BX GLIMPSE™ 5.0

ITCH is the revolutionary Nasdaq outbound protocol

Nasdaq

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1   Overview

A complement to the Nasdaq BX TotalView-ITCH real-time data feed product, Nasdaq BX GLIMPSE™ is a point-to-point data feed connection that provides direct data feed customers with the current state of the Nasdaq execution system with full market participant attribution. Nasdaq BX GLIMPSE™ uses the same data formats as the BX TotalView-ITCH data feed product.

2   Architecture

Nasdaq BX GLIMPSE™ is a point-to-point data feed product comprised of a series of sequenced messages. Each message is variable in length based on the message type. The messages that make up the Nasdaq BX GLIMPSE™ protocol are typically delivered using a higher level protocol that takes care of sequencing and delivery guarantees.

Nasdaq BX currently offers the BX GLIMPSE™ data feed in the SoupBinTCP protocol option only.

Please note that BX GLIMPSE™ users must login to SoupBinTCP for sequence 1 to correctly receive data.

In the market data messages, instruments are identified by a stock locate code – a low lying integer employed with the intent of serving as an array index for rapidly looking up instrument details. The locate codes are dynamically assigned each day, starting with a value of 1, and communicated via the Stock Directory message. An instrument's locate code will not change intraday; however, there should be no expectation that the assignment will be the same across multiple days. The Stock Locate code appears all messages, and at the same position in all messages to support efficient filtering. A default value of 0 will be applied to messages which are not stock dependent.

3   Data Types

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

All alpha fields are ASCII fields which are left justified and padded on the right with spaces.

Prices are integer fields, supplied with an associated precision. When converted to a decimal format, prices are in 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. The maximum value of price (4) in BX TotalView-ITCH is 200,000.0000 (decimal, 77359400 hex).

Timestamps are represented as nanoseconds since midnight.

4   Message Formats

Upon logon to the Nasdaq BX GLIMPSE™ service, firms will receive the following data elements with the relevant system time stamp:

   • Symbol Directory messages for all security symbols in the Nasdaq BX execution system;
   • Trading Action messages with the current trading state value for active security symbol in the
   Nasdaq execution system;
   • Add Order messages for all the displayable orders on the Nasdaq BX execution system at the time of login request;
   • BX GLIMPSE™ Snapshot message that reflects the most recent order reference number reflected in the transmission.

Please note that Nasdaq BX GLIMPSE™ uses the same Symbol Directory, Trading Action, and Add Order message formats as the Nasdaq BX TotalView-ITCH data feed.

At the end of the spins, Nasdaq BX GLIMPSE™ will send a Snapshot message to denote where firms should begin processing real-time updates via the Nasdaq BX TotalView-ITCH product.

4.1 System Event Message

The system event message type is used to signal a market or data feed handler event. The format is as follows:

System Event Message				
Name	**Offset**	**Length**	**Value**	**Notes**
Message Type	0	1	"S"	System Event Message
Stock Locate	1	2	Integer	Always 0
Tracking Number	3	2	Integer	Nasdaq BX internal tracking number
Timestamp	5	6	Integer	Nanoseconds since midnight
Event Code	11	1	Alpha	See System Event Codes below

Nasdaq BX supports the following event codes on a daily basis on the BX TotalView-ITCH data feed.

System Event Codes – Daily	
Code	**Explanation**
"O"	Start of Messages. Outside of time stamp messages, the start of day message is the first message sent in any trading day
"S"	Start of System hours. This message indicates that Nasdaq BX is open and ready to start accepting orders
"Q"	Start of Market hours. This message is intended to indicate that Market Hours orders are available for execution
"M"	End of Market hours. This message is intended to indicate that Market Hours orders are no longer available for execution
"E"	End of System hours. It indicates that Nasdaq BX is now closed and will not accept any new orders today. It is still possible to receive Broken Trade messages and Order Delete messages after the End of Day
"C"	End of Messages. This is always the last message sent in any trading day.

4.2 Add Order Message

An Add Order Message indicates that a new order has been accepted by the Nasdaq BX system and was added to the displayable book. The message includes a day-unique Order Reference Number used by Nasdaq BX to track the order

For Nasdaq BX GLIMPSE™ / Nasdaq BX TotalView-ITCH, Nasdaq BX supports two variations of the Add Order message format.

4.2.1 Add Order – No MPID Attribution

This message will be generated for unattributed orders accepted by the Nasdaq BX system. (Note: If a firm wants to display a MPID for unattributed orders, Nasdaq BX recommends that it use the MPID of "NSDQ".)

Add Order Message				
Name	**Offset**	**Length**	**Value**	**Notes**
Message Type	0	1	"A"	Add Order – No MPID Attribution Message.

Name	Offset	Length	Value	Notes
Stock Locate	1	2	Integer	Locate code identifying the security
Tracking Number	3	2	Integer	Nasdaq BX internal tracking number
Timestamp	5	6	Integer	Nanoseconds since midnight.
Order Reference Number	11	8	Integer	The unique reference number assigned to the new order at the time of receipt.
Buy/Sell Indicator	19	1	Alpha	The type of order being added. "B" = Buy Order. "S" = Sell Order.
Shares	20	4	Integer	The total number of shares associated with the order being added to the book.
Stock	24	8	Alpha	Stock symbol, right padded with spaces
Price	32	4	Price (4)	The display price of the new order. Refer to Data Types for field processing notes.

4.2.2 Add Order with MPID Attribution

This message will be generated for attributed orders and quotations accepted by the Nasdaq BX system.

Add Order - MPID Attribution Message

Name	Offset	Length	Value	Notes
Message Type	0	1	"F"	Add Order – No MPID Attribution Message.
Stock Locate	1	2	Integer	Locate code identifying the security
Tracking Number	3	2	Integer	Nasdaq BX internal tracking number
Timestamp	5	6	Integer	Nanoseconds since midnight.
Order Reference Number	11	8	Integer	The unique reference number assigned to the new order at the time of receipt.
Buy/Sell Indicator	19	1	Alpha	The type of order being added. "B" = buy order. "S" = sell order.
Shares	20	4	Integer	The total number of shares associated with the order being added to the book
Stock	24	8	Alpha	Stock symbol, right padded with spaces
Price	32	4	Price (4)	The display price of the new order. Refer to Data Types for field processing notes.
Attribution	36	4	Alpha	Nasdaq Market participant identifier associated with the entered order

4.3 Stock Directory

At the start of each BX GLIMPSE™ transmission, Nasdaq BX will disseminate stock directory messages for all symbols in Nasdaq BX execution system for the current trading day.   Please note that the Symbol Directory spin may include halted issues. Firms must process the Trading Action message for current trading state information.

Stock Directory				
Name	**Offset**	**Length**	**Type**	**Value/Description**
Message Type	0	1	"R"	Stock Directory Message
Stock Locate	1	2	Integer	Locate Code uniquely assigned to the security symbol for the day.
Tracking Number	3	2	Integer	Nasdaq BX internal tracking number
Timestamp	5	6	Integer	Time at which the directory message was generated. Refer to Data Types for field processing notes.
Stock	11	8	Alpha	Denotes the security symbol for the issue in the Nasdaq BX execution system.
Market Category	19	1	Alpha	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-Nasdaq-Listed Instruments	
N	New York Stock Exchange (NYSE)
A	NYSE American
P	NYSE Arca
Z	BATS Z Exchange
V	Investors' Exchange, LLC
<space>	Not available

Field	Offset	Length	Type	Description
Financial Status Indicator	20	1	Alpha	For Nasdaq-listed issues, this field indicates when a firm is not in compliance with Nasdaq continued listing requirements

Code	Definition
Nasdaq-Listed Instruments	
D	Deficient
E	Delinquent
Q	Bankrupt
S	Suspended
G	Deficient and Bankrupt
H	Deficient and Delinquent
J	Delinquent and Bankrupt
K	Deficient, Delinquent and Bankrupt
C	Creations and/or Redemptions Suspended for Exchange Traded Product
N	Normal (Default): Issuer Is NOT Deficient, Delinquent, or Bankrupt
Non-Nasdaq-Listed Instruments	
<space>	Not available. Firms should refer to SIAC feeds for code if needed.

Field	Offset	Length	Type	Description
Round Lot Size	21	4	Integer	Denotes the number of shares that represent a round lot for the issue
Round Lots Only	25	1	Alpha	Indicates if Nasdaq BX system limits order entry for issue

Code	Definition
Y	Nasdaq BX system only accepts round lots
N	Nasdaq BX system does not have any order size restrictions for this security. Odd and mixed lot orders are allowed.

Field	Offset	Length	Type	Description
Issue Classification	26	1	Alpha	Identifies the security class for the issue as assigned by Nasdaq BX. See Appendix for allowable values.
Issue Sub-Type	27	2	Alpha	Identifies the security sub-type for the issue as assigned by Nasdaq BX. See Appendix for allowable values.
Authenticity	29	1	Alpha	Denotes if an issue or quoting participant record is set-up in Nasdaq BX 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.

Code	Definition
P	Live/Production
T	Test

Short Sale Threshold Indicator	30	1	Alpha	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>	Threshold Indicator not available

IPO Flag	31	1	Alpha	Indicates if the Nasdaq BX 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
Nasdaq-Listed Instruments	
Y	Nasdaq BX system only accepts round lots orders for this security.
N	Nasdaq BX system does not have any order size restrictions for this security. Odd and mixed lot orders are allowed.
Non-Nasdaq-Listed Instruments	
<space>	Not available

LULD Reference Price Tier	32	1	Alpha	Indicates which Limit Up / Limit Down price band calculation parameter is to 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>	Not available

ETP Flag	33	1	Alpha	Indicates whether the security is an exchange traded product (ETP):

Code	Definition
Y	Instrument is an ETP
N	Instrument is not an ETP
<space>	Not available

ETP Leverage Factor	34	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 used for LULD Tier I price band calculation purposes.

Inverse Indicator	38	1	Alpha	Indicates the directional relationship between the ETP and Underlying index.

Code	Definition
Y	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 ETP will decrease by a value of 3.

4.4 Stock Trading Action Message

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

In the BX GLIMPSE™ transmission, Nasdaq BX will send out a Stock Trading Action message for only those Nasdaq, NYSE, NYSE American, NYSE Arca and BATS issues that were eligible for trading during the current trading session.

For most issues, the Trading Action state would be "T" (Trading Resumption) to reflect the issue was released for trading during the current market session.

If the issue was in a halted or paused state at the time of the BX GLIMPSE™ transmission, however, the Trading Action state may reflect one of the other states outlined below.

If the BX GLIMPSE™ transmission includes a Stock Directory message, but not a Stock Trading Action message, for an issue, firms may assume that the issue was placed in an operational or regulatory trading halt prior to the start of the current trading system.

Stock Trading Action

Name	Offset	Length	Value	Notes
Message Type	0	1	"H"	Stock Trading Action Message.
Stock Locate	1	2	Integer	Locate code identifying the security
Tracking Number	3	2	Integer	Nasdaq BX internal tracking number
Timestamp	5	6	Integer	Nanoseconds since midnight
Stock	11	8	Alpha	Stock symbol, right padded with spaces
Trading State	19	1	Alpha	Indicates the current trading state for the stock. Allowable values: "H" = Halted across all U.S. equity markets / SROs "P" = Paused across all U.S. equity markets / SROs (Nasdaq-listed securities only) "Q" = Quotation only period for cross-SRO halt or pause "T" = Trading on Nasdaq BX
Reserved	20	1	Alpha	Reserved.
Reason	21	4	Alpha	Trading Action reason.

4.5 Reg SHO Short Sale Price Restricted Identifier

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 BX will introduce the following Reg SHO Short Sale Price Test Restricted Indicator message

format.

For Nasdaq-listed issues, Nasdaq BX 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 BX 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 BX relays the Reg SHO Short Sale Price Test Restricted Indicator message when it receives an update from the primary listing exchange. Nasdaq BX processes orders based on the most recent Reg SHO Restriction status value.

Reg SHO Restriction

Name	Offset	Length	Value	Notes
Message Type	0	1	"Y"	Reg SHO Short Sale Price Test Restricted Indicator
Locate Code	1	2	Integer	Locate code identifying the security
Tracking Number	3	2	Integer	Nasdaq BX internal tracking number
Timestamp	5	6	Integer	Nanoseconds since midnight
Stock	11	8	Alpha	Stock symbol, right padded with spaces
Reg SHO Action	19	1	Alpha	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

4.5 Snapshot Message

The Snapshot message reflects the Nasdaq BX TotalView-ITCH sequence number at the time that the Nasdaq BX GLIMPSE™ spin was requested.

To maintain a real-time order display, firms should begin to process real-time Nasdaq BX TotalView- ITCH messages beginning with the sequence number stated in this Nasdaq BX GLIMPSE™ snapshot message.

End of Snapshot Message

Name	Offset	Length	Value	Notes
Message Type	0	1	"G"	End of Snapshot message
Sequence number	1	20	Numeric	BX TotalView-ITCH sequence number when the BX GLIMPSE™ snapshot was taken. To keep the order book current, firms should process real-time BX TotalView-ITCH messages beginning with the message sequence number reflected in this snapshot message. Note: While BX TotalView-ITCH is a binary data feed, the SoupBINTCP protocol uses ASCII characters for the sequence number in the logon request message format.

4.6 Operational Halt

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

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

Operational Halt				
Name	**Offset**	**Length**	**Type**	**Value/Description**
Message Type	0	1	"h"	Operational Halt
Stock Locate	1	2	Integer	Locate code uniquely assigned to the security symbol for the day.
Tracking Number	3	2	Integer	Nasdaq internal tracking number
Timestamp	5	6	Integer	Time at which the Operational Halt message was generated. Refer to Data Types for field processing notes.
Stock	11	8	Alpha	Denotes the security symbol for the issue in Nasdaq execution system
Market Code	19	1	Alpha	"Q": Nasdaq "B": BX "X": PSX
Operational Halt Action	20	1	Alpha	"H": Operationally Halted on the identified Market "T": Operational Halt has been lifted and Trading resumed

BX GLIMPSE™ will distribute the "Operational Halt" message on a last seen basis. A recipient of GLIMPSE™ should expect to receive a message value of "Operationally Halted" message while an Operational Halt is ongoing, OR, a "Trading Resumed" message value at any point after Operational Halt has been resolved. If an Operational Halt has not been declared during a trading day, then the recipient should expect to receive no "Operational Halt" message as part of the response.

5 Support

- For general product support for Nasdaq BX data feeds, please contact [Clientsuccess@nasdaq.com.](mailto:Clientsuccess@nasdaq.com)

Appendix A
Documentation Revision Control Log

July 21, 2022: BX GLIMPSE™ Version 5.0
Due to the launch of non-integer leverage factors, updated the Value/Description field of ETP Leverage Factor from section 4.3 page 7.

May 3, 2018: BX GLIMPSE™ Version 5.0
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 2, 2018: BX GLIMPSE™ Version 5.1
Released a new version of BX GLIMPSE™ documentation to add the new Operational Halt message (Section 4.7) to indicate the current Operational Status of a security to the trading community.

September 12, 2017: BX GLIMPSE™ Version 5.0
Nasdaq added 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".

October 1, 2013: BX GLIMPSE™ Version 5.0
Released a new version of BX TotalView-ITCH documentation to support the following change:
Added stock symbol to several market data messages

August 2, 2013: BX GLIMPSE™ Version 5.00
Released a new version of the BX TotalView-ITCH documentation to support the following change:
　　　Revised Timestamp format
　　　　Moved positioning of the Symbol Locate and Tracking Number fields, and updated field offsets accordingly

July 10, 2013: BX GLIMPSE™ Version 5.00
　Released a new version of the GLIMPSE™ documentation to support the following changes:
　　　Incorporation of Symbol Locator Codes
　　　Added Enhanced Symbol Directory
　　　Addition of an internal tracking number to multiple messages

January 8, 2013: BX GLIMPSE™ Version 4.1
Nasdaq BX removed the Trading Action State, "P", from the Stock Trading Message.

November 6, 2012: BX GLIMPSE™ Version 4.1
Released a new version of the GLIMPSE™ documentation to support the following changes:

　　　Added the "P" value to the Trading State in the Stock Trading Message.
　　　Removed the Trading State, "V", related to the Volatility Guard Program

November 1, 2011: BX GLIMPSE™ Version 4.1
Nasdaq BX updated the Market Category message to include the code "Z" for BATS-listed securities.

July 14, 2010: BX GLIMPSE™ Version 4.1
Nasdaq BX 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: BX GLIMPSE™ Version 4.1
Nasdaq BX added a new Trading State code value of "V" to the Stock Trading Action message to denote a Nasdaq BX Volatility Guard trading pause.

May 25, 2010: BX GLIMPSE™ Version 4.1

Nasdaq BX updated the definition of the Trading State "H" value to indicate Halted / Paused for single security trading pause situations

January 26, 2010: BX GLIMPSE™ Version 4.1

Released a new version of the BX TotalView-ITCH 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 Symbol Directory and Trading Action message types.

January 7, 2010: BX GLIMPSE™ Version 4.00

Nasdaq BX releases initial BX GLIMPSE™ 4.0 specifications to public