NASDAQ Best Bid and Offer (QBBO) – Version 1.1

1   Product Description

NASDAQ Best Bid and Offer (QBBO) is a direct data feed product offered by The NASDAQ Stock Market, LLC. QBBO provides the exchange's best bid and offer position for securities listed on the NASDAQ, New York Stock Exchange (NYSE), NYSE Amex, NYSE Arca and U.S. regional exchanges.

QBBO – Version 1.1 is being released in association of the equity symbology initiative and will support issue symbols up to 8 characters in total length.

Market data distributors may use the QBBO data feed to feed dynamically updating stock tickers, portfolio trackers, trade alert programs, time and quote graphs, and other display systems. For market data administration purposes, QBBO is part of the NASDAQ Basic entitlement.

For pricing and ordering information:

- Refer to Market Data section of the NASDAQ OMX Trader website.
- Contact the NASDAQ OMX Global Data Products Account Team at +1 301 978 5307 or +45 33 93 33 66.

2   Network Protocol Options

For direct data feed subscribers, NASDAQ will offer QBBO in the following protocol options:

- SoupTCP
- Compression over SoupTCP
- MoldUDP

In order to match the NASDAQ Basic entitlement structure, QBBO will support three outbound channels for both protocol options. The QBBO data set will be channelized based on the listing market of a security.

Data Channel	Securities coverage
1	NYSE-listed issues
2	NYSE Amex-, NYSE Arca-, BATS- and U.S. regional stock exchange-listed issues
3	NASDAQ-listed issues

3   Architecture

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

4   Data Types

All numeric fields are represented in ASCII digits and are right-justified. Padding spaces appear on the left as necessary.

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.

Timestamp reflects the NASDAQ system time at which the outbound message was generated. NASDAQ states time as the number of milliseconds past midnight. The time zone is U.S. Eastern Time. All alpha fields are left-justified. Padding spaces appear on the right as necessary.

5   Message Formats

5.1   System Event Message

The System Event message is used to signal key market or data feed control events. QBBO will support the System Event messages.

SYSTEM EVENT MESSAGE				
Name	Offset	Length	Value	Notes
Time Stamp	0	8	Numeric	Time stamp
Message Type	8	1	Alphanumeric	S = System Event
Event Code	9	1	Alphanumeric	Denotes the type of event for which the message is being generated. See list below for allowable values.

On a daily basis, QBBO will support the following event codes:

SYSTEM EVENT CODES – DAILY	
Code	Explanation
O	*Start of Transmissions*: Denotes that QBBO has started its daily transmission schedule
S	*Start of System Hours*: This message indicates that NASDAQ 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 is now closed and will not accept any new orders today.
C	*End of Transmissions:* Denotes that QBBO has completed its daily transmission schedule.

In the event of an emergency market condition (EMC), QBBO will also support the following event codes:

SYSTEM EVENT CODES – AS NEEDED	
Code	**Explanation**
A	*Emergency Market Condition – Halt:* This message is sent to inform NASDAQ market participants that the EMC is in effect. No trading is allowed during the EMC.
R	*Emergency Market Condition – Quote Only Period:* This message is sent to inform NASDAQ market participants that the EMC quotation only period is in effect.
B	*Emergency Market Condition – Resumption:* This message is sent to inform NASDAQ market participants that EMC is no longer in effect.

5.2 Administrative Messages

5.2.1 Stock Directory

At the start of each trading day, NASDAQ disseminates stock directory messages for all active symbols in its market center system.

Market data vendors 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 DIRECTORY MESSAGE				
Name	**Offset**	**Length**	**Value**	**Notes**
Time Stamp	0	8	Numeric	Time Stamp.
Message Type	8	1	Alphanumeric	R = Stock Directory
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 B.

Market Category	17	1	Alphanumeric	Denotes the listing market for the issue. The allowable values are:	

Code	Value
N	New York Stock Exchange (NYSE)
A	NYSE Amex
P	NYSE Arca
Q	NASDAQ Global Select Market
G	NASDAQ Global Market
S	NASDAQ Capital Market
Z	BATS BZX Exchange
\<Space\>	Not available

Financial Status Indicator	18	1	Alphanumeric	For NASDAQ-listed issues, this field indicates when a firm is not in compliance with NASDAQ continued listing requirements. The allowable values are:	

Code	Value
D	Deficient
E	Delinquent
Q	Bankrupt
G	Deficient and Bankrupt
H	Deficient and Delinquent
J	Delinquent and Bankrupt
K	Deficient, Delinquent, and Bankrupt
\<space\>	Company is in compliance with NASDAQ listing standards OR Issue is not listed on NASDAQ

5.2.2 Stock Trading Action

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

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

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

- Halted
- Paused*
- Released for quotation
- Released for trading

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

STOCK TRADING ACTION MESSAGE				
Name	**Offset**	**Length**	**Value**	**Notes**
Time Stamp	0	8	Numeric	Time Stamp.
Message Type	8	1	Alphanumeric	H = Trading Action
Issue Symbol	9	8	Alphanumeric	NASDAQ-assigned indicator for issue for which the stock trading action message is being generated. For details on NASDAQ symbology, please refer to Appendix B.
Security Class	17	1	Alphabetic	Indicates the primary listing market for the issue. Allowable values are: | Code	Value
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Q	NASDAQ Listed Issue
N	NYSE
A	NYSE Amex
P	NYSE Arca
Z	BATS	
Current Trading	18	1	Alphabetic	Reflects the current trading state for the issue. The allowable values are:

State						
					Code	Value
					H	Halted or paused on NASDAQ and all UTP participants
					P	Paused across all U.S. equity markets / SROs (NASDAQ-listed securities only)
					Q	Quotation only period for cross-SRO halt or pause
					T	Trading on NASDAQ
Reason	19	4	Alphanumeric	Reflects the Market Ops or MarketWatch code for the trading state change. Refer to Appendix C for current code list.		

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

5.2.3 Reg SHO Short Sale Price Test Restricted Indicator

In February 2011, the Securities and Exchange Commission (SEC) will implement 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 will introduce the following Reg SHO Short Sale Price Test Restricted Indicator message format.

For NASDAQ-listed issues, NASDAQ will support 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 will also send the Reg SHO Short Sale Price Test Restricted Indicator message in the event of an intraday status change.

NASDAQ will process orders based on the most Reg SHO Restriction status value.

REG SHO RESTRICTION				
Name	**Offset**	**Length**	**Value**	**Notes**
Timestamp	0	8	Numeric	Time at which the market participant position message was generated
Message Type	9	1	"Y"	Reg SHO Short Sale Price Test Restricted Indicator
Stock	10	8	Alpha	Stock symbol right padded with spaces.
Reg SHO Action	18	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

5.3 Quotation Message

QBBO will broadcast a real-time update every time that the exchange's best bid and offer quote is updated during the trading day.

QBBO QUOTATION MESSAGE				
Name	Offset	Length	Value	Notes
Time Stamp	0	8	Numeric	Time stamp
Message Type	8	1	Alphanumeric	Q = QBBO Quotation Message
Stock	9	8	Alphanumeric	Denotes the NASDAQ market center system issue identifier for which the QBBO quotation message is being generated.
Security Class	17	1	Alphabetic	Indicates the primary listing market for the stock. The allowable values are as follows: <table><tr><td>Code</td><td>Value</td></tr><tr><td>N</td><td>NYSE-listed security</td></tr><tr><td>A</td><td>NYSE Amex-listed security</td></tr><tr><td>P</td><td>NYSE Arca-listed security</td></tr><tr><td>Q</td><td>NASDAQ-listed security</td></tr><tr><td>Z</td><td>BATS-listed security</td></tr></table>
NASDAQ Best Bid Price	18	10	Numeric	Denotes the NASDAQ best bid price – the highest price for market buy order(s) in the NASDAQ system. Price format is $$$$$$dddd.
NASDAQ Best Bid Size	28	9	Numeric	Denotes the aggregated number of shares available for display within the NASDAQ market center system at the NASDAQ best bid Price.
NASDAQ Best Offer Price	37	10	Numeric	Denotes the NASDAQ exchange's best offer price – the lowest price for market sell order(s) in the NASDAQ system. Price format is $$$$$$dddd.

NASDAQ Best Offer Size	47	9	Numeric	Denotes the aggregated number of shares available for display within the NASDAQ market center system at the NASDAQ Best Offer Price.

5.4 Retail Price Interest Indicator (RPII)

Identifies a retail interest indication of the Bid, Ask or both the Bid and Ask for NASDAQ-listed securities.

Retail Interest Message				
Name	*Offset*	*Length*	*Value*	*Notes*
Time Stamp	0	8	Numeric	Time stamp
Message Type	8	1	"N"	Retail Interest message
Stock	9	8	Alpha	Denotes the security symbol for the issue in the NASDAQ execution system. Refer to Appendix B for stock symbol convention information.
Interest Flag	17	1	Alpha	"B" = RPI orders available on the buy side "S" = RPI orders available on the sell side "A" = RPI orders available on both sides (buy and sell) "N" = No RPI orders available

6   Contact Information

Questions about the NASDAQ Basic entitlement and QBBO specification document may be directed to NASDAQ OMX Global Data Products at +1 301 978 5307.

Questions about QBBO transmissions may also be directed to NASDAQ OMX Operations Center.

Appendix A - Stock Symbol Convention

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

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

Appendix B – Trading Action Reason Codes

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

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

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

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

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

REASON CODES FOR QUOTATION/TRADING RESUMPTION ACTIONS	
Code	Value
T3	News and Resumption Times
T7	Single Stock Trading Pause / Quotation Only Window
R4	Qualifications Issues Reviewed/Resolved; Quotations/Trading to Resume
R9	Filing Requirements Satisfied/Resolved; Quotations/Trading To Resume
C3	Issuer News Not Forthcoming; Quotations/Trading To Resume
C4	Qualifications Halt ended; Maintenance Requirements Met; Resume
C9	Qualifications Halt Concluded; Filings Met; Quotes/Trades To

	Resume
C11	Trade Halt Concluded By Other Regulatory Auth.; Quotes/Trades Resume
MWCQ	Market Wide Circuit Breaker Resumption
R1	New Issue Available
R2	Issue Available
IPOQ	IPO Security Released for Quotation (NASDAQ Securities Only)
IPOE	IPO Security — Positioning Window Extension (NASDAQ Securities Only)
<space>	Reason Not Available

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

Appendix C – Documentation Version Control Log

QBBO Version 1.10   **November 1, 2013**

Released a new version of the QBBO documentation to support details of expanded symbology (Appendix A).

QBBO Version 1.10   **March 11, 2013**

Released a new version of the QBBO 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

QBBO Version 1.10   **January 9, 2013**

Released a new version of the QBBO 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.

QBBO Version 1.10   **January 8, 2013**

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

- Modified the Retail Price Interest Indicator Message. Changed the message type from "G" to "N".

QBBO Version 1.10   **November 6, 2012**

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

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

QBBO Version 1.10   **November 1, 2011**

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

QBBO Version 1.10   **April 6, 2011**
NASDAQ OMX added two new Trading Action – Reason codes to Appendix B for the
NASDAQ Volatility Guard pilot program.   New Reason codes were V1 and V2.

QBBO Version 1.10   **November 4, 2010**
NASDAQ OMX updated the Reg SHO message description to reflect the new SEC
implementation date.

QBBO Version 1.10   **October 14, 2010**
NASDAQ OMX fixed a documentation error related to the field layout for the the
Stock Trading Action message.   (Error was introduced in July of 2010.)

QBBO Version 1.10   **September 3, 2010**
NASDAQ OMX corrected time stamp error in Stock Trading Action message format.

QBBO Version 1.10   **July 14, 2010**
NASDAQ OMX added a new Regulation SHO Short Sale Price Test Restricted
Indicator message format to be introduced in the fourth quarter of 2010.

QBBO Version 1.10   **July 2, 2010**
NASDAQ OMX added new Action Trading code(s) to the Stock Trading Action
message for the NASDAQ Volatility Guard trading pause.

QBBO Version 1.10   **May 25, 2010**
NASDAQ updated the QBBO specification to reflect the following change:

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

QBBO Version 1.10   **January 26, 2010**
Released a new version of the QBBO 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.
- Modified the values for the Market Category / Security Class fields to
  delineate among NYSE-, NYSE Amex- and NYSE Arca-listed issues.
- Added note to Appendix B to reflect that NASDAQ OMX is reviewing its
  stock symbol conventions to determine if changes are needed.

QBBO Version 1.00   **September 21, 2009**
Corrected line channel numbering to match MoldUDP address list.

QBBO Version 1.00   **October 30, 2008**
Modified the Stock Directory and the Stock Trading Action message formats to match the NASDAQ Last Sale (NLS) data formats.

QBBO Version 1.00   **September 17, 2008**
Initial release of the QBBO data feed specification for internal NASDAQ use.