are:				
				Code	Value				
				Q	Nasdaq				
				N	NYSE Listed				
				А	NYSE American				
				Р	NYSE Arca				
				Z	BATS				
				V	Investors' Exchange, LLC				
				В	BX-listed securities (Pending SEC approval of listing exchange)				

Original Trade Control Number	19	10	Alphanumeric	Indicates the BX system internal control number associated with the given trade transaction. Please note that the Trade Control Number is specific to the BX host 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.

5.5 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/Err			геропеи.	
Name	Offset	Len	Туре	Value/Description
Tracking Number	0	2	Integer	Nasdaq internal tracking number
Time Stamp	2	6	Timestamp	Denotes the time stamp of the BX system that generated the trade cancel/error
Message Type	8	1	Alphanumeri c	O = Trade Cancel/Error
Market Center	9	1	Alphanumeri c	Denotes the Nasdaq market system that generated the
Identifier				trade report and cancel/error
				Code Value
				Q Nasdaq Execution
				No odo o/FIND A
				L Nasdaq/FINRA Trade Reporting Facility (TRF)

Issue Symbol	10	8	Alphanumeric	Denotes the security symbol for the issue for which the trade report is being generated. For details on 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-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 Trade Price	29	4	Price (4)	Reported proxy price for the transaction.
Original NAV Premium/Discount	33	4	Signed Price (4)	Original NAV premium or discount originally applied to the Proxy Price.
Amount				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.

5.6 Trade Correction

The following message is used in the event that a 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	Timestamp	Denotes the time stamp of the BX system that generated the trade		

				correction message.			
Message Type	8	1	Alphanumeric	C = Trade Correction			
Market Center Identifier	9	1 Alphanumeric		Denotes the BX market system that generated the trade report and cancel/error message. The allowable values are:			
				Code Value			
				B BX Execution System			
				L Over the Counter Trade Reporting Facility (ORF)			
Issue Symbol	10	8	Alphanumeric	Denotes the BX-assigned issue symbol for which the trade correction message is being generated. For details on BX 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 Listed			
				N NYSE Listed			
				A NYSE American			
				P NYSE Arca			
				Z BATS			
				V Investors' Exchange, LLC			
				B BX Listed Issue (Pending SEC approval of listing exchange)			
Original Trade Control Number	19	10	Alphanumeric	Indicates the BX internal control number associated with the given trade transaction. Please note that the Trade Control Number is specific to the BX host system reflected in the Market Center ID field.			
Original Trade Price	29	4	Price (4)	Reported price on the original trade transaction.			
Original Trade Size	33	4	Integer	Reported number of shares on the original trade transaction.			
Original Sale Condition Nasdaq BX La	37 st Sale (B	4 LS)	Alphanumeric	Indicates sale condition modifiers associated with the original			

Modifier				transaction.
Corrected Trade Control Number	41	10	Alphanumeric	Indicates the BX internal control number associated with the adjusted trade transaction. Please note that the Trade Control Number is specific to the BX host system reflected in the Market Center ID field.
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.

5.7 Trade Correction for NextShares

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

Trade Correction Messa	ge			
Name	Offset	Len	Туре	Value/Description
Tracking Number	0	2	Integer	Nasdaq internal tracking number
Time Stamp	2	6	Timestamp	Denotes the time stamp of the BX system that generated the trade correction message.
Message Type	8	1	Alphanumeric	Z = Trade Correction
Market Center Identifier	9	1	1 Alphanumeric	Denotes the BX market system that generated the trade report and cancel/error message. The allowable values are:
				Code Value
				B BX Execution System
				L Nasdaq/FINRA Trade Reporting Facility (TRF)
Issue Symbol	10	8	Alphanumeric	Denotes the assigned issue symbol of the security for which the trade correction message is

				being generated. For details on 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-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 Trade Price	29	4	Price (4)	Reported proxy price on the original trade transaction.
Original NAV Premium/Discount	33	4	Signed Price (4)	Original NAV premium or discount originally applied to the Proxy Price.
Amount				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 internal control number associated with the adjusted trade transaction.
				Please note that the Trade Control Number is specific to the BX 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	59	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	67	4	Integer	Indicates the number of shares for the corrected trade transaction.
Corrected Sale Condition Modifier	71	4	Alphanumeric	Denotes the sale condition modifiers associated with the corrected trade transaction.

5.8 Administrative Messages

To help firms create a full display, BX supports the following two administrative messages: (1) Trading Action and (2) Symbol Directory.

5.8.1 Stock Trading Action

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

Prior to the start of system hours, BX will send out a Trading Action spin. In the spin, BX will send out a Stock Trading Action message with the "T" (Trading Resumption) for all Nasdaq-, BX-, and other exchange-listed securities that are eligible for trading on the BX market 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 BX platform at the start of the system hours. Please note that securities may be halted in the BX system for regulatory or operational reasons.

After the start of system hours, BX 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, is released for quotation, or is released for trading.

Trading Action Message							
Name	Offset	Len	Туре	Value/Descript	ion		
Tracking Number	0	2	Integer	Nasdaq internal tracking number			
Time Stamp	2	6	Timestamp	mestamp Time Stamp.			
Message Type	8	1	Alphanumeric	H = Trading Action			
Issue Symbol	9	8	Alphanumeric	Denotes the security symbol for which the trading action message is being generated. For details on 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 N	Nasdaq NYSE
				А	NYSE American
				Р	NYSE Arca
				Z	BATS
				V	Investors' Exchange, LLC
				В	BX-listed securities (Pending SEC approval of listing exchange)
Current Trading State	18	1	Alphanumeric		current trading state for the issue. le values are:
				Code	Value
				Н	Halted or paused on across all U.S. equity markets
				Q	Quotation only period for cross- market halt or pause
				Т	Trading on BX
Reason	19	4	Alphanumeric		Market Ops or Market Watch code for state change. Refer to Appendix C for e list.

5.8.2 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	Length	Value	Notes		
Tracking	0	2	Integer	Nasdaq internal tracking number		
Number						

Timestamp	2	6	Timestamp	Time at which the market participant position 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

5.8.3 Stock Directory

At the start of each trading day, BX disseminates stock directory messages for all active symbols in the BX system.

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 DIRECT	ORY					
Name	Offset	Length	Value	Notes		
Tracking Number	0	2	Integer	Nasdaq internal tracking number		
Timestamp	2	6	Timestamp	Time at which the directory message was generated. Refer to Data Types for field processing notes.		
Message Type	8	1	"R"	Stock Directory Message		
Stock	9	8	Alphanumeric	Denotes the security symbol for the issue in the Nasdaq execution system.		
Market Category	17	1	Alphanumeric	Indicates Listing market or listing market tier for the issue		
				Code Definition		
				Nasdaq-Listed Instruments		
				Q Nasdaq Global Select Market SM		
				G Nasdaq Global Market SM		

				S	Nasdaq Capital Market®
				Non Nasda	ra Listad
				Non-Nasdaq-Listed Instruments	
				N	New York Stock Exchange
				IN	(NYSE)
				Α	NYSE American
				Р	NYSE Arca
				Z	BATS Z Exchange
				V	Investors' Exchange, LLC
				<space></space>	Not available
Financial	18	1	Alphanumeric	For Nasdag	listed issues, this field
Status		_	,		nen a firm is not
Indicator					ce with Nasdaq continued
				listing requi	
				Code	Definition
				Nasdaq-Lis	ted Instruments
				D	Deficient
				E	Delinquent
				Q	Bankrupt
				S	Suspended
				G	Deficient and
					Bankrupt
				Н	Deficient and
					Delinquent
				J	Delinquent and
					Bankrupt
				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 Instrument	
				<space></space>	Not available. Firms
				Jopaces	should refer to SIAC
					feeds for code if
					needed.
Nasdaq BX Last	'Sale (BLS)	l	1 1	22

Round Lot Size	19	4	Integer	Denotes the number of shares that represent a round lot for the issue		
Round Lots Only	23	1	Alphanumeric	Indicates if entry for iss	Nasdaq system limits order sue	
				Code	Definition	
				Υ	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	ne security class for the issue	
Classification				as assigned	by Nasdaq.	
					dix for allowable	
Issue Sub-	25	2	Alphanumeric	values.	a a casurity sub-type for the	
Type	23	2	Alphanument	Identifies the security sub-type for the issue as assigned by Nasdaq. See Appendix for allowable values.		
Authenticity	27	1	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 displays.		
				Codo	Definition	
				Code	Definition Live/Production	
				 T	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)	

				l N	Issue is not restricted	
				<space></space>	Threshold Indicator not available	
IPO Flag	IPO Flag 29 1 A			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).		
				Code	Definition	
					ted 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-Nasda	q-Listed	
				Instrument		
LULD	30	1	Alphanumeric	<space></space>	Not available	
Reference Price Tier				Indicates which Limit Up / Limit Dow price band calculation parameter is be used for the instrument. Refer to LULD Rule for details.		
				Code	Definition	
				1	Tier 1 NMS Stocks and select ETPs	
				2	Tier 2 NMS Stocks	
				<space></space>	Not available	
ETP Flag	31	1	Alphanumeric	Indicates wh exchange tra (ETP):	ether the security is an ded product	
				Code	Definition	
				Y	Instrument is an ETP	
				N	Instrument is not an ETP	
				<space></space>	Not applicable	
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. 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 a calculation p	used for LULD Tier I price band ourposes.	
Inverse Indicator	36	1	Alphanumeric	Indicates the directional relationship between the ETP and underlying index.		
				Code	Definition	
				Υ	ETP is an Inverse ETP	
				N	ETP is not an Inverse ETP	
				Example: An ETP Leverage Factor of 3		
				and an Inverse value of 'Y' indicates the		
				EIP Will dec	rease by a value of 3.	

5.8.4 Market-Wide Circuit Breaker (MWCB) Messaging

5.8.4.1 MWCB Decline Level Message

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

MWCB Declin	MWCB Decline Level Message						
Name	Offset	Length	Value	Notes			
Tracking Number	0	2	Integer	Nasdaq internal tracking number			
Timestamp	2	8	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.			

5.8.4.2 MWCB Status Message

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

MWCB Breach	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			

5.8.5 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	Operational Halt						
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	BX		
				X	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 BLS entitlement and display guidelines may be directed to Clientsuccess@nasdaq.com.

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.

BLS carries only trade transactions executed on the BX system. Since BLS is <u>not</u> 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

BLS only provides raw trade data from the BX execution system. If needed, firms should create their own algorithms for issue- and market center-level statistics. To help in the process, BX 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 BX 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, BLS includes the sale condition modifier for the BX execution system 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.

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
С	Cash Settlement	No	No	Yes
N	Next Day Settlement	No	No	Yes
R	Seller Settlement	No	No	Yes

Sale Condition - Level 2

For Reg NMS eligible securities, this sale condition level is used to define the trade through reason code. For the BX trading market, the allowable codes are:

Code	Value	High/Low	Last Sale	Volume
F	Intermarket	Yes	Yes	Yes
	Sweep Order			
J	Proxy Price Settlement	Yes, if other levels do not overrule	. '	Yes, if other levels do not overrule

For non-Reg NMS securities, this sale condition level is used to identify cross transactions. For the BX listed securities, the allowable codes are:

Code	Value	High/Low	Last Sale	Volume
0	Opening Print	Yes	Yes	Yes
5	Re-Opening Print	Yes	Yes	Yes
6	Closing Print	Yes	Yes	Yes
<space></space>	Not applicable	See other	See other	See other
		levels	levels	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 ORF 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
Т	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></space>	Not applicable	See other levels	See other levels	See other levels

Sale Condition – Level 4 indicates special trading situations.

For the BX execution system, this sale condition level is used to denote when a trade record contains the BX Official Opening Price or BX Official Closing Price values.

Since BX also reports the underlying cross execution transaction to the tape, the BX Opening and Closing 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, BX 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
А	Acquisition	Yes	Yes	Yes
В	Bunched	Yes	Yes	Yes
D	Distribution	Yes	Yes	Yes
Н	Price Variation Trade	No	No	Yes
M	BX Official Close Price	Yes for BX market center only or BX system- wide displays No for BX/ FINRA TRF only displays	Yes (for BX market center only or BX system- wide displays only)	No
0	Odd lot execution	No	No	Yes [†]
Р	Prior Reference Price	Yes	No (except if first regular market trade of day)	Yes

Code	Value	High/Low	Last Sale	Volume
Q	BX Official Opening Price	Yes for BX market center only or BX system- wide displays No for BX/ FINRA TRF only displays	No	No
S	Split Trade	Yes	Yes	Yes
W	Weighted Average Price	No	No	Yes
х	Cross Trade – For BX-listed securities only	Yes (if sent with an eligible Level 2 modifier)	Yes (if sent with an eligible Level 2 modifier)	Yes
х	Odd Lot Cross Trade	No	No	Yes
<space></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

BLS 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. Nasdaq offers several products to support the BX and Nasdaq-listed securities: For Nasdaq-listed securities, firms may obtain dividend information via the Nasdaq Daily List product page on the Nasdaq Trader website

For NYSE-, NYSE American-, NYSE Arca-, BATS-, IEX-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.

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

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

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 all issue types, Nasdaq and/or BX may also halt trading for operational reasons. Nasdaq and/or BX will send out a trading action message to inform its market participants when the trading status of an issue changes. For informational purposes, Nasdaq and BX also attempt to provide the reason for each trading action update. For bandwidth efficiency reasons, Nasdaq and BX use 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 Security Trading Pause In Affect	
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	
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></space>	Reason Not Available

REASON CODES FOR QUOTATION/TRADING RESUMPTION ACTIONS		
Code	Value	
Т3	News and Resumption Times	
Т7	Single Security 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	
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 and BX-Listed Securities)	
IPOE	IPO Security — Positioning Window Extension (Nasdaq and BX-Listed Securities)	
<space></space>	Reason Not Available	

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

Appendix D - Issue Classification Values

Identifies the security class for the issue as assigned by Nasdaq

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

Appendix E - Issue Sub-Type

CODES FOR I	SSUE CLASSIFICATION VALUES	
Code	Value	
Α	Preferred Trust Securities	
Al	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	
1	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	
0	Open Ended Mutual Fund	
Р	Privately Held Security	
PP	Poison Pill	
PU	Partnership Units	
Q	Closed-End Funds	
R	Reg-S	
	Last Šale (BLS)	

RC	Commodity Podoomable Commodity Linked Societies
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
Т	Tracking Stock
TC	Trust Certificates
TU	Trust Units
U	Portal
V	Contingent Value Right
W	Trust Issued Receipts
WC	World Currency Option
Х	Trust
Υ	Other
Z	Not Applicable

Appendix F – Documentation Version Control Log

May 28, 2024: BLS Version 2.1

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.

July 21, 2022: BLS Version 2.1

Due to the launch of non-integer leverage factors, updated the Value/Description field of ETP Leverage Factor from section 5.8.3 page 25.

May 3, 2018: BLS Version 2.1

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.

March 3, 2018: BLS Version 2.2

Released a new version of Nasdaq BX Last Sale documentation to add a new Operational Halt message (Section 5.8.5) to indicate the current Operational Status of a security to the trading community.

September 12, 2017: BLS Version 2.1

The BLS 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)

March 27, 2015: BLS Version 2.1

The BLS Specification was updated to reflect the following change:

- Increased Timestamp Length to reflect nanosecond granularity
- Addition of (Inactive) Exchange Traded Managed Funds (NextShares) changes.
- NextShares are planned to list and begin trading on Nasdaq on 10/1/2015. There are currently no plans for them to trade on BX. Should they begin trading on BX, these inactive (grayed out fields) will be activated to allow NextShares data to flow on BLS.

December 5, 2014: BLS Version 2.00

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

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

October 1, 2013: BLS Version 2.00

The BLS Specification was updated to reflect the following changes:

Conversion to a binary format

August 2, 2013: BLS Version 2.00

The BLS 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

July 10, 2013: BLS Version 2.00

The BLS Specification was updated to reflect the following changes:

Added Enhanced Symbol Directory

Added Market-Wide Circuit Breaker (MWCB) Messaging

o MWCB Decline Level Message

o 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' Sale Condition Level 4

April 23, 2013: BLS Version 1.1

Nasdaq added the following Event Codes in the System Event Message:

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

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

March 11, 2013: BLS Version 1.1

Nasdaq 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

January 9, 2013: BLS Version 1.1

Nasdag added the following Trading Action Reason Code:

MWC0 - Market Wide Circuit Breaker Halt – Carry over from previous day

January 8, 2013: BLS Version 1.1

Nasdaq removed the Trading Action State, "P", from the Stock Trading Message.

November 6, 2012: BLS Version 1.1

Released a new version of the BLS 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:

- o LUDP Volatility Trading Pause
- o MWC1 Market Wide Circuit Breaker Halt Level 1
- o MWC2 Market Wide Circuit Breaker Halt Level 2
- o MWC3 Market Wide Circuit Breaker Halt Level 3
- o MWCQ Market Wide Circuit Breaker Resumption

Removed the Trading Stat, "V", related to the Volatility Guard Program.

November 2, 2011: BLS Version 1.1

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

July 14, 2010: BLS Version 1.1

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

July 2, 2010: BLS Version 1.1

Nasdaq added a new Trading State code value of "V" to the Stock Trading Action message to denote a Nasdaq Volatility Guard trading pause.

May 25, 2010: BLS Version 1.1

Nasdaq added two new Trading Action Reason code values (T5 and T7) for single security trading pause situations.

January 26, 2010: BLS Version 1.1

Released a new version of the BLS 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