Nasdaq Options GLIMPSE

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1. Overview

A complement to the NASDAQ Options ITCH to Trade Options (ITTO) real-time data feed product, NASDAQ Options GLIMPSE 4.0 is a point-to-point data feed connection that provides direct data feed customers with the current state of the NASDAQ execution system. NASDAQ Options GLIMPSE 4.0 uses the same data formats as the ITTO 4.0 data feed product.

2. Architecture

NASDAQ Options GLIMPSE 4.0 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 Options GLIMPSE 4.0 protocol are typically delivered using a higher level protocol that takes care of sequencing and delivery guarantees.

NASDAQ currently offers the Options GLIMPSE 4.0 data feed in the SoupBinTCP protocol option only. Please note that GLIMPSE users must login to SoupBinTCP for sequence 1 to correctly receive data.

3. Data Types

All Alpha or Alphanumeric fields are left justified and padded on the right with spaces.

All Integer fields are unsigned big-endian (network byte order) binary encoded numbers unless otherwise specified. Integers may be 1, 2 or 4 bytes long.

Prices are 2 byte or 4 byte Integer fields. 2 byte Price fields are unsigned positive numbers. 4 byte Price fields are signed positive numbers. When a 4 byte price is converted to a decimal format, prices are in fixed point format with 6 whole number places followed by 4 decimal digits. When a 2 byte price is converted to a decimal format, prices are in fixed point format with 3 whole number places followed by 2 decimal digits.

4. Message Formats

Upon logon to the NASDAQ Options GLIMPSE service, firms will receive the following data elements with the relevant system time stamp:

· System Event messages;

· Symbol Directory messages for all security symbols in the NASDAQ execution system;

· Trading Action messages with the current trading state value for active security symbol in the NASDAQ execution system;

· Option open message if either the opening or closing is done for an option;

· Add Quote messages for all the displayable quotes on the NASDAQ execution system at the time of login request;

· Add Order messages for all the displayable orders on the NASDAQ execution system at the time of login request;

· GLIMPSE Snapshot message that reflects the NASDAQ ITTO 4.0 sequence number at the time that the NASDAQ GLIMPSE 4.0 spin was requested.

Please note that NASDAQ Options GLIMPSE 4.0 uses the same Symbol Directory, Trading Action, Option Open, Add Order and Add Quote message formats as the NASDAQ Options ITTO 4.0 data feed.

At the end of the spins, NASDAQ Options GLIMPSE will send a Snapshot message to denote where firms should begin processing real-time updates via the NASDAQ Options ITTO 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	Alpha	"S" = System Event Message
Tracking Number	1	2	Integer	Nasdaq Internal tracking number
Timestamp	3	6	Integer	Nanoseconds since midnight
Event Code	9	1	Alpha	Refer to System Event Codes below

System Event Codes

CODE	EXPLANATION	WHEN (TYPICALLY)
"O"	Start of Messages. This is always the first message sent in any trading day.	After ~4:00am
"S"	Start of System Hours. This message indicates that NASDAQ is open and ready to start accepting orders.	7:00am
"Q"	Start of Opening Process. This message is intended to indicate that NASDAQ has started its opening auction process.	9:30:00am
"N"	End of Normal Hours Processing - This message is intended to indicate that NASDAQ will no longer accept any new orders or changes to existing orders for options that trade during normal trading hours.	4:00:00pm
"L"	End of Late Hours Processing - This message is intended to indicate that NASDAQ will no longer accept any new orders or changes to existing orders for options that trade during extended hours.	4:15:00pm
"E"	End of System Hours. This message indicates that NASDAQ options system is now closed.	~5:15pm
"C"	End of Messages. This is always the last message sent in any trading day.	~5:20pm

4.2. Administrative Data

4.2.1. OPTION DIRECTORY MESSAGE

At the start of each GLIMPSE transmission, NASDAQ will disseminate option directory messages for all symbols in NASDAQ 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.

Options Directory

NAME	OFFSET	LENGTH	VALUE	NOTES
Message Type	0	1	Alpha	"R" = Options Directory Message
Tracking Number	1	2	Integer	Nasdaq Internal tracking number
Timestamp	3	6	Integer	Nanoseconds since midnight
Option ID	9	4	Integer	Option ID assigned daily, valid for trading day.
Security Symbol	13	6	Alphanumeric	Denotes the security symbol.
Expiration Year	19	1	Integer	Last two digits of the year of the option expiration
Expiration Month	20	1	Integer	Expiration Month (1-12)
Expiration Date	21	1	Integer	Day of the Month of expiration (1-31)
Explicit Strike Price	22	4	Integer	Explicit strike price. Refer to Data Types for field processing notes.
Option Type	26	1	Alpha	"C" = Call option "P" = Put option
Source	27	1	Integer	Identifies the source of the Option, valid for the trading day
Underlying Symbol	28	13	Alphanumeric	Denotes the unique symbol assigned to the underlying security within exchange.
Options Closing Type	41	1	Alpha	Denotes which System Event is used to trigger the option closing process. "N" = Normal Hours "L" = Late Hours
Tradable	42	1	Alpha	Denotes whether or not this option is tradable at the exchange. The allowable values are: "Y" = Option is tradable "N" = Option is not tradable
MPV	43	1	Alpha	Minimum Price Variation for this option. See Notes below for further explanation: "E" = penny Everywhere "S" = Scaled "P" = penny Pilot

Symbol Directory Notes:

1) The options directory messages are sent once per symbol.

2) Firm should note that they will only receive Option Directory messages for the symbol range associated with the matching engine serving that connection.

3) The Underlying Symbol is in most cases the same as the industry standard ticker underlying. In rare cases, such as a special settlement symbol, the exchange assigns unique underlying symbols.

4) The Minimum Price Variation (MPV) has the following values:
   a. "E" – All prices are in penny increments
   b. "S" – Prices below $3.00 are in increments of $0.05, prices above $3.00 are in increments of $0.10
   c. "P" – Prices below $3.00 are in increments of $0.01, prices above $3.00 are in increments of $0.05

4.2.2. OPTIONS TRADING ACTION MESSAGE

NASDAQ uses this administrative message to indicate the current trading status of an index or equity option within the NASDAQ Options Market.

In the GLIMPSE transmission, NASDAQ will send out a Trading Action spin. In the spin, NASDAQ will send out an Option Trading Action message with the "T" (Trading Resumption) for all options contracts that are eligible for trading during the current trading session.

For most options, the Trading State would be "T" (Trading Resumption) to reflect the option was released for trading during the current market session.

If the symbol was in a halted state at the time of the GLIMPSE transmission, the Trading State will reflect with the code 'H' as outlined below.

If an option is temporarily suspended on buy or sell side (i.e. all buy orders or all sell orders in a given symbol are not executable), a trading action message with state 'B' (for buy side) or 'S' (for sell side) will be sent.

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

Trading Action Message

NAME	OFFSET	LENGTH	VALUE	NOTES
Message Type	0	1	Alpha	"H" = Trading Action Message
Tracking Number	1	2	Integer	Nasdaq Internal tracking number
Timestamp	3	6	Integer	Nanoseconds since midnight
Option ID	9	4	Integer	Option ID assigned daily, valid for trading day.
Current Trading State	13	1	Alphabetic	Reflects the current trading state for the options security in the NASDAQ Options Market. The allowable values are: H = Halt in effect T = Trading on NASDAQ B = Buy Side Trading Suspended –i.e. Buy orders are not executable) S = Sell Side Trading Suspended –i.e. Sell orders are not executable)

4.2.3. OPTION OPEN MESSAGE

NASDAQ plans to disseminate the Option Open Message for each option as soon as the opening is completed. Upon receipt of the open state message, firms should be advised that the option denoted in the message is now available for auto execution within the NASDAQ Options Market System. Upon receipt of the closed state message, firms should be advised that the option is no longer eligible for auto-execution within the NASDAQ Options Market System.

GLIMPSE 3.0 will send the latest option state message ('Open State' – 'Y' or 'N') at the time of GLIMPSE transmission.

Security Open Message

NAME	OFFSET	LENGTH	VALUE	NOTES
Message Type	0	1	Alpha	"O"=Open Message
Tracking Number	1	2	Integer	Nasdaq Internal tracking number
Timestamp	3	6	Integer	Nanoseconds since midnight
Option ID	9	4	Integer	Option ID assigned daily, valid for trading day.
Open State	13	1	Alphabetic	The allowable values are: Y = Open for auto execution N = Closed for auto execution

Please note that recipients should continue to process the Trading Action Spin message in order to determine if a contract is in a Halt state for the day. A security open message should **NOT** override the Trading action message indicating if an index or equity option is halted. Recipients should use both messages in tandem to indicate if the issue is halted and/or or open for auto execution.

4.3. Add Order Message

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

For bandwidth efficiency reasons, NASDAQ Options GLIMPSE 3.0 / ITTO 3.0 can publish this message in either short or long format.

Add Order Message – Short Form

NAME	OFFSET	LENGTH	VALUE	NOTES
Message Type	0	1	Alpha	"a"=Add Order Message
Tracking Number	1	2	Integer	Nasdaq Internal tracking number
Timestamp	3	6	Integer	Nanoseconds since midnight
Order Reference Number	9	8	Integer	The unique reference number assigned to the new order. The order reference number is Increasing, but not necessarily sequential.
Market Side	17	1	Alpha	The type of order being added. "B" = Buy "S" = Sell
Option ID	18	4	Integer	Option ID assigned daily, valid for trading day.
Price	22	2	Integer	The display price of the new order being added to the book. **NOTE**: When converted to a decimal format, this price is in fixed point format with 3 whole number places followed by 2 decimal digits.
Volume	24	2	Integer	The total number of contracts of the new order being added to the book.

Add Order Message - Long Form

NAME	OFFSET	LENGTH	VALUE	NOTES
Message Type	0	1	Alpha	"A"=Add Order Message
Tracking Number	1	2	Integer	Nasdaq Internal tracking number
Timestamp	3	6	Integer	Nanoseconds since midnight
Order Reference Number	9	8	Integer	The unique reference number assigned to the new order. The order reference number is Increasing, but not necessarily sequential.
Market Side	17	1	Alpha	The type of order being added. "B" = Buy "S" = Sell
Option ID	18	4	Integer	Option ID assigned daily, valid for trading day.
Price	22	4	Integer	The display price of the new order being added to the book.
Volume	26	4	Integer	The total number of contracts of the new order being added to the book.

4.4. Add Quote Message

An Add Quote Message indicates that a new quote has been accepted by the NASDAQ Option system and was added to the displayable book. The message includes the latest unique Bid/Ask Reference Numbers used by NASDAQ to track the quote.

For bandwidth efficiency reasons, NASDAQ Options GLIMPSE 4.0 / ITTO 4.0 can publish this message in either short or long format.

Add Quote Message – Short Form

NAME	OFFSET	LENGTH	VALUE	NOTES
Message Type	0	1	Alpha	"j" = New Quote message
Tracking Number	1	2	Integer	Nasdaq Internal tracking number
Timestamp	3	6	Integer	Nanoseconds since midnight
Bid Reference Number	9	8	Integer	The bid reference number associated with the new quote.
Ask Reference Number	17	8	Integer	The ask reference number associated with the new quote
Option ID	25	4	Integer	Option ID assigned daily, valid for trading day.
Bid Price	29	2	Integer	The display bid price of the new quote. NOTE: When converted to a decimal format, this price is in fixed point format with 3 whole number places followed by 2 decimal digits.
Bid Size	31	2	Integer	The bid contracts of the new quote.
Ask Price	33	2	Integer	The display ask price of the new quote. NOTE: When converted to a decimal format, this price is in fixed point format with 3 whole number places followed by 2 decimal digits.
Ask Size	35	2	Integer	The ask contracts of the new quote.

Add Quote Message – Long Form

NAME	OFFSET	LENGTH	VALUE	NOTES
Message Type	0	1	Alpha	"J" = New Quote message
Tracking Number	1	2	Integer	Nasdaq Internal tracking number
Timestamp	3	6	Integer	Nanoseconds since midnight
Bid Reference Number	9	8	Integer	The bid reference number associated with the new quote.
Ask Reference Number	17	8	Integer	The ask reference number associated with the new quote
Option ID	25	4	Integer	Option ID assigned daily, valid for trading day.
Bid	29	4	Integer	The display bid price of the new quote.
Bid Size	33	4	Integer	The bid contracts of the new quote.
Ask	37	4	Integer	The display ask price of the new quote.
Ask Size	41	4	Integer	The ask contracts of the new quote.

5. Snapshot Message

The Snapshot message reflects the NASDAQ ITTO 3.0 sequence number at the time that the NASDAQ GLIMPSE 3.0 spin was requested.

To maintain a real-time order display, firms should begin to process real-time NASDAQ ITTO 3.0 messages beginning with the sequence number stated in this NASDAQ GLIMPSE 3.0 snapshot message

Add Quote Message – Long Form

NAME	OFFSET	LENGTH	VALUE	NOTES
Message Type	0	1	Alpha	"M" = End of Snapshot message
Sequence Number	1	20	Numeric	NASDAQ ITTO 4.0 sequence number when the NASDAQ GLIMPSE 4.0 snapshot was taken. To keep the order book current, firms should process real-time NASDAQ-ITTO 4.0 messages beginning with the message sequence number reflected in this snapshot message. **Note**: While ITTO 4.0 is a binary data feed, the SoupBINTCP protocol uses ASCII characters for the sequence number in the logon request message format

6. Support

· For general product support for NASDAQ data feeds, please contact NASDAQ Market Data at Clientsuccess@nasdaq.com.

Appendix A

Documentation Revision Control Log

January 09, 2023:
· Version updated to 4.0.1

· Clarifying the Data Types: Added "2 byte Price fields are unsigned positive numbers. 4 byte Price fields are signed positive numbers."

February 08, 2018:
· Version updated to 4.0

· Removed the Seconds, Base Reference Number Messages

· Added a 2-byte Internal indicator to all messages

· Updated the timestamp field to 6 bytes instead of 4 bytes

· All messages using the order/quote reference number 4-byte deltas have been updated to use the 8-byte absolute reference numbers

November 30, 2015: System Event Message – Version 3.10
· Updated the Start of Messages (System Event Code "O") time to ~4:00 am.

· Updated the End of System Hours (System Event Code "E") time to ~5:15 pm to more accurately reflect current practice.

· Updated the End of Messages (System Event Code "C") time to ~5:20 pm to more accurately reflect current practice.

December 1 2011: Seconds Message
· Fixed the value of 'Second' field to "Integer" in the Seconds message

June 17 2011: Trading State Message
· Added additional values for trading state field - 'B' and 'S' in trading state message.

February 11 2011: Options GLIMPSE 3.0
· Developed based on Options ITTO 3.0 specifications