



QIX
Programming Specification

June 20, 2005

version 2005-7

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1 Overview

This document describes QIX, a NASDAQ protocol that provides a fast, reliable point-to-point connection from NASDAQ Market Center to your site. This document contains the QIX session level protocols used by NASDAQ, the application functionality currently supported by QIX, and the requirements for using the QIX protocol. This document does not consider messages transmitted via other entry points into NASDAQ.

This release of QIX supports:

NASDAQ Market Center Query/Response Messages

- Execution Kill
- Host Settings
- Market Maker Registration
- Order Cancel
- Order Cancel Replace
- Order Entry
- Order Execution Message
- Order Mass Cancel
- Order Modify
- Quote Update/Management
- Reset Client Sequence Number

NASDAQ Market Center Unsolicited Messages

- Cancel/Reject Message
- Execution/Kill Message
- Order Delivery Message
- Order Delivery Status Message
- Quote Update Message
- UM Registration Request/Response
- Zero Exposure Message
- Proprietary Quote Update Message

CAES/ITS Query/Response Messages

- CAES/ITS Administrative Message

CAES/ITS Unsolicited Messages

- CAES/ITS Pre Open Message
- CAES/ITS Administrative Message
- CAES/ITS Trade Through Message

As new QIX functionality becomes available, you will receive technical updates detailing that functionality. At the same time the technical update is distributed, this programming specification will be updated on the NASDAQ Trader web site.

1.1 Publication History

Date	Version	Enhancements
June 20, 2005	2005-7	<ol style="list-style-type: none"> 1. Removed the concept of sequence numbers from the Prop Quote UM 0850 message. 2. Clarified the definition of the Order Price Improve Flag in the Quote Update 4804 message. 3. Clarified the Leaves Amount field in the Execution/Kill UM 0811 message. 4. Redefined the limits of the Peg Offset in the Order Entry 4838 version 01 message.
April 29, 2005	2005-6	<p>Added functionality to support the NASDAQ Routing Phase 2 release:</p> <ol style="list-style-type: none"> 1. New Order Cancel/Replace 4833 Version 01 – added a new execution algorithm choice, Super-Aggressive, to the Order Priority field; added two new selections to the Peg Type field to allow pegging to the NBBO; and the Peg Offset field is increased to two characters. 2. New Order Entry 4838 version 01 – added a list of exchanges and ADF locations that a user can route the order to; added two new execution algorithm choices, Super-Aggressive and THRU, to the Order Priority field; added two new selections to the Peg Type field to allow pegging to the NBBO; and the Peg Offset field is increased to two characters. 3. Order Mass Cancel 4841 Version 00 - added two new execution algorithm choices, Super-Aggressive and THRU, to the Order Priority field.
April 13, 2005	2005-5	Removed support for the CAES/ITS Pre Opening Response Message (3407).
March 18, 2005	2005-4	Added CAES/ITS query/response and unsolicited message support.
February 28, 2005	2005-3	Removed ACT functionality. Clarified several field definitions in the Quote Update Message (4804).
February 14, 2005	2005-2	<p>Additions to support NASDAQ Market Center order routing and pre-market releases. Also contains cleanup from the previous release. In the OTCBB MM Registration transaction (4298), renamed the Deck Type Code to Market Maker Location and provided a list of valid codes. Redefined the format of the ACT Standard Reject Message (9995). Clarified the usage of the UM Registration Message (9998) and positioned the 9998 message before all UM message layouts.</p>

Date	Version	Enhancements
January 14, 2005	2005-1	Removed references to CAES/ITS functionality. These will be addressed in a subsequent QIX release. Added samples of Session Level, NASDAQ Market Center, and OTCBB messages. NASDAQ Market Center Trade Reporting Message samples will be added when testing commences in Q1 of 2005. Added Message Flow Tables for NASDAQ Market Center Trade Reporting. Clarified usage of the Login Request Message and set maximum message lengths for the Debug and Echo Packets.
December 16, 2004	2004-5	Added the trade update notification message (TTUD). Modified the following messages to define a 12 character "Reserved for NASDAQ" field in anticipation of the ACT Explicit Fee update: MM Trade Entry, OE Trade Entry, Trade Correction (No/Was) Entry, the TTEN, the TTAL, and the TTNW. This field is defined in the TTUD as well.
November 16, 2004	2004-4	Added trade reporting and CAES/ITS query/response and unsolicited message support.
October 22, 2004	2004-3	Added Reserved for NASDAQ fields to UMs.
October 15, 2004	2004-2	In version 2.0, NASDAQ will introduce new session-level functionality that will support optional inbound message sequencing on the Q/R connection. This functionality is expected to go live at the end of December.
August 9, 2004	2004-1	Modified the UM Registration Request and Response Message. Added the OTCBB Withdraw Quote Message.
July 23, 2004	draft	Initial publication of this programming specification.

1.2 NASDAQ Customer Support Information



NASDAQ QIX Support

800-243-4284



NASDAQ Subscriber Services

800-777-5606



NASDAQ Trading Services

800-219-4861

1.3 Data Standards

At the session and application levels, all data fields will be fixed length.

1.3.1 Alphabetic, Numeric, and Alphanumeric Fields

All alphabetic, numeric, and alphanumeric fields are left-justified and right-padded with spaces, except where noted.

1.3.2 Price Fields

1.3.2.1 NASDAQ Market Center Trading

All price fields are 10 characters in length with the first 6 characters reserved for the dollar portion and the last 4 reserved for cents. The decimal point is implied. Dollar amounts should be prepended with zeroes. Cent amounts should be appended with zeroes. For example, \$12.34 is 0000123400.

1.3.3 Symbology

Listed security symbols are entered in CMS format, which uses space delimiters between the root symbol and any suffix. For example, OXY PRB.

1.3.4 Server Tracking Number Format

The server provides the Server Tracking Number to you on a UM connection in all sequenced messages. The Sequence Number portion of the Server Tracking Number is used in the Login Request Message for requesting rewind service.

Name	Offset	Length	Value	Description
Sequence Number	0	8	numeric	Right-justified, zero-filled.
Reserved for NASDAQ	8	2	alphanumeric	
Reserved for NASDAQ	10	2	alphanumeric	

1.4 Message Sequencing

With the release of version 2.0, NASDAQ will support optional inbound message sequencing on the Q/R connection. You can use this feature on a message-by-message basis; that is, you can choose to designate some inbound packets as sequenced and others as unsequenced.

Each query message contains a new Packet Type value, *s*, for sequenced and a new field, Client Sequence Number. You supply the incoming sequence number in messages that you designate as sequenced.

QIX monitors the sequence number for message gaps. If you send a transaction with a sequence number greater than expected, QIX will send a new Message Gap Detected Reject message. QIX will continue to discard all messages until the expected sequence number is received or until you reset the sequence number via the new Reset Sequence Number message. When QIX receives a message with a sequence number less than expected, a debug packet will be returned with the Text field = "Expected Sequence nnnnnnnn, Received Sequence nnnnnnnn". The client session is then terminated.

The Client Sequence Number will be reset to 1 by QIX each morning.

Example #1

1. You connect and send a Login Request to QIX on the Q/R connection.
2. QIX validates the Login and responds with a Login Accepted message containing the expected sequence number, in this case, 1.
3. You then transmit sequence numbers 1 and 2 followed by 4.
4. QIX detects the gap and responds with a Message Gap Detected Reject.
5. If messages 5 and 6 are in flight, they will be discarded with no response back to you.
6. You send in sequence number 3 and continue.
or
6. You send a Reset Sequence Number message to reset the number.

Example #2

1. You connect and send a Login Request to QIX on the Q/R connection.
2. QIX validates the Login and responds with a Login Accepted message containing the expected sequence number, in this case, 20.
3. You send a message with sequence number 18.
4. QIX sends a Debug packet with a canned text string and disconnects.

2 Network Configuration

2.1 Configuration Requirements

All participants in QIX will be required to establish a minimum of two separate TCP/IP connections, each configured to a different port number.

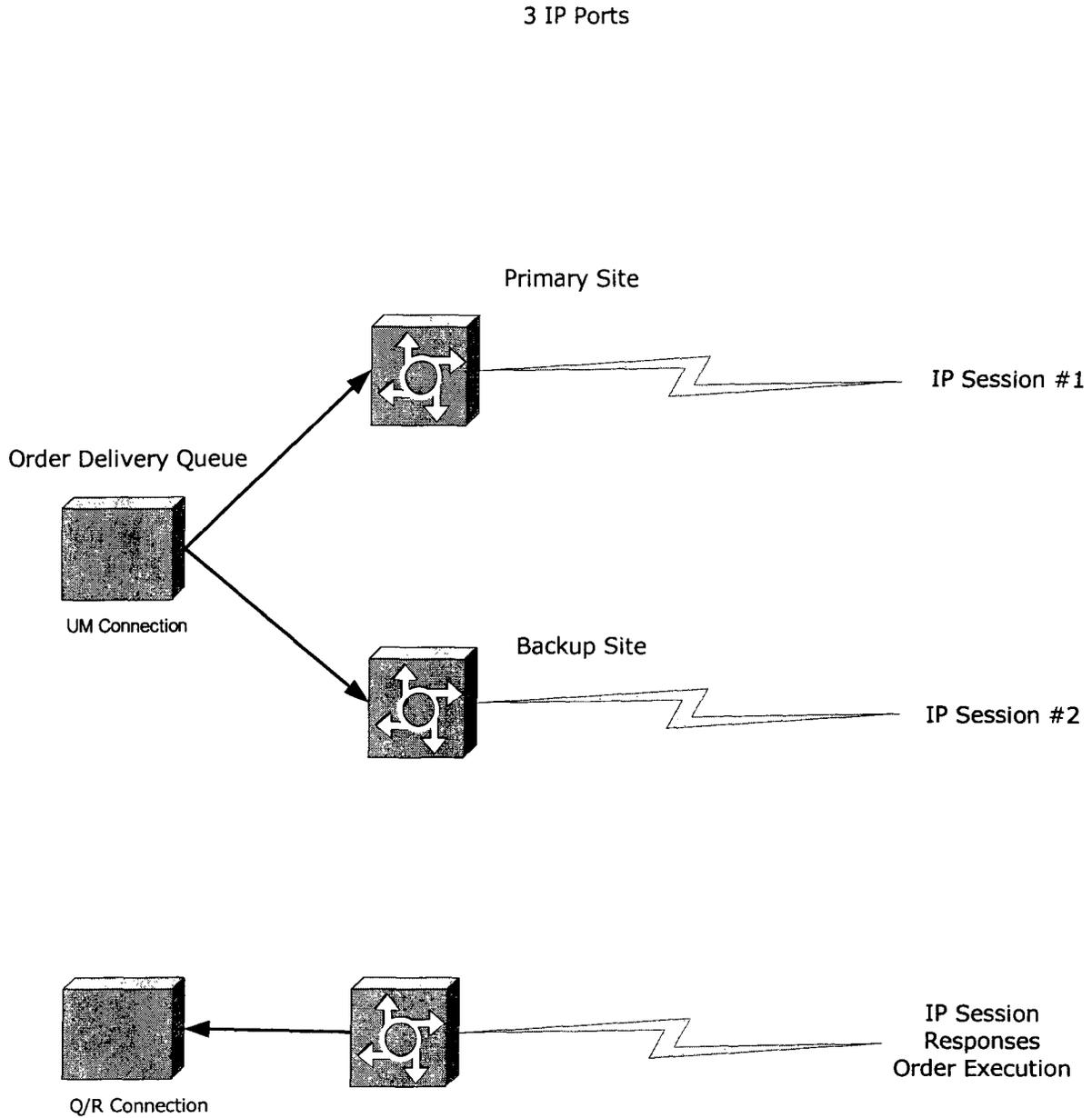
A UM delivery connection is used to transmit unsolicited messages to you. This connection also supports *session level and control level messages, which are unsequenced.*

In order to receive your proprietary quote updates, you must establish a separate UM connection. Only Proprietary Quote UM traffic is sent on this connection. These messages are designated as sequenced, but sequence numbers are not applicable to this connection. When you log on to the Proprietary Quote connection, the server will begin transmitting the last value cache figures for each security that you currently hold a proprietary position in. This is true of your initial login as well as subsequent logins intraday. This connection also supports session level and control level messages, which are unsequenced.

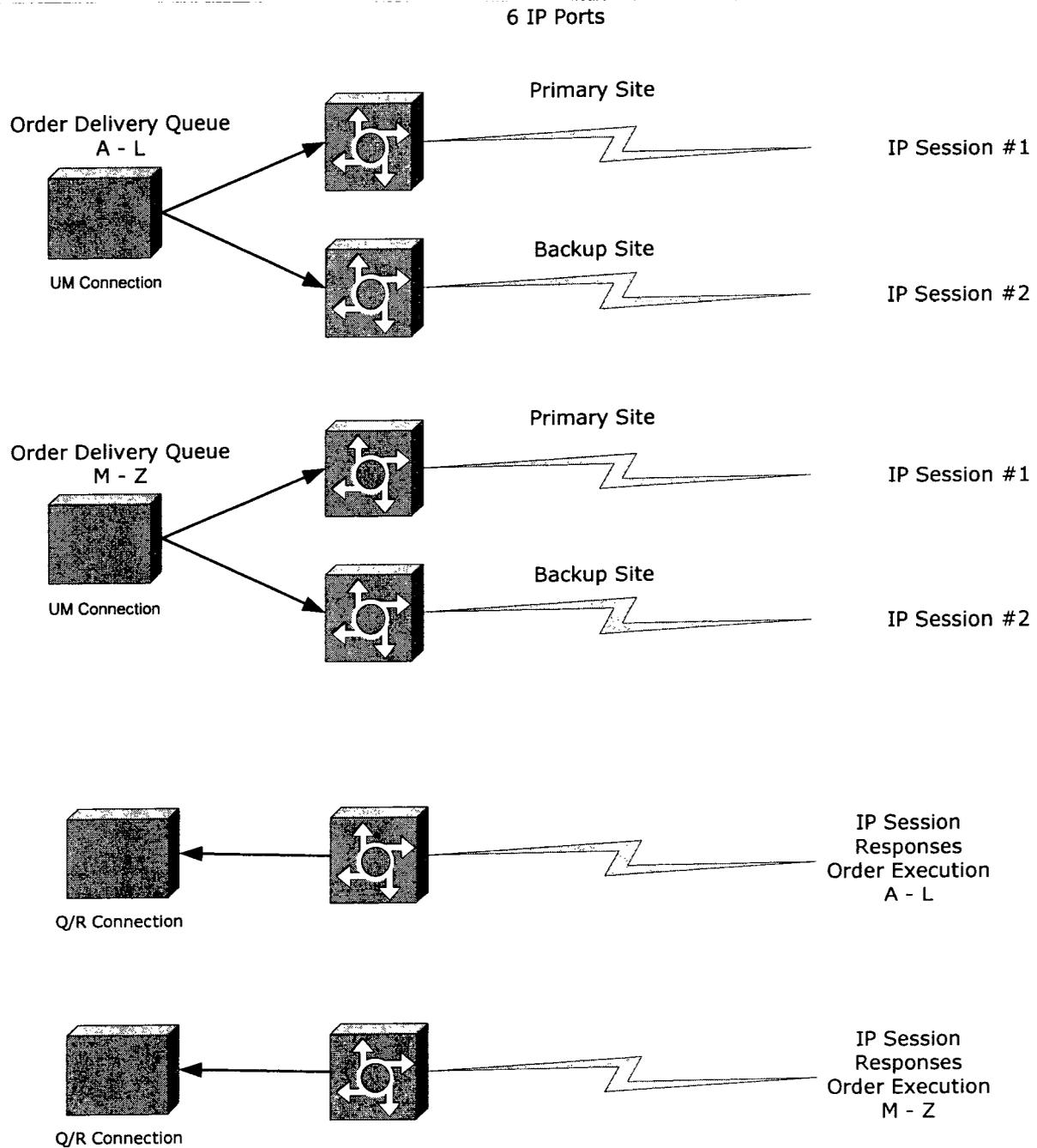
You use the Q/R connection to send traffic to and receive responses from NASDAQ applications. The Query/Response traffic to NASDAQ applications can be sequenced or unsequenced inbound. No rewind capability is offered on a Q/R connection. This connection also supports session level messages and control level messages that are unsequenced.

2.2 Example Configurations

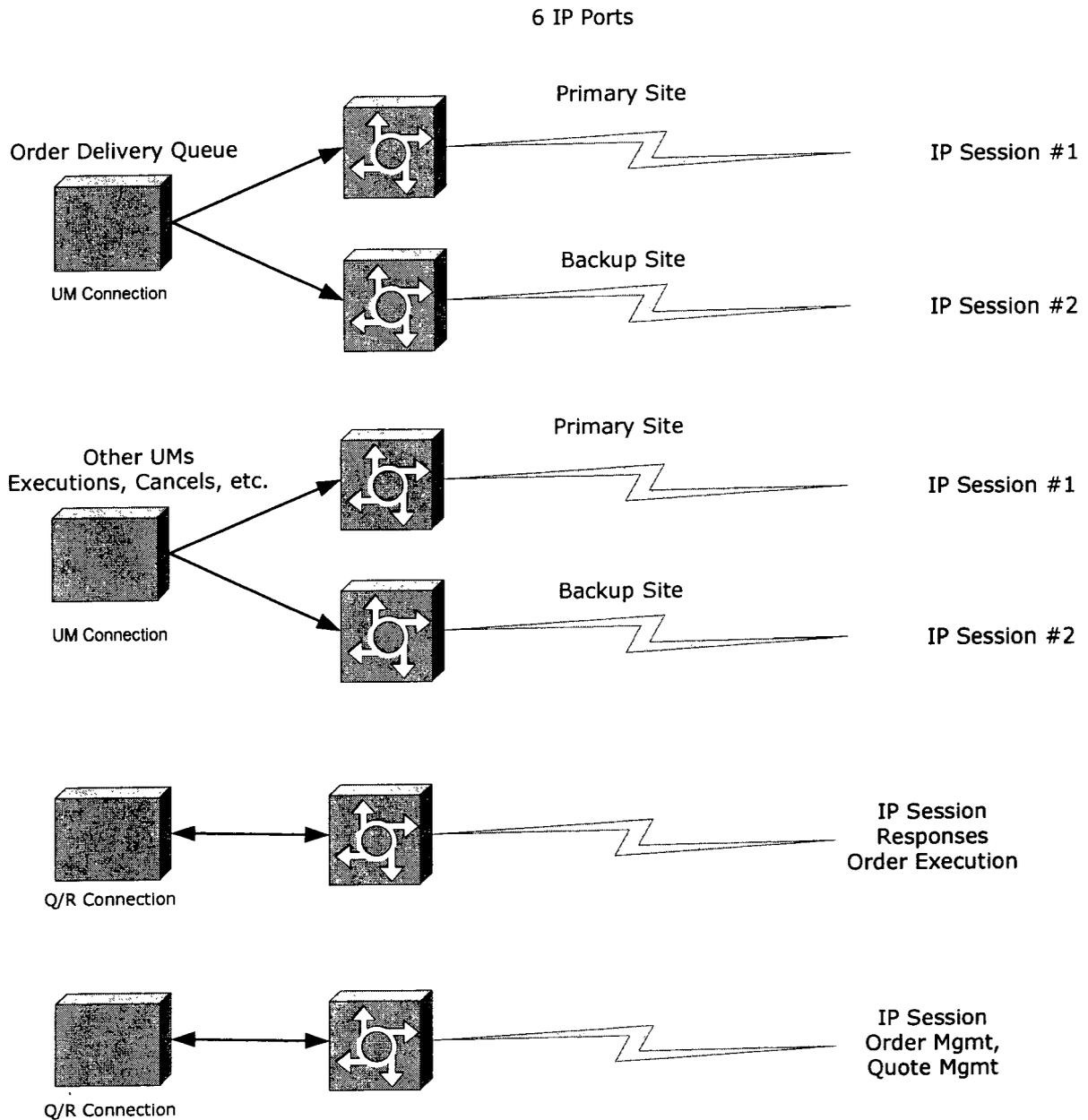
2.2.1 ECN Configuration with a Primary and Secondary Site



2.2.2 ECN Alpha Split Configuration with a Primary and Secondary Site

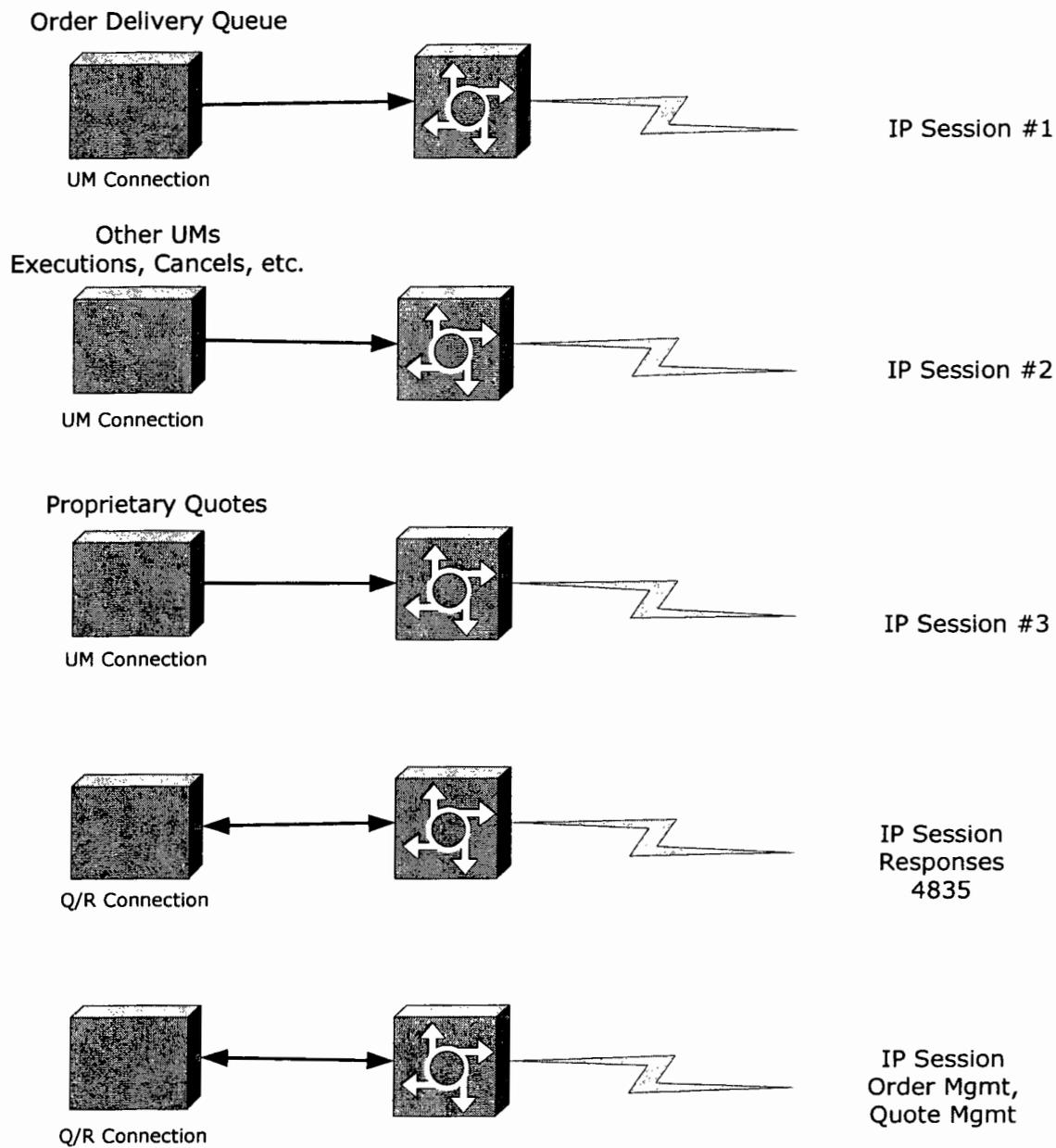


2.2.3 Market Maker/ECN Configuration with a Primary and Secondary Site



2.2.4 Market Maker/ECN Configuration with Proprietary Quote

5 IP Ports



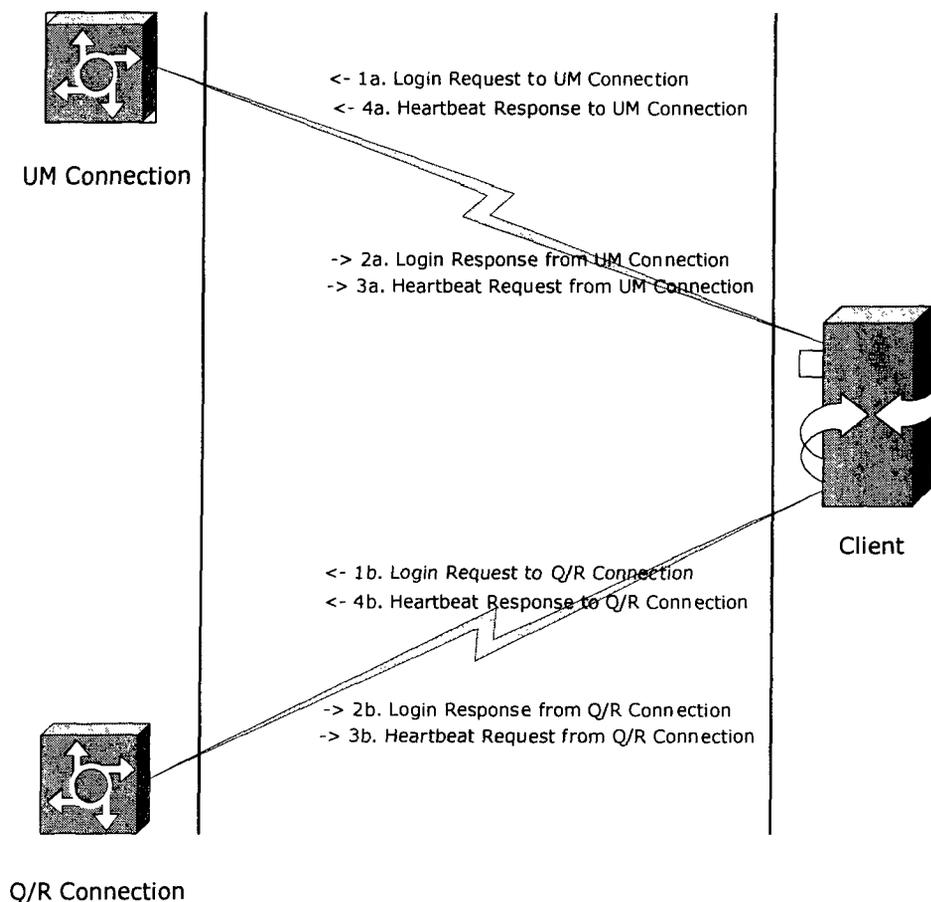
3 Session Protocol

QIX uses a new, lightweight point-to-point session level protocol that is described in this section.

3.1 Session Connection

1. Immediately upon establishing a new TCP/IP socket connection to the server, you must send a Login Request Message to the UM Connection (a) and the Query/Response (Q/R) Connection (b).
2. You will receive a Login Response from the UM Connection (a) and the Q/R Connection (b).
3. You will receive Server Heartbeat Messages every five seconds from the UM Connection (a) and the Q/R Connection (b).
4. You respond immediately with your Heartbeat Message to the UM Connection (a) and the Q/R Connection (b).

QIX Servers



3.2 QIX Logical Packets

The QIX client and server communicate by exchanging a series of logical packets.

Each QIX logical packet begins with a 4-byte, ASCII, right-justified, and zero-filled **message length** (includes the trailer, but does not include itself) followed by a single-byte **packet type**, the **transaction code**, the **message version number**, the **server tracking number**, and 4 bytes of **Reserved data** for UMs or the **client tracking number** and **client sequence number** for Q/R.

A variable length **payload** follows. The payload may not contain the linefeed character (ASCII 10 decimal, 0x0A hex) or the pipe character (ASCII 124 decimal, 0x7C hex).

The final component is a **standard trailer** consisting of a single terminating linefeed character (ASCII 10 decimal, 0x0A hex).

3.3 Session ID Format

The Session ID is defined as a 10-character alphanumeric string with this format:

Name	Offset	Length	Value	Description
Firm ID	0	4	alphanumeric	Firm Name
Date	4	3	DDD	Julian day
Session Type	7	1	alphabetic	Session Type indicator. s = the session is recoverable (the UM connection) u = the session is non-recoverable (the Q/R connection)
Session Number	8	2	alphanumeric	System-assigned session number.

This Session ID will be unique. It will be derived from information in the Firm ID and Session Number in the user configuration file. It is returned to you in the Login Accepted message.

Field Name	Offset	Length	Value / Comments
Sequence Number	21	8	<p>This field pertains to UM connections only and is ignored on Q/R connections.</p> <p>For a standard UM connection, this field can contain either a valid sequence number (right-justified, zero-filled) or spaces.</p> <p>Spaces indicate that you want to start receiving data where it left off, that is, the next message in sequence.</p> <p>If a valid sequence number is supplied, the server begins to transmit data, starting with the next message following the number designated in the sequence number.</p> <p>If a sequence number of all zeroes is supplied, the server will rewind to start of day and begin transmitting up to the current message.</p> <p>For a proprietary quote UM connection, this field is not applicable at this time. The server will begin transmitting the last value cache figures for each security that you currently hold a proprietary position in.</p>
<i>Standard Trailer</i>	29	1	

3.4.2 Login Accepted

The QIX server sends a Login Accepted message in response to a valid Login Request from you. This message type is valid on all connections.

Sample UM Login Accepted Response

0020aHERO355sK000000001<\n>

Message Length	Packet Type	Session ID	Sequence Number	Standard Trailer
0020	a	HERO355sK0	00000001	<\n>

Sample QR Login Accepted Response

0020aHERO355uK000000001<\n>

Message Length	Packet Type	Session ID	Sequence Number	Standard Trailer
0020	a	HERO355sK0	00000001	<\n>

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	a = Login Accepted Packet
Session ID	5	10	The ID of the session that is now logged into.
Sequence Number	15	8	For sequenced UM sessions, specifies the next sequence number to be transmitted by the server. For sequenced Q/R sessions, specifies the next expected Client Sequence Number on this connection.
Standard Trailer	23	1	

3.4.3 Login Rejected

The QIX server sends a Login Rejected message in response to an invalid Login Request from you. This message type is valid on all connections.

Sample Login Rejected Response

0004j01<\n>

Message Length	Packet Type	Reject Reason Code	Standard Trailer
0004	j	01	<\n>

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	j = Login Rejected Packet
Reject Reason Code	5	2	01 = Not Authorized. There was an invalid username and password combination in the Login Request message. 02 = Session not available. 03 = Invalid Sequence Number. 04 = Message Not Available. The Sequence Number supplied in the Login Request is valid but the message is not available.
Standard Trailer	7	1	

3.4.4 Logout Request

You send a Logout Request message to request that the connection be terminated. The server will immediately terminate the connection and close the associated TCP/IP socket. This message type is valid on all connections.

Sample Logout Request

0002o<\n>

Message Length	Packet Type	Standard Trailer
0002	o	<\n>

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	o = Logout Request Packet
<i>Standard Trailer</i>	5	1	

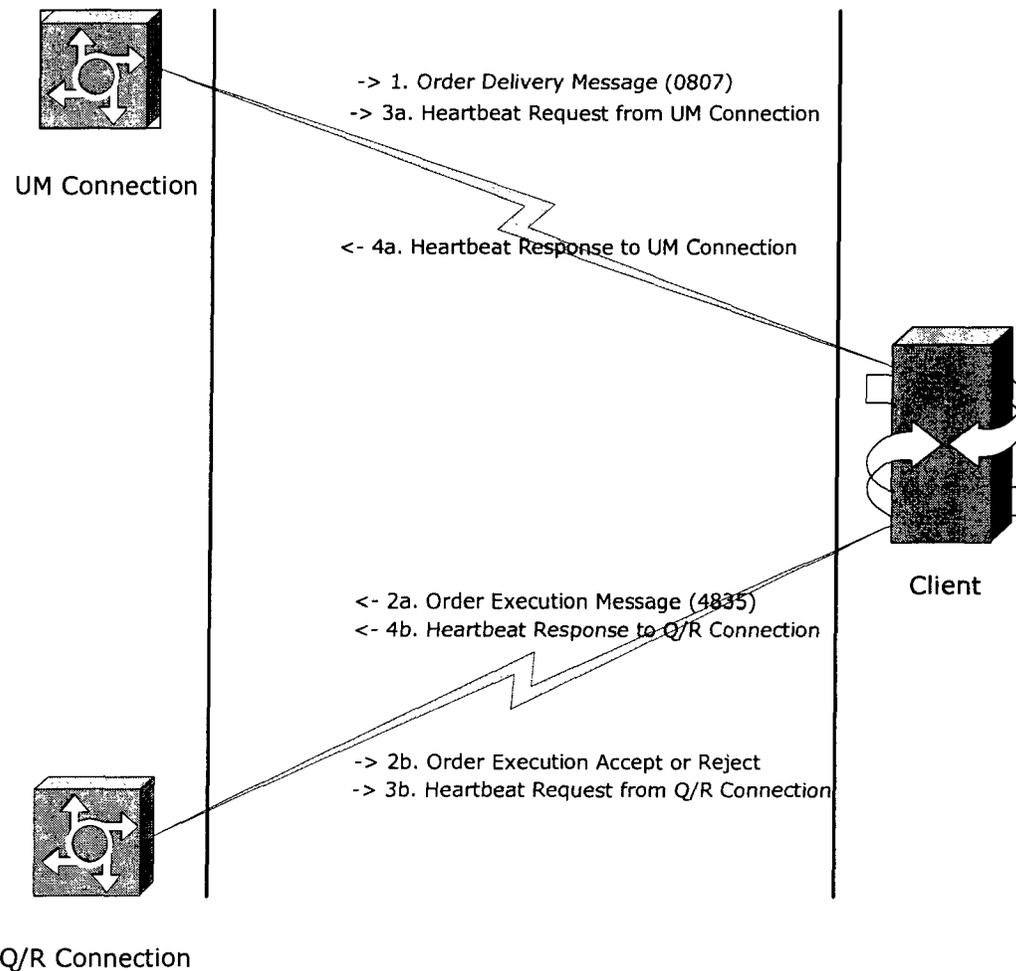
4 Application Protocol

The application level messages implement a new API format based on the current NASDAQ message definitions.

4.1 Order Message Delivery Flow

1. The QIX Server delivers an order (0807) to you via the UM Connection.
2. You respond with the Order Execution Message (4835) via the Q/R Connection (a) and receive an acceptance or rejection (b).
3. You will receive Server Heartbeat Messages every five seconds from the UM Connection (a) and the Q/R Connection (b).
4. You will respond immediately with your Heartbeat Message to the UM Connection (a) and the Q/R Connection (b).

QIX Servers



4.2 NASDAQ Market Center Query/Response Message Formats

Query/response messages can be sequenced or unsequenced inbound and are valid on the query/response connection only.

4.2.1 Execution Kill 4800 Version 00

This message allows you to perform a one-sided kill of a trade.

Sample Execution Kill Request

```
0048u480000121514000016#####MSBK#####00CSK0<\n>
```

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Client Sequence Number	Security Symbol	Execution Reference Number	Standard Trailer
0048	u	4800	00	121514000016	#####	MSBK#####	00CSK0	<\n>

4.2.1.1 Query

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced u = unsequenced data packet
Transaction Code	5	4	4800
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, required to be unique, customer assigned. Echoed back in the 4800 response.
Client Sequence Number	23	8	If packet type = s, next message sequence number on this connection. Else, space-filled.
Security Symbol	31	14	Required unique symbol that identifies an issue.
Execution Reference Number	45	6	Required Execution reference number associated with this trade.
Standard Trailer	51	1	

Sample Execution Kill Response0046u4800001215140000160600000CSK020041215155414 \emptyset <\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Result Code	Execution Reference Number	Accepted Time Stamp	Filler	Standard Trailer
0046	u	4800	00	121514000016	06000	00CSK0	20041215155414	\emptyset	<\n>

4.2.1.2 Response

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	u = unsequenced data packet
Transaction Code	5	4	4800
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, from the request.
Result code	23	5	0x000 x = source code 6 = normal host accept 7 = conditional accept, session level pacing warning 8 = conditional accept, session level pacing implemented
Execution Reference Number	28	6	Execution Reference Number associated with this trade.
Accepted Time Stamp	34	14	Date/Time of Accept. YYYYMMDDHHMMSS.
Filler	48	1	space
Standard Trailer	49	1	

4.2.2 Order Cancel 4801 Version 00

This message allows you to cancel an Open, Not Available, or Purged order.

Sample Order Cancel Request

0054s48010012151400001200000001MSBK04J04FC000MB<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Client Sequence Number	Security Symbol	Order Reference Number	Standard Trailer
0054	s	4801	00	121514000012	00000001	MSBK04J04FC000MB	04J04FC000MB	<\n>

4.2.2.1 Query

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced u = unsequenced data packet
Transaction Code	5	4	4801
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, required to be unique, customer assigned. Echoed back in the 4801 response.
Client Sequence Number	23	8	If packet type = s, next message sequence number on this connection. Else, space-filled.
Security Symbol	31	14	The unique symbol which identifies an issue. Required field.
Order Reference Number	45	12	Required order reference number associated with this order.
Standard Trailer	57	1	

Sample Order Cancel Response

0052u4801001215140000120600004J04FC000MB20041215152946ø<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Result Code	Order Reference Number	Accepted Time Stamp	Filler	Standard Trailer
0052	u	4801	00	121514000012	06000	04J04FC000MB	20041215152946	ø	<\n>

4.2.2.2 Response

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	u = unsequenced data packet
Transaction Code	5	4	4801
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, from the request.
Result code	23	5	0x000 x = source code 6 = normal host accept 7 = conditional accept, session level pacing warning 8 = conditional accept, session level pacing implemented
Order Reference Number	28	12	Reference Number associated with this order.
Accepted Time Stamp	40	14	Date/Time of Accept. YYYYMMDDHHMMSS.
Filler	54	1	space
Standard Trailer	55	1	

4.2.3 Quote Update 4804 Version 00

This message allows you to update your bid price, ask price, and size in an issue and open, close, or withdraw your market position in an issue.

Sample Quote Update Request

0108u480400121514000002MSBK0000078000000000890000<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Client Sequence Number	Security Symbol	Request Quote Code	Bid Direction	Bid Quote Price	Bid Size
0108	u	4804	00	121514000002		MSBK	U	B	0000780000	

Bid Reserve Size	Bid Refresh Amount Size	Ask Direction	Ask Quote Price	Ask Size	Ask Reserve Size	Ask Refresh Amount Size	Lock Cross Flag	Reserved for NASDAQ	Order Price Improve Flag	Filler	Standard Trailer
		B	0000890000				N		B	B	<\n>

4.2.3.1 Query

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced u = unsequenced data packet
Transaction Code	5	4	4804
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, required to be unique, customer assigned. Echoed back in the 4804 response.
Client Sequence Number	23	8	If packet type = s, next message sequence number on this connection. Else, space-filled.
Security Symbol	31	14	The unique symbol which identifies an issue. Required field. For a listed security,

Field Name	Offset	Length	Value / Comments
			this symbol must be in CMS format. For example: OXY PRB ROY PR SCZ WD SRF CL FLA B
Request Quote Code	45	1	Indicates the function of the request. U = update O = open C = close W = withdraw S = summary
Bid Direction	46	1	Indicates how to treat the Bid Quote Price field. 0 = decrement current bid quote by the amount in the Bid Quote Price field. 1 = increment current bid quote by the amount in the Bid Quote Price field. space = replace current bid quote by the amount in the Bid Quote Price field.
Bid Quote Price	47	10	If Bid direction field has a value, then price is treated as an increment/decrement to current bid quote. Otherwise, price is used as a replacement Bid Quote Price. all spaces = no price entered
Bid Size	57	5	Format: an optional "+" or "-" followed by from one to four numeric characters. If the "+" or "-" is not entered, the value is interpreted as the maximum number of shares (in round lots) of a specific security a market maker is willing to buy at the quoted price in a single trade. If the "+" or "-" precedes the number of shares, it represents an increment or decrement to the current value. Number of round lots in this security associated with the MP Bid Price. all spaces = no size entered Four zeroes = cancel specified summary quote

Field Name	Offset	Length	Value / Comments
Bid Reserve Size	62	7	<p>Format: an optional "+" or "-" followed by one to six numeric characters. If the "+" or "-" is not entered, the value is interpreted as the buy-side reserve limit for a specified market maker in a specified security. If the "+" or "-" precedes the number of shares, it represents an increment or decrement to the current value. Its value is within the range of 0 to 999900.</p> <p>Number of reserve shares associated with this MP Buy Side. Reserve size must be in actual shares in round lots.</p> <p>All spaces = no reserve size entered</p>
Bid Refresh Amount Size	69	6	<p>Number of refresh amount shares associated with this MP Buy Side.</p> <p>Refresh size must be in actual shares in round lots.</p> <p>All spaces = no refresh size entered</p>
Ask Direction	75	1	<p>Indicates how to treat the Ask Quote Price field.</p> <p>0 = decrement current ask quote by the amount in the Ask Quote Price field.</p> <p>1 = increment current ask quote by the amount in the Ask Quote Price field.</p> <p>space = replace current ask quote by the amount in the Ask Quote Price field.</p>
Ask Quote Price	76	10	<p>If Ask direction field has a value, then price is treated as an increment/decrement to current ask quote. Otherwise, price is used as a replacement Ask Quote Price.</p> <p>all spaces = no price entered</p>
Ask Size	86	5	<p>Number of round lots in this security associated with the MP Ask Price.</p> <p>Format: an optional "+" or "-" followed by from one to four numeric characters. If the "+" or "-" is not entered, the value is interpreted as the maximum number of shares (in round lots) of a specific security a market maker is willing to sell at the quoted price in a single trade. If the "+" or "-" precedes the number of shares, it represents an increment or decrement to the current value.</p>

Field Name	Offset	Length	Value / Comments
			All spaces = no size entered Four zeroes = cancel specified summary quote
Ask Reserve Size	91	7	Number of reserve shares associated with this MP Ask Side. Format: an optional "+" or "-" followed by from one to six numeric characters. If the "+" or "-" is not entered, the value is interpreted as the ask-side reserve limit for a specified market maker in a specified security. If the "+" or "-" precedes the number of shares, it represents an increment or decrement to the current value. Its value is within the range of 0 to 999900. Number of reserve shares associated with this MP Ask Side. Reserve size must be in actual shares in round lots. All spaces = no reserve size entered
Ask Refresh Amount Size	98	6	Number of refresh amount shares associated with this MP Ask Side. Refresh size must be in actual shares in round lots. All spaces = no refresh size entered
Lock Cross Flag	104	1	Required. Y = override N = do not override
Reserved for NASDAQ	105	4	Space-filled.
Order Price Improve Flag	109	1	Price improvement indicates separate access fee used by ECNs. Currently must be set = N. Space defaults to N at the host.
Filler	110	1	space
Standard Trailer	111	1	

Sample Quote Update Response

0106u48040012151400000206000MSBK#####U000078000099990#####000089000099990#####
#####20041215141653<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Result Code	Security Symbol	Response Quote Code	Bid Quote Price	Bid Size
0106	u	4804	00	121514000002	06000	MSBK#####	U	0000780000	9999

Bid Reserve Size	Bid Refresh Amount	Ask Quote Price	Ask Size	Ask Reserve Size	Ask Refresh Amount	Accepted Time Stamp	Standard Trailer
#####	#####	0000890000	9999	#####	#####	20041215141653	<\n>

4.2.3.2 Response

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	u = unsequenced data packet
Transaction Code	5	4	4804
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, from the request.
Result code	23	5	0x000 x = source code 6 = normal host accept 7 = conditional accept, session level pacing warning. 8 = conditional accept, session level pacing implemented
Security Symbol	28	14	

Field Name	Offset	Length	Value / Comments
Response Quote Code	42	1	U = Request was a quote update (U) and the position is open O = Request opened (O) the position C = Request closed the position or the request is a quote update (U or S) and the position is closed or in an outage W = Request withdraws the position (W) S = Request was a summary quote (S) and the position is open
Bid Quote Price	43	10	Bid price resulting from the quote update. "NQ" if no price.
Bid Size	53	4	Number of round lots in this security associated with the MP Bid Price.
Bid Reserve Size	57	6	Number of reserve shares associated with this MP Bid Side.
Bid Refresh Amount	63	6	Number of refresh amount shares associated with this MP Bid Side.
Ask Quote Price	69	10	Ask price resulting from the quote update. "NQ" if no price.
Ask Size	79	4	Number of round lots in this security associated with the MP Ask Price.
Ask Reserve Size	83	6	Number of reserve shares associated with this MP Ask Side.
Ask Refresh Amount	89	6	Number of refresh amount shares associated with this MP Ask Side.
Accepted Time Stamp	95	14	Date/Time of Accept. YYYYMMDDHHMMSS.
<i>Standard Trailer</i>	109	1	

4.2.4 Host Settings 4824 Version 00

This message allows you to view and update quote and order related values at the position level.

Sample Host Settings Request

0088u482400121514000019MSBFON<n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Client Sequence Number	Security Symbol	Reserved for NASDAQ	Type	Autoquote Refresh Indicator	AQR Tick Value Bid
0088	u	4824	00	121514000019		MSBF		0	N	

AQR Tick value Ask	AQR Quote Bid Size	AQR Quote Ask Size	Bid Refresh Amount Size	Ask Refresh Amount Size	Standard Trailer
					<n>

4.2.4.1 Query

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced u = unsequenced data packet
Transaction Code	5	4	4824
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, required to be unique, customer assigned. Echoed back in the 4824 response.
Client Sequence Number	23	8	If packet type = s, next message sequence number on this connection. Else, space-filled.

Field Name	Offset	Length	Value / Comments
Security Symbol	31	14	The unique symbol which identifies an issue. Required field. For a listed security, this symbol must be in CMS format. For example: OXY PRB ROY PR SCZ WD SRF CL FLA B
Reserved for NASDAQ	45	4	All spaces
Type	49	1	0 = query 1 = update
Autoquote Refresh Indicator	50	1	AQR activation indicator. N = do not activate AQR Y = activate AQR
AQR Tick Value Bid	51	10	AQR price increment for the bid side. all spaces = no value entered
AQR Tick Value Ask	61	10	AQR price increment for the ask side. all spaces = no value entered
AQR Quote Bid Size	71	4	AQR size for the bid quote in round lots. all spaces = no value entered
AQR Quote Ask Size	75	4	AQR size for the ask quote in round lots. all spaces = no value entered
Bid Refresh Amount Size	79	6	Bid refresh amount in actual shares, in round lot multiples. all spaces = no value entered
Ask Refresh Amount Size	85	6	Bid refresh amount in actual shares, in round lot multiples. all spaces = no value entered
<i>Standard Trailer</i>	91	1	

Sample Host Settings Response

0082u48240012151400001906000MSBF#####N00000000000000000000#####200#####200#####YY<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Result code	Security Symbol	Autoquote Refresh Indicator	AQR Tick Value Bid	AQR Tick value Ask
0088	u	4824	00	121514000019	06000	MSBF#####	N	0000000000	0000000000

AQR Quote Bid Size	AQR Quote Ask Size	Bid Refresh Amount Size	Ask Refresh Amount Size	Carry Quote Overnight	Carry Summary Quote Overnight	Standard Trailer
#####	#####	200###	200###	Y	Y	<\n>

4.2.4.2 Response

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	u = unsequenced data packet
Transaction Code	5	4	4824
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, from the request.
Result code	23	5	0x000 x = source code 6 = normal host accept 7 = conditional accept, session level pacing warning. 8 = conditional accept, session level pacing implemented
Security Symbol	28	14	
Autoquote Refresh Indicator	42	1	Indicates whether the AQR is set. N = not set Y = set

Field Name	Offset	Length	Value / Comments
AQR Tick Value Bid	43	10	AQR price increment for the bid side. all spaces = no value
AQR Tick Value Ask	53	10	AQR price increment for the ask side. all spaces = no value
AQR Quote Bid Size	63	4	AQR size for the bid quote in round lots. all spaces = no value
AQR Quote Ask Size	67	4	AQR size for the ask quote in round lots. all spaces = no value
Bid Refresh Amount Size	71	6	Bid refresh amount in actual shares in round lot multiples. all spaces = no value
Ask Refresh Amount Size	77	6	Ask refresh amount in actual shares in round lot multiples. all spaces = no value entered
Carry Quote Overnight	83	1	Allows you to indicate whether both display and reserve sizes of the quote should be carried over, whether only display size should be carried over, or whether both display and reserve sizes should be canceled. Y = both display and reserve sizes carried over N = both display and reserve sizes canceled D = display size only carried over
Carry Summary Quote Overnight	84	1	Allows you to indicate whether both display and reserve sizes of the summary quote should be carried over, whether only display size should be carried over, or whether both display and reserve sizes should be canceled. Y = both display and reserve sizes carried over N = both display and reserve sizes canceled D = display size only carried over
<i>Standard Trailer</i>	85	1	

Field Name	Offset	Length	Value / Comments
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric. Required to be unique, customer assigned. Echoed back in the 4833 response.
Client Sequence Number	23	8	If packet type = s, next message sequence number on this connection. Else, space-filled.
Security Symbol	31	14	The unique symbol which identifies an issue. Required field. For a listed security, this symbol must be in CMS format. For example: OXY PRB ROY PR SCZ WD SRF CL FLA B
Order Reference Number	45	12	Order number associated with the original order.
Order Side	57	2	Describes the side of an order. B = buy S = sell SS = sell short SX = sell short exempt
Order Quantity	59	6	Number of shares of replacement order.
Order Price	65	10	Entered price of an order. 10-character standard price format or MKT = market price NBBO = pegged orders (not allowed for listed securities)
Preferred MPID	75	4	Optional field. Allows order to be sent to a specific market or market participant. SIZE cannot be used as a market participant. Allowed values are: 1. Market Participant ID 2. NADQ - for a NASDAQ security, indicates a "NASDAQ Market Center Only" option whereby the system will allocate the order against interest by NASDAQ participants only. The order will not be routed to external venues. 3. Exchange ID A = American Stock Exchange B = Boston Stock Exchange C = Cincinnati Stock Exchange

Field Name	Offset	Length	Value / Comments
			<p>M = Chicago Stock Exchange N = New York Stock Exchange P = ARCA/EX Pacific Stock Exchange W = Chicago Board Options Exchange (CBOE) X = Philadelphia Stock Exchange</p> <p>4. "SIM" – fill-or-return (listed security only)</p> <p>5. All spaces = omitted. For a NASDAQ security, the system will allocate the order against interest from NASDAQ participants and external venues.</p>
Reserve Size	79	6	<p>Indicates the quantity of the Reserve size. Reserve size must be in shares either in round lot multiples or in mixed lots. all spaces = omitted</p>
Refresh Amount Size	85	6	<p>Indicates the quantity to which Display size will be replenished from Reserve size. Must be in shares, in a round lot multiple. all spaces = omitted</p>
Order Capacity	91	1	<p>Indicates on whose behalf the order was entered. If the host receives a space value, host will use firm profile value.</p> <p>A = agency P = principal R = riskless Space = omitted</p>
Order Priority	92	1	<p>Indicates which execution algorithm is to be utilized. If the host receives a space value, host will use firm profile value.</p> <p>The sweep algorithm allows you to trade through the NBBO when executing your exchange-listed security orders. Price improvement is not allowed for exchange-listed securities.</p> <p>NASDAQ Market Center values: T = price/time U = auto-ex I = imbalance only (for Opening and Closing Cross)</p> <p>Exchange-Listed values: T = price/time S = Sweep</p>

Field Name	Offset	Length	Value / Comments
AIQ Indicator	93	1	This value is used to specify whether internalization is allowed on this order. The default is "N" for both quoting and non-quoting participants. Y = never allow internalization; orders with the same MPID will not match with this order N = internalize first I = do not internalize first, but allow this order to match orders with the same MPID
Order Time In Force	94	3	Defines the life of an order before it is canceled by the system if it is not executed or canceled by the participant. NASDAQ Market Center values: DAY = executable from market open to market close GTC = good till cancel, executable from market open to market close IOC = immediate or cancel, executable from market open to market close OC = on close, executable only during the closing cross IOX = immediate or cancel, executable from pre-open to market close X = executable from market open to market close OO = on open, executable only during the opening cross. GTX = similar to GTC but executable and displayable outside market hours. Listed Values: DAY = expires at market close GTC = good till cancel IOC = immediate or cancel X = cancel at 6:30 (session close) GTX = good till cancel, and that cancel will occur at 6:30 (session close) IOX = immediate or cancel at 6:30 (session close)
Order Give Up	97	4	Allows MP to indicate another MP who will execute the order. all spaces = omitted
User Order ID	101	20	Indicates order ID entered by MP for internal processing. all spaces = omitted

Field Name	Offset	Length	Value / Comments
Alternate Clearing Number	121	4	User can indicate an alternate Clearing Number. all spaces = host will use firm profile value
Order Received Date	125	8	Indicates Order Received entered by MP for internal processing. MMDDYYYY format all spaces = omitted
Order Branch Sequence Number	133	8	Branch ID/Sequence Number Branch sequence numbers that are not 1-4 alphabetic characters followed by 1-4 numeric characters will be rejected. 8 alphas or 8 numbers are not acceptable. all spaces = omitted
Dividend/Split Indicator	141	3	Indicates if size and price should be processed with Corporate Actions. DNR = do not reduce DNI = do not increase YES = apply dividend split updates to the order NO = do not apply dividend split updates to the order
Order Override Flag	144	1	Allows MP to override Price and Size warnings. Y = yes N = no
Order Attributable Flag	145	1	Causes the user order to display anonymously (under SIZE) if set. P = pre-trade non-attributable N = attributable Y = pre-trade and post-trade non-attributable
Order Price Improve Flag	146	1	Price improvement indicates separate access fee used by ECNs. Must be set to N.
Order Bunched Flag	147	1	Identifies grouped orders. Y = yes N = no
Order Type	148	1	Signifies type of order. O = Order U = Summary order

Field Name	Offset	Length	Value / Comments
Peg Type	149	1	Signifies whether a pegged order is Regular or Reverse. Pegged orders are not allowed for a listed security G = Regular pegged order R = Reverse pegged order N = Non-pegged order.
Peg Offset	150	1	Applicable to Pegged orders and indicates the numerical offset that is applied to the current inside bid/offer to derive the current display price for the order. If the "Peg type" is G, this field should be set to 0. If the "Peg type" is R, this field should be set to 1. Pegged orders are not allowed for a listed security. 0 = regular pegged order 1 = reverse pegged order space = non-pegged order
Peg Cap Price	151	10	Limit price at which the pegging action stops to prevent the pegged order price from running away and executing at an undesirable price. Pegged orders are not allowed for a listed security. all spaces = omitted
Discretionary Flag	161	1	Indicates whether an order is discretionary. Y = discretionary order N = non-discretionary order
Discretionary Range	162	2	Applied to the display price to establish the price range within which the discretionary order may be executed. For Discretionary orders, this is a required field. 01-99 spaces = non-discretionary order
Complaint Response	164	5	For listed securities only. Allows you to preference an order to an exchange in response to a complaint. In this field, you indicate the complaint ID number for the complaint to which the order is responding. You obtain this ID number from Market Watch. all spaces = omitted
Block Indicator	169	1	Allows user to submit a block order for a listed security. This field is applicable only if it is indicated on an ITS commitment. It will be ignored if the order is preferenced to a NASDAQ Market Center Trading participant or

Field Name	Offset	Length	Value / Comments
			NASDAQ Market Center-only ("SIM"). Y = yes N = no Space = omitted
Filler	170	1	space
<i>Standard Trailer</i>	171	1	

Sample Order Cancel/Replace Response

0052u4833001215140000110600004J04FC000MB20041215152116ø<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Result code	Order Reference Number	Accepted Time Stamp	Filler	Standard Trailer
0052	u	4833	00	121514000011	06000	04J04FC000MB	20041215152116	ø	<\n>

4.2.5.2 Response

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	u = unsequenced data packet
Transaction Code	5	4	4833
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, from the request.
Result code	23	5	0x000 x = source code 6 = normal host accept 7 = conditional accept - session level pacing warning 8 = conditional accept - session level pacing implemented
Order Reference Number	28	12	Reference number associated with the replace order.
Accepted Time Stamp	40	14	Date/Time of Accept. YYYYMMDDHHMMSS.
Filler	54	1	space
<i>Standard Trailer</i>	55	1	

4.2.6 Order Cancel/Replace 4833 Version 01

This message allows you to cancel and replace an open order. You cannot change security symbol by this function; you must cancel the order and send a new one. This version is the result of the NASDAQ Routing Phase 2 project.

Sample Order Cancel/Replace Request

0168u483301121514000011MSBK04J04FC000M7B 2000000800000NDAYNO>NNNONN<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Client Sequence Number	Security Symbol	Order Reference Number	Order Side	Order Quantity
0168	u	4833	01	121514000011		MSBK	04J04FC000M7	B	200

Order Price	Preferred MPID	Reserve Size	Refresh Amount Size	Order Capacity	Order Priority	AIQ Indicator	Order Time In Force	Order Give Up	User Order ID	Alternate Clearing Number
000080000						N	DAY			

Order Received Date	Order Branch Sequence Number	Dividend/Split Indicator	Order Override Flag	Order Attributable Flag	Order Price Improve Flag	Order Bunched Flag	Order Type	Peg Type	Peg Offset	Peg Cap Price	Discretionary Flag	Discretionary Range	Complaint Response	Block Indicator	Standard Trailer
		N	N	N	N	N	O	N			N				<\n>

4.2.6.1 Query

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced u = unsequenced data packet

Field Name	Offset	Length	Value / Comments
Transaction Code	5	4	4833
Version Number	9	2	01
Client Tracking Number	11	12	Alphanumeric. Required to be unique, customer assigned. Echoed back in the 4833 response.
Client Sequence Number	23	8	If packet type = s, next message sequence number on this connection. Else, space-filled.
Security Symbol	31	14	The unique symbol which identifies an issue. Required field. For a listed security, this symbol must be in CMS format. For example: OXY PRB ROY PR SCZ WD SRF CL FLA B
Order Reference Number	45	12	Order number associated with the original order.
Order Side	57	2	Describes the side of an order. B = buy S = sell SS = sell short SX = sell short exempt
Order Quantity	59	6	Number of shares of replacement order.
Order Price	65	10	Entered price of an order. 10-character standard price format or MKT = market price NBBO = pegged orders (not allowed for listed securities)
Preferred MPID	75	4	Optional field. Allows order to be sent to a specific market or market participant. SIZE cannot be used as a market participant. Allowed values are: <ul style="list-style-type: none"> 1. Market Participant ID 2. NADQ – for a NASDAQ security, indicates a "NASDAQ Market Center Only" option whereby the system will allocate the order against interest by NASDAQ participants only. The order will not be routed to external venues. 3. Exchange ID <ul style="list-style-type: none"> A = American Stock Exchange B = Boston Stock Exchange

Field Name	Offset	Length	Value / Comments
			C = Cincinnati Stock Exchange M = Chicago Stock Exchange N = New York Stock Exchange P = ARCA/EX Pacific Stock Exchange W = Chicago Board Options Exchange (CBOE) X = Philadelphia Stock Exchange 4. "SIM" – fill-or-return (listed security only) 5. All spaces = omitted. For a NASDAQ security, the system will allocate the order against interest from NASDAQ participants and external venues.
Reserve Size	79	6	Indicates the quantity of the Reserve size. Reserve size must be in shares either in round lot multiples or in mixed lots. all spaces = omitted
Refresh Amount Size	85	6	Indicates the quantity to which Display size will be replenished from Reserve size. Must be in shares, in a round lot multiple. all spaces = omitted
Order Capacity	91	1	Indicates on whose behalf the order was entered. If the host receives a space value, host will use firm profile value. A = agency P = principal R = riskless Space = omitted
Order Priority	92	1	Indicates which execution algorithm is to be utilized. If the host receives a space value, host will use firm profile value. The sweep algorithm allows you to trade through the NBBO when executing your exchange-listed security orders. Price improvement is not allowed for exchange-listed securities. NASDAQ Market Center values: T = price/time U = auto-ex I = imbalance only (for Opening and Closing Cross) A = Super-Aggressive order Exchange-Listed values:

Field Name	Offset	Length	Value / Comments
			T = price/time S = Sweep
AIQ Indicator	93	1	This value is used to specify whether internalization is allowed on this order. The default is "N" for both quoting and non-quoting participants. Y = never allow internalization; orders with the same MPID will not match with this order N = internalize first I = do not internalize first, but allow this order to match orders with the same MPID
Order Time In Force	94	3	Defines the life of an order before it is canceled by the system if it is not executed or canceled by the participant. NASDAQ Market Center values: DAY = executable from market open to market close GTC = good till cancel, executable from market open to market close IOC = immediate or cancel, executable from market open to market close OC = on close, executable only during the closing cross IOX = immediate or cancel, executable from pre-open to market close X = executable from market open to market close OO = on open, executable only during the opening cross. GTX = similar to GTC but executable and displayable outside market hours. Listed Values: DAY = expires at market close GTC = good till cancel IOC = immediate or cancel X = cancel at 6:30 (session close) GTX = good till cancel, and that cancel will occur at 6:30 (session close) IOX = immediate or cancel at 6:30 (session close)
Order Give Up	97	4	Allows MP to indicate another MP who will execute the order. all spaces = omitted

Field Name	Offset	Length	Value / Comments
User Order ID	101	20	Indicates order ID entered by MP for internal processing. all spaces = omitted
Alternate Clearing Number	121	4	User can indicate an alternate Clearing Number. all spaces = host will use firm profile value
Order Received Date	125	8	Indicates Order Received entered by MP for internal processing. MMDDYYYY format all spaces = omitted
Order Branch Sequence Number	133	8	Branch ID/Sequence Number Branch sequence numbers that are not 1-4 alphabetic characters followed by 1-4 numeric characters will be rejected. 8 alphas or 8 numbers are not acceptable. all spaces = omitted
Dividend/Split Indicator	141	3	Indicates if size and price should be processed with Corporate Actions. DNR = do not reduce DNI = do not increase YES = apply dividend split updates to the order NO = do not apply dividend split updates to the order
Order Override Flag	144	1	Allows MP to override Price and Size warnings. Y = yes N = no
Order Attributable Flag	145	1	Causes the user order to display anonymously (under SIZE) if set. P = pre-trade non-attributable N = attributable Y = pre-trade and post-trade non-attributable
Order Price Improve Flag	146	1	Price improvement indicates separate access fee used by ECNs. Must be set to N.
Order Bunched Flag	147	1	Identifies grouped orders. Y = yes N = no
Order Type	148	1	Signifies type of order. O = Order U = Summary order

Field Name	Offset	Length	Value / Comments
Peg Type	149	1	Signifies whether a pegged order is Regular or Reverse. Pegged orders are not allowed for a listed security G = Regular pegged order to NASDAQ Inside R = Reverse pegged order to NASDAQ Inside. H = Regular pegged order to NBBO. Q = Reverse pegged order to NBBO. N = Non-pegged order.
Peg Offset	150	2	Applicable to Pegged orders and indicates the numerical offset that is applied to the current inside bid/offer to derive the current display price for the order. Pegged orders are not allowed for a listed security. 00-99 = offset value if a pegged order spaces = non-pegged order
Peg Cap Price	152	10	Limit price at which the pegging action stops to prevent the pegged order price from running away and executing at an undesirable price. Pegged orders are not allowed for a listed security. all spaces = omitted
Discretionary Flag	162	1	Indicates whether an order is discretionary. Y = discretionary order N = non-discretionary order
Discretionary Range	163	2	Applied to the display price to establish the price range within which the discretionary order may be executed. For Discretionary orders, this is a required field. 01-99 spaces = non-discretionary order
Complaint Response	165	5	For listed securities only. Allows you to preference an order to an exchange in response to a complaint. In this field, you indicate the complaint ID number for the complaint to which the order is responding. You obtain this ID number from Market Watch. all spaces = omitted
Block Indicator	170	1	Allows user to submit a block order for a listed security. This field is applicable only if it is indicated on an ITS commitment. It will be ignored if the order is preferenced to a NASDAQ Market Center Trading participant or NASDAQ Market Center-only ("SIM").

Field Name	Offset	Length	Value / Comments
			Y = yes N = no Space = omitted
<i>Standard Trailer</i>	171	1	

Sample Order Cancel/Replace Response

0052u4833011215140000110600004J04FC000MB20041215152116ø<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Result code	Order Reference Number	Accepted Time Stamp	Filler	Standard Trailer
0052	u	4833	01	121514000011	06000	04J04FC000MB	20041215152116	ø	<\n>

4.2.6.2 Response

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	u = unsequenced data packet
Transaction Code	5	4	4833
Version Number	9	2	01
Client Tracking Number	11	12	Alphanumeric, from the request.
Result code	23	5	0x000 x = source code 6 = normal host accept 7 = conditional accept – session level pacing warning 8 = conditional accept – session level pacing implemented
Order Reference Number	28	12	Reference number associated with the replace order.
Accepted Time Stamp	40	14	Date/Time of Accept. YYYYMMDDHHMMSS.
Filler	54	1	space
<i>Standard Trailer</i>	55	1	

4.2.7 Order Execution 4835 Version 00

You respond to the Order Delivery Message via the Order Execution Message. This message allows you to Execute/Decline/Partial the delivered order.

Sample Order Execution Request

0112u483500122010000006#####MSBF#####00F266000001#
5A8BAA7FA50E231388373296C071E32C0000200000100#####100#####<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Client Sequence Number	Security Symbol	Order Delivery ID	Short Sale Flag
0112	u	4835	00	122010000006	#####	MSBF#####	00F266000001	#

Order Delivered Timestamp	Execution Price	Accepted Quantity	Declined Quantity	Filler	Standard Trailer
5A8BAA7FA50E231388373296C071E32C	0000200000	100####	100####	#	<\n>

4.2.7.1 Query

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced u = unsequenced data packet
Transaction Code	5	4	4835
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric. Required to be unique, customer assigned. Echoed back in the 4835 response.
Client Sequence Number	23	8	If packet type = s, next message sequence number on this connection. Else, space-filled.
Security Symbol	31	14	The unique symbol which identifies an issue. Required field.
Order Delivery ID	45	12	Echoed from Order Delivery Message.

Field Name	Offset	Length	Value / Comments
Short Sale Flag	57	1	This field pertains to the order placed by the firm accepting delivery and not to the incoming order. S = short sale X = short sale exempt space = omitted
Order Delivered Timestamp	58	32	Echoed from Order Delivery Message.
Execution Price	90	10	Price Improvement (if applicable).
Accepted Quantity	100	7	All spaces = omitted Note: current NASDAQ host applications will accept a max quantity of 6 characters.
Declined Quantity	107	7	All spaces = omitted Note: current NASDAQ host applications will accept a max quantity of 6 characters.
Filler	114	1	space
<i>Standard Trailer</i>	115	1	

4.2.7.2 Response**Sample Order Execution Response**

0052u4835001220100000060600000F26600000120041220135548␣<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Result code	Delivery ID	Accepted Time Stamp	Filler	Standard Trailer
0052	u	4835	00	122010000006	06000	00F266000001	20041220135548	␣	<\n>

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	u = unsequenced data packet
Transaction Code	5	4	4835
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, from the request.
Result code	23	5	0x000 x = source code 6 = normal host accept 7 = conditional accept, session level pacing warning 8 = conditional accept, session level pacing implemented
Delivery ID	28	12	Reference number associated with this order.
Accepted Time Stamp	40	14	Date/Time of Accept. YYYYMMDDHHMMSS.
Filler	54	1	space
Standard Trailer	55	1	

4.2.8 Order Entry 4838 Version 00

This message allows you to enter orders into the NASDAQ market center system for potential delivery and execution.

Sample Order Entry Request

0156u483800121514000009MSBK100000790000NDAY
 NO>NNNONNNNONNNNN<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Client Sequence Number	Security Symbol	PooDup Flag	Order Side	Order Quantity
0156	u	4838	00	121514000009	MSBK	100000790000	N	B	100

Order Price	Preferred MPID	Reserve Size	Refresh Amount Size	Order Capacity	Order Priority	AIQ Indicator	Order Time In Force	Order Give Up	User Order ID	Alternate Clearing Number
0000790000						N	DAY			

Order Received Date	Order Branch Sequence Number	Dividend/Split Indicator	Order Override Flag	Order Attributable Flag	Order Price Improve Flag	Order Bunched Flag	Order Type	Peg Type	Peg Offset	Peg Cap Price	Discretionary Flag	Discretionary Range	Complaint Response	Block Indicator	Standard Trailer
		NO	N	N	N	N	O	N			N				<\n>

4.2.8.1 Query

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced u = unsequenced data packet
Transaction Code	5	4	4838

Field Name	Offset	Length	Value / Comments
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric. Required to be unique, customer assigned. Echoed back in the 4838 response. Note: If PossDup Flag = Y, this field must equal the Client Tracking Number of the original transaction.
Client Sequence Number	23	8	If packet type = s, next message sequence number on this connection. Else, space-filled.
Security Symbol	31	14	The unique symbol which identifies an issue. Required field. For a listed security, this symbol must be in CMS format. For example: OXY PRB ROY PR SCZ WD SRF CL FLA B
PossDup Flag	45	1	Required for retransmissions. Indicates possible retransmission of message with this Client Tracking Number. Y = possible duplicate N = original transmission
Order Side	46	2	Describes the side of an order. B = buy S = sell SS = sell short SX = sell short exempt
Order Quantity	48	6	Number of shares of original order.
Order Price	54	10	Entered price of an order. MKT = market price, NBBO = pegged orders (not allowed for listed securities), or 10-character standard price format.
Preferred MPID	64	4	Optional field. Allows order to be sent to a specific market or market participant. SIZE cannot be used as a market participant. Allowed values are: 1. Market Participant ID 2. NADQ - for a NASDAQ security, indicates a "NASDAQ Market Center Only" option whereby the system will

Field Name	Offset	Length	Value / Comments
			<p>allocate the order against interest by NASDAQ participants only. The order will not be routed to external venues.</p> <p>3. Exchange ID A = American Stock Exchange B = Boston Stock Exchange C = Cincinnati Stock Exchange M = Chicago Stock Exchange N = New York Stock Exchange P = ARCA/EX Pacific Stock Exchange W = Chicago Board Options Exchange (CBOE) X = Philadelphia Stock Exchange</p> <p>4. SIM = fill-or-return (exchange-listed security only)</p> <p>5. all spaces = omitted. For a NASDAQ security, the system will allocate the order against interest from NASDAQ participants and external venues.</p>
Reserve Size	68	6	<p>Indicates the quantity of the Reserve size. Reserve size must be in shares either in round lot multiples or in mixed lots. all spaces = omitted</p>
Refresh Amount Size	74	6	<p>Indicates the quantity to which Display size will be replenished from Reserve size. Must be in shares, in a round lot multiple. all spaces = omitted</p>
Order Capacity	80	1	<p>Indicates on whose behalf the order was entered. If the host receives a space value, host will use firm profile value. A = agency P = principal R = riskless space = omitted</p>
Order Priority	81	1	<p>Indicates which execution algorithm is to be utilized. If the host receives a space value, host will use firm profile value. The sweep algorithm allows you to trade through the NBBO when executing your exchange-listed security orders. Price improvement is not allowed for exchange-listed securities. NASDAQ Market Center values:</p>

Field Name	Offset	Length	Value / Comments
			<p>T = price/time U = auto-ex I = imbalance only (Opening and Closing Cross) Listed values: T = price/time S = sweep space = omitted</p>
AIQ Indicator	82	1	<p>This value is used to specify whether internalization is allowed on this order. The default is "N" for both quoting and non-quoting participants.</p> <p>Y = never allow internalization; orders with the same MPID will not match with this order</p> <p>N = internalize first I = do not internalize first, but allow this order to match orders with the same MPID</p>
Order Time In Force	83	3	<p>Defines the life of an order before it is canceled by the system if it is not executed or canceled by the participant.</p> <p>NASDAQ Market Center values:</p> <p>DAY = executable from market open to market close GTC = good till cancel, executable from market open to market close IOC = immediate or cancel, executable from market open to market close OC = on close, executable only during the closing cross IOX = immediate or cancel, executable from pre-open to market close X = executable from market open to market close OO = on open, executable only during the opening cross GTX = similar to GTC but executable and displayable outside market hours.</p> <p>Listed Values: DAY = expires at market close GTC = good till cancel IOC = immediate or cancel X = cancel at 6:30 (session close)</p>

Field Name	Offset	Length	Value / Comments
			GTX = good till cancel, and that cancel will occur at 6:30 (session close) IOX = immediate or cancel at 6:30 (session close)
Order Give Up	86	4	Allows MP to indicate another MP who will execute the order. all spaces = omitted
User Order ID	90	20	Indicates order ID entered by MP for internal processing. all spaces = omitted
Alternate Clearing Number	110	4	User can indicate an alternate Clearing Number. all spaces = host will use firm profile value.
Order Received Date	114	8	Indicates Order Received entered by MP for internal processing. MMDDYYYY format all spaces = omitted
Order Branch Sequence Number	122	8	Branch ID/Sequence Number Branch sequence numbers that are not 1-4 alphabetic characters followed by 1-4 numeric characters will be rejected. 8 alphas or 8 numbers are not acceptable. all spaces = omitted
Dividend/Split Indicator	130	3	Indicates if size and price should be processed with Corporate Actions. DNR = do not reduce DNI = do not increase YES = apply dividend split updates to the order NO = do not apply dividend split updates to the order.
Order Override Flag	133	1	Allows MP to override Price and Size warnings. Y = yes N = no
Order Attributable Flag	134	1	Causes the user order to display anonymously (under SIZE) if set. P = pre-trade non-attributable N = attributable Y = pre-trade and post-trade non-attributable

Field Name	Offset	Length	Value / Comments
Order Price Improve Flag	135	1	Price improvement indicates separate access fee used by ECNs. Currently, must be set to N.
Order Bunched Flag	136	1	Identifies grouped orders. Y = yes N = no
Order Type	137	1	Signifies type of order. O = Order U = Summary order
Peg Type	138	1	Signifies whether a pegged order is Regular or Reverse. Pegged orders are not allowed for a listed security G = Regular pegged order R = Reverse pegged order N = Non-pegged order.
Peg Offset	139	1	Applicable to Pegged orders and indicates the numerical offset that is applied to the current inside bid/offer to derive the current display price for the order. If the "Peg type" is G, this field should be set to 0. If the "Peg type" is R, this field should be set to 1. Pegged orders are not allowed for a listed security. 0 = regular pegged order 1 = reverse pegged order space = non-pegged order
Peg Cap Price	140	10	Limit price at which the pegging action stops to prevent the pegged order price from running away and executing at an undesirable price. Pegged orders are not allowed for a listed security. 10-character standard price format. All spaces = omitted
Discretionary Flag	150	1	Indicates whether an order is discretionary. Y = discretionary order N = non-discretionary order
Discretionary Range	151	2	Applied to the display price to establish the price range within which the discretionary order may be executed. For Discretionary orders, this is a required field. 01-99 spaces = non-discretionary order

Field Name	Offset	Length	Value / Comments
Complaint Response	153	5	For listed securities only. Allows you to preference an order to an exchange in response to a complaint. In this field, you indicate the complaint ID number for the complaint to which the order is responding. You obtain this ID number from Market Watch. all spaces = omitted
Block Indicator	158	1	Allows user to submit a block order for a listed security. This field is applicable only if it is indicated on an ITS commitment. It will be ignored if the order is preferenced to a NASDAQ Market Center Trading participant or NASDAQ Market Center-only ("SIM"). Y = yes N = no
<i>Standard Trailer</i>	159	1	

Sample Order Entry Response

0052u4838001215140000090600004J04FC000M720041215151255ø<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Result code	Order Reference Number	Accepted Time Stamp	Filler	Standard Trailer
0052	u	4838	00	121514000009	06000	04J04FC000M7	20041215151255	ø	<\n>

4.2.8.2 Response

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	u = unsequenced data packet
Transaction Code	5	4	4838
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, from the request.
Result code	23	5	0x000 x = source code 6 = normal host accept 7 = conditional accept, session level pacing warning 8 = conditional accept, session level pacing implemented
Order Reference Number	28	12	Reference number associated with this order.
Accepted Time Stamp	40	14	Date/Time of Accept. YYYYMMDDHHMMSS.
Filler	54	1	space
Standard Trailer	55	1	

4.2.9 Order Entry 4838 Version 01

This message allows you to enter orders into the NASDAQ market center system for potential delivery and execution. This version is the result of the NASDAQ Routing Phase 2 project.

Sample Order Entry Request

```
0158u483801121514000009#####MSBK#####NB100#####0000790000#####NDAY
#####NO#####NON#####N<\n>
```

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Client Sequence Number	Security Symbol	PooDup Flag	Order Side	Order Quantity
0158	u	4838	01	121514000009	#####	MSBK#####	N	B	100###

Order Price	Preferred MPID	Reserve Size	Refresh Amount Size	Order Capacity	Order Priority	AIQ Indicator	Order Time In Force	Order Give Up	User Order ID	Alternate Clearing Number
0000790000	###	#####	#####	0	0	N	DAY	###	#####	###

Order Received Date	Order Branch Sequence Number	Dividend/Split Indicator	Order Override Flag	Order Attributable Flag	Order Price Improve Flag	Order Bunched Flag	Order Type	Peg Type	Peg Offset	Peg Cap Price	Discretionary Flag	Discretionary Range	Complaint Response	Block Indicator	Filler	Standard Trailer
#####	#####	NO	N	N	N	N	O	N	0	#####	N	0	#####	0	0	<\n>

4.2.9.1 Query

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced u = unsequenced data packet

Field Name	Offset	Length	Value / Comments
Transaction Code	5	4	4838
Version Number	9	2	01
Client Tracking Number	11	12	Alphanumeric. Required to be unique, customer assigned. Echoed back in the 4838 response. Note: If PossDup Flag = Y, this field must equal the Client Tracking Number of the original transaction.
Client Sequence Number	23	8	If packet type = s, next message sequence number on this connection. Else, space-filled.
Security Symbol	31	14	The unique symbol which identifies an issue. Required field. For a listed security, this symbol must be in CMS format. For example: OXY PRB ROY PR SCZ WD SRF CL FLA B
PossDup Flag	45	1	Required for retransmissions. Indicates possible retransmission of message with this Client Tracking Number. Y = possible duplicate N = original transmission
Order Side	46	2	Describes the side of an order. B = buy S = sell SS = sell short SX = sell short exempt
Order Quantity	48	6	Number of shares of original order.
Order Price	54	10	Entered price of an order. MKT = market price, NBBO = pegged orders (not allowed for listed securities), or 10-character standard price format.
Preferred MPID	64	4	Optional field. Allows order to be sent to a specific market, ADF, or market participant. SIZE cannot be used as a market participant. Allowed values are: 1. Market Participant ID 2. NADQ – for a NASDAQ security,

Field Name	Offset	Length	Value / Comments
			<p>indicates a "NASDAQ Market Center Only" option whereby the system will allocate the order against interest by NASDAQ participants only. The order will not be routed to external venues.</p> <p>3. Exchange ID: A or AMEX= American Stock Exchange B or BOSX = Boston Stock Exchange C or CINN= Cincinnati Stock Exchange M or MWSE = Chicago Stock Exchange N or NYSE = New York Stock Exchange P or PACX = ARCA/EX Pacific Stock Exchange W or CBOE = Chicago Board Options Exchange (CBOE) X or PHLX = Philadelphia Stock Exchange</p> <p>Other external destinations: ATTN = Attain INET = Instinet</p> <p>4. SIM = fill-or-return (exchange-listed security only)</p> <p>5. all spaces = omitted. For a NASDAQ security, the system will allocate the order against interest from NASDAQ participants and external venues.</p>
Reserve Size	68	6	Indicates the quantity of the Reserve size. Reserve size must be in shares either in round lot multiples or in mixed lots. all spaces = omitted
Refresh Amount Size	74	6	Indicates the quantity to which Display size will be replenished from Reserve size. Must be in shares, in a round lot multiple. all spaces = omitted
Order Capacity	80	1	Indicates on whose behalf the order was entered. If the host receives a space value, host will use firm profile value. A = agency P = principal R = riskless

Field Name	Offset	Length	Value / Comments
			space = omitted
Order Priority	81	1	<p>Indicates which execution algorithm is to be utilized. If the host receives a space value, host will use firm profile value.</p> <p>The sweep algorithm allows you to trade through the NBBO when executing your exchange-listed security orders.</p> <p>Price improvement is not allowed for exchange-listed securities.</p> <p>NASDAQ Market Center values:</p> <p>T = price/time U = auto-ex I = imbalance only (Opening and Closing Cross) A = Super-Aggressive order H = THRU order</p> <p>Listed values: T = price/time S = sweep space = omitted</p>
AIQ Indicator	82	1	<p>This value is used to specify whether internalization is allowed on this order. The default is "N" for both quoting and non-quoting participants.</p> <p>Y = never allow internalization; orders with the same MPID will not match with this order</p> <p>N = internalize first</p> <p>I = do not internalize first, but allow this order to match orders with the same MPID</p>
Order Time In Force	83	3	<p>Defines the life of an order before it is canceled by the system if it is not executed or canceled by the participant.</p> <p>NASDAQ Market Center values:</p> <p>DAY = executable from market open to market close</p> <p>GTC = good till cancel, executable from market open to market close</p> <p>IOC = immediate or cancel, executable from market open to market close</p> <p>OC = on close, executable only during the closing cross</p> <p>IOX = immediate or cancel, executable</p>

Field Name	Offset	Length	Value / Comments
			<p>from pre-open to market close</p> <p>X = executable from market open to market close</p> <p>OO = on open, executable only during the opening cross</p> <p>GTX = similar to GTC but executable and displayable outside market hours.</p> <p>Listed Values:</p> <p>DAY = expires at market close</p> <p>GTC = good till cancel</p> <p>IOC = immediate or cancel</p> <p>X = cancel at 6:30 (session close)</p> <p>GTX = good till cancel, and that cancel will occur at 6:30 (session close)</p> <p>IOX = immediate or cancel at 6:30 (session close)</p>
Order Give Up	86	4	<p>Allows MP to indicate another MP who will execute the order.</p> <p>all spaces = omitted</p>
User Order ID	90	20	<p>Indicates order ID entered by MP for internal processing.</p> <p>all spaces = omitted</p>
Alternate Clearing Number	110	4	<p>User can indicate an alternate Clearing Number.</p> <p>all spaces = host will use firm profile value.</p>
Order Received Date	114	8	<p>Indicates Order Received entered by MP for internal processing.</p> <p>MMDDYYYY format</p> <p>all spaces = omitted</p>
Order Branch Sequence Number	122	8	<p>Branch ID/Sequence Number</p> <p>Branch sequence numbers that are not 1-4 alphabetic characters followed by 1-4 numeric characters will be rejected. 8 alphas or 8 numbers are not acceptable.</p> <p>all spaces = omitted</p>
Dividend/Split Indicator	130	3	<p>Indicates if size and price should be processed with Corporate Actions.</p> <p>DNR = do not reduce</p> <p>DNI = do not increase</p> <p>YES = apply dividend split updates to the order</p> <p>NO = do not apply dividend split updates to</p>

Field Name	Offset	Length	Value / Comments
			the order.
Order Override Flag	133	1	Allows MP to override Price and Size warnings. Y = yes N = no
Order Attributable Flag	134	1	Causes the user order to display anonymously (under SIZE) if set. P = pre-trade non-attributable N = attributable Y = pre-trade and post-trade non-attributable
Order Price Improve Flag	135	1	Price improvement indicates separate access fee used by ECNs. Currently, must be set to N.
Order Bunched Flag	136	1	Identifies grouped orders. Y = yes N = no
Order Type	137	1	Signifies type of order. O = Order U = Summary order
Peg Type	138	1	Signifies whether a pegged order is Regular or Reverse. Pegged orders are not allowed for a listed security G = Regular pegged order to NASDAQ Inside R = Reverse pegged order to NASDAQ Inside. H = Regular pegged order to NBBO. Q = Reverse pegged order to NBBO. N = Non-pegged order.
Peg Offset	139	2	Applicable to Pegged orders and indicates the numerical offset that is applied to the current inside bid/offer to derive the current display price for the order. Pegged orders are not allowed for a listed security. 0-99 = offset value if a pegged order spaces = non-pegged order
Peg Cap Price	141	10	Limit price at which the pegging action stops to prevent the pegged order price from running away and executing at an undesirable price. Pegged orders are not allowed for a listed security.

Field Name	Offset	Length	Value / Comments
			10-character standard price format. All spaces = omitted
Discretionary Flag	151	1	Indicates whether an order is discretionary. Y = discretionary order N = non-discretionary order
Discretionary Range	152	2	Applied to the display price to establish the price range within which the discretionary order may be executed. For Discretionary orders, this is a required field. 01-99 spaces = non-discretionary order
Complaint Response	154	5	For listed securities only. Allows you to preference an order to an exchange in response to a complaint. In this field, you indicate the complaint ID number for the complaint to which the order is responding. You obtain this ID number from Market Watch. all spaces = omitted
Block Indicator	159	1	Allows user to submit a block order for a listed security. This field is applicable only if it is indicated on an ITS commitment. It will be ignored if the order is preferenced to a NASDAQ Market Center Trading participant or NASDAQ Market Center-only ("SIM"). Y = yes N = no
Filler	160	1	space
<i>Standard Trailer</i>	161	1	

Sample Order Entry Response

0052u4838011215140000090600004J04FC000M720041215151255þ<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Result code	Order Reference Number	Accepted Time Stamp	Filler	Standard Trailer
0052	u	4838	01	121514000009	06000	04J04FC000M7	20041215151255	þ	<\n>

4.2.9.2 Response

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	u = unsequenced data packet
Transaction Code	5	4	4838
Version Number	9	2	01
Client Tracking Number	11	12	Alphanumeric, from the request.
Result code	23	5	0x000 x = source code 6 = normal host accept 7 = conditional accept, session level pacing warning 8 = conditional accept, session level pacing implemented
Order Reference Number	28	12	Reference number associated with this order.
Accepted Time Stamp	40	14	Date/Time of Accept. YYYYMMDDHHMMSS.
Filler	54	1	space
Standard Trailer	55	1	

Field Name	Offset	Length	Value / Comments
Security Symbol	31	14	The unique symbol which identifies an issue.
PossDup Flag	45	1	Required for retransmissions. Indicates possible retransmission of message with this Client Tracking Number. Y = possible duplicate N = original transmission
Order Reference Number	46	12	Order number associated with the order to be modified.
Order Quantity	58	7	Indicates the order quantity. Entered as an optional "+" or "-" followed by from one to six numeric characters. If the "+" or "-" is not entered, the value is interpreted as the replacement order quantity. If the "+" or "-" precedes the number of shares, it represents an increment or decrement to the original value.
Reserve Size	65	7	Indicates the quantity of the Reserve size. Reserve size must be in shares either in round lot multiples or in mixed lots. Entered as an optional "+" or "-" followed by from one to six numeric characters. If the "+" or "-" is not entered, the value is interpreted as the replacement reserve quantity. If the "+" or "-" precedes the number of shares, it represents an increment or decrement to the original value. all spaces = omitted
Refresh Amount Size	72	6	Indicates the quantity to which Display size will be replenished from Reserve size. Must be in shares, in a round lot multiple. all spaces = omitted
Dividend/Split Indicator	78	3	Indicates if size and price should be processed with Corporate Actions. DNR = do not reduce DNI = do not increase YES = apply dividend split updates to the order NO = do not apply dividend split updates to the order

Field Name	Offset	Length	Value / Comments
Order Override Flag	81	1	Allows MP to override Price and Size warnings. Y = yes N = no
Order Price	82	10	Entered price of an order MKT = market price, NBBO = pegged orders (not allowed for exchange-listed securities), or 10 character standard price format
Alternate Clearing Number	92	4	User can indicate an alternate Clearing Number. all spaces = host will use firm profile value
Order Branch Sequence Number	96	8	Branch ID/Sequence Number Branch sequence numbers that are not 1-4 alphabetic characters followed by 1-4 numeric characters will be rejected. 8 alphas or 8 numbers are not acceptable. all spaces = omitted
Filler	104	1	space
<i>Standard Trailer</i>	105	1	

Sample Order Modify Response

0052u4839001215140000100600004J04FC000M720041215151807þ<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Result code	Order Reference Number	Accepted Time Stamp	Filler	Standard Trailer
0052	u	4839	00	121514000010	06000	04J04FC000M7	20041215151807	þ	<\n>

4.2.10.2 Response

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled
Packet Type	4	1	u = unsequenced data packet
Transaction Code	5	4	4839
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, from the request.
Result code	23	5	0x000 x = source code 6 = normal host accept 7 = conditional accept – session level pacing warning 8 = conditional accept – session level pacing implemented
Order Reference Number	28	12	Reference number associated with the modified order.
Accepted Time Stamp	40	14	Date/Time of Accept. YYYYMMDDHHMMSS.
Filler	54	1	space
Standard Trailer	55	1	

4.2.11 Order Mass Cancel 4841 Version 00

This message allows you to perform a mass action cancel of your book resident quotes and orders.

Sample Order Mass Cancel Request

0062u484100121514000018#####MSBK#####OB#####BALLB#####Q##<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Client Sequence Number	Security Symbol	Cancel Order Type	Cancel Quote Type	Give Up MPID	Order Attributable Flag	Order Time In Force	Side
0062	u	4841	00	121514000018	#####	MSBK#####	O	#	###	B	ALL	B

Alternate Clearing Number	Peg Flag	Discretionary Flag	System Application	Order Priority	Filler	Standard Trailer
###	#	#	Q	#	#	<\n>

4.2.11.1 Query

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced u = unsequenced data packet
Transaction Code	5	4	4841
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, required to be unique, customer assigned. Echoed back in the 4841 response.
Client Sequence Number	23	8	If packet type = s, next message sequence number on this connection. Else, space-filled.
Security Symbol	31	14	The unique symbol which identifies an issue (or .ALL for all securities). Required field. For a listed security, this symbol must be in

Field Name	Offset	Length	Value / Comments
			CMS format. For example: OXY PRB ROY PR SCZ WD SRF CL FLA B
Cancel Order Type	45	1	Type of orders to cancel. If this field is space-filled, a Cancel Quote Type must be specified. O = orders S = summary orders B = both space = omitted
Cancel Quote Type	46	1	Type of quotes to cancel. If this field is space-filled, a Cancel Order Type must be specified. Q = quotes S = summary quotes B = both space = omitted
Give Up MPID	47	4	Indicates whether orders should be canceled by Give Up MPID. This field applies to orders only and will be ignored if populated with "Cancel Quote Type". all spaces = omitted
Order Attributable Flag	51	1	Indicates whether attributable and/or non-attributable orders should be cancelled by this transaction. This field applies to orders only and will be ignored if populated with "Cancel Quote Type." A = attributable N = pre-trade and post-trade non-attributable P = pre-trade non-attributable B = all space = omitted
Order Time In Force	52	3	Defines the life of an order before it is canceled by the system if it is not executed or canceled by the participant. This field applies to orders only and will be ignored if populated with "Cancel Quote Type."

Field Name	Offset	Length	Value / Comments
			<p>NASDAQ Market Center values:</p> <p>ALL = cancel all orders regardless of TIF</p> <p>DAY = executable from market open to market close</p> <p>GTC = good till cancel, executable from market open to market close</p> <p>IOC = immediate or cancel, executable from market open to market close</p> <p>OC = on close, executable only during the closing cross</p> <p>IOX = immediate or cancel, executable from pre-open to market close</p> <p>X = executable from market open to market close</p> <p>OO = on open, executable only during the opening cross</p> <p>GTX = similar to GTC but executable and displayable outside market hours.</p> <p>Exchange-Listed Values:</p> <p>ALL = cancel all orders regardless of TIF</p> <p>DAY = expires at market close</p> <p>GTC = good till cancel</p> <p>IOC = immediate or cancel</p> <p>X = cancel at 6:30 (session close)</p> <p>GTX = good till cancel, and that cancel will occur at 6:30 (session close)</p> <p>IOX = immediate or cancel at 6:30 (session close)</p>
Side	55	1	<p>Indicates whether BID quotes/orders, ASK quotes/orders, or both should be cancelled.</p> <p>B = bid</p> <p>A = ask</p> <p>X = both</p>
Alternate Clearing Number	56	4	<p>Indicates whether orders should be canceled by clearing number. This field applies to orders only and will be ignored if populated with "Cancel Quote Type". If the host receives a space value, host will use firm profile value.</p> <p>all spaces = omitted</p>
Peg Flag	60	1	<p>If Peg Flag = Y, TIF field is ignored. This field applies to orders only and will be</p>

Field Name	Offset	Length	Value / Comments
			ignored if populated with "Cancel Quote Type". Pegged orders are not allowed for exchange-listed securities. Y = cancel pegged orders only space = omitted
Discretionary Flag	61	1	If Discretionary Flag = Y, TIF field is ignored. This field applies to orders only and will be ignored if populated with "Cancel Quote Type." Y = cancel discretionary orders only space = omitted
System Application	62	1	Q = NASDAQ Market Center for NMS securities I = NASDAQ Market Center for exchange-listed securities
Order Priority	63	1	Indicates whether orders should be cancelled by execution algorithm. Valid only for NASDAQ Market Center securities. T = price/time U = auto-ex I = imbalance only, for Opening and Closing Cross A = super-aggressive order H = THRU order space = omitted
Filler	64	1	space
<i>Standard Trailer</i>	65	1	

Sample Order Mass Cancel Response

0040u4841001215140000180600020041215161433␣<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Result code	Accepted Time Stamp	Filler	Standard Trailer
0040	u	4841	00	121514000018	06000	20041215161433	␣	<\n>

4.2.11.2 Response

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	u = unsequenced data packet
Transaction Code	5	4	4841
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, from the request.
Result code	23	5	0x000 x = source code 6 = normal host accept 7 = conditional accept – session level pacing warning 8 = conditional accept – session level pacing implemented
Accepted Time Stamp	28	14	Date/Time of Accept. YYYYMMDDHHMMSS.
Filler	42	1	space
Standard Trailer	43	1	

4.2.12 Market Maker Registration 4860 Version 00

This message allows you to register as a market maker for a specified security.

Sample Market Maker Registration Request

```
0052u486000121514000004#####MSON#####U#160000#<\n>
```

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Client Sequence Number	Security Symbol	Market Maker Class	Market Maker Location	Market Maker European Location ID	Market Close Time	Filler	Standard Trailer
0052	u	4860	00	121514000004	#####	MSON#####	U	#	#	160000	#	<\n>

4.2.12.1 Query

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced u = unsequenced data packet
Transaction Code	5	4	4860
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, required to be unique, customer assigned. Echoed back in the 4860 response.
Client Sequence Number	23	8	If packet type = s, next message sequence number on this connection. Else, space-filled.
Security Symbol	31	14	The unique symbol which identifies an issue. Required field. For a listed security, this symbol must be in CMS format. For example: OXY PRB ROY PR SCZ WD SRF CL FLA B
Market Maker Class	45	1	Market Maker classification E = European I = International

Field Name	Offset	Length	Value / Comments
			U = U.S.
Market Maker Location	46	1	Optional value appended to market maker ID. Denotes branch location where a security is traded by market maker. A = Atlanta B = Boston C = Chicago D = Dallas E = Phoenix F = Miami, Miami Beach, Ft. Lauderdale, Boca Raton G = Detroit, Grand Rapids H = Houston I = Raleigh J = northern New Jersey K = Kansas City L = Los Angeles M = Minneapolis N = New York O = Cleveland P = Philadelphia Q = Washington D.C. R = Denver S = San Francisco T = Seattle U = Nashville V = Pittsburgh number = ECN space = no location ID specified
Market Maker European Location ID	47	1	Optional value appended to market maker ID; denotes European branch location where a security is traded by the market maker. I = United Kingdom space = omitted
Market Close Time	48	6	Time that a market maker registers to close the market for a specific security in HHMMSS format.
Filler	54	1	space
<i>Standard Trailer</i>	55	1	

Sample Market Maker Registration Response

0032u48600012151400000406000143052ø<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Result code	NASDAQ Time	Filler	Standard Trailer
0032	u	4860	00	121514000004	06000	143052	ø	<\n>

4.2.12.2 Response

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled
Packet Type	4	1	u = unsequenced data packet
Transaction Code	5	4	4860
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, from the request.
Result code	23	5	0x000 x = source code 6 = normal host accept 7 = conditional accept - session level pacing warning 8 = conditional accept - session level pacing implemented
NASDAQ Time	28	6	Current NASDAQ time in HHMMSS format.
Filler	34	1	space
Standard Trailer	35	1	

4.2.13 Message Gap Detect Reject 9996 Version 00

If you send a transaction with a Client Sequence Number greater than expected, QIX will reject the message and return this control data packet response, used exclusively for gap notification.

Sample Message Gap Detect Reject Message

0084c9996001216090000240000000236001InvalidClientSequenceNumber<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Client Sequence Number	Result code
0084	c	9996	00	121609000024	00000002	36001

Error Message	Filler	Standard Trailer
InvalidClientSequenceNumber<\n>		<\n>

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	c = control data packet
Transaction Code	5	4	9996
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, from the request.
Client Sequence Number	23	8	Number QIX is expecting

Field Name	Offset	Length	Value / Comments
Result code	31	5	xynnn x = severity code 3 = rejected y = source of error 6 = host 7 = session level pacing warning. 8 = session level pacing implemented. nnn = error message code 001 = rejected, Invalid Client Sequence Number
Error Message	36	50	"Invalid Client Sequence Number"
Filler	86	1	Space
<i>Standard Trailer</i>	87	1	

4.2.14 Reset Client Sequence Number 9997 Version 00

This transaction allows you to reset your Client Sequence Number to any valid value.

Sample Reset Client Sequence Number Request

0034c99970012160900002300000001<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	New Sequence Number	Reserved for NASDAQ	Standard Trailer
0034	c	9997	00	121609000023	00000001	 	<\n>

4.2.14.1 Request

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	c = control data packet
Transaction Code	5	4	9997
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric. Required to be unique, customer assigned. Echoed back in the 9997 response.
New Sequence Number	23	8	Set Client Sequence Number to this value. Right justified, zero-filled.
Reserved for NASDAQ	31	6	Spaces
<i>Standard Trailer</i>	37	1	

Sample Reset Client Sequence Number Response

0034c9997001216090000230000000106000ϕ<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	New Sequence Number	Result Code	Filler	Standard Trailer
0034	c	9997	00	121609000023	00000001	06000	ϕ	<\n>

4.2.14.2 Response

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	c = control data packet
Transaction Code	5	4	9997
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, from the request.
New Sequence Number	23	8	From the request
Result code	31	5	xynnn x = severity code 0 = accepted 3 = rejected y = source of error 6 = host 7 = session level pacing warning. 8 = session level pacing implemented. nnn = message code 000 = accepted 001 = rejected, Invalid Sequence Number
Filler	36	1	Space
Standard Trailer	37	1	

Field Name	Offset	Length	Value / Comments
Error Message	28	50	Error message string.
Filler	78	1	Space
<i>Standard Trailer</i>	79	1	

4.3 NASDAQ Market Center Unsolicited Message Formats

In order to receive the NASDAQ Market Center Unsolicited messages (UMs), you must open the socket for UMs with the UM port you were assigned, and register for the UMs you wish to receive using the UM Registration Message 9998.

You must register for UMs the first time you logon for the day. UM registrations are not carried over from the previous day; but, once you register for the day (the current market session), you need not register again during the day if you happen to disconnect and reconnect. However, if you do re-register during the day, all previous registrations will be erased and each new registration will overwrite whatever was previously sent. Therefore, if you wish to register for multiple UMs, you must have all the UM Transaction Codes listed in one 9998 message. Each new 9998 message overwrites all previous 9998 messages.

A list of zero UMs constitutes a complete deregistration.

The UM registration applies to the primary and backup session, if one is configured, regardless of which connection received the request.

If you register for different versions of the same UM, the last version number in the registration list takes precedence.

QIX also supports the delivery of proprietary quote information via the Proprietary Quote UM. These updates exist on their own connection that supports only the Proprietary Quote UM Transaction Code. Attempts to register for any other type of UM will be rejected. Likewise, attempts to register for the Proprietary Quote UM on a non-Proprietary Quote connection will also be rejected.

Because the initial intent of QIX is to reduce latency of delivered orders, it is recommended that if you are not configured to auto-execute, you have a dedicated I/P session for order delivery and a second session to handle all other non-Proprietary Quote UM traffic.

UM messages are sequenced and are sent on a UM connection only.

4.3.1 UM Registration 9998 Version 00

The UM Registration message allows you to register for specific UM message types available on the UM connection. See usage in section 4.3.

Sample UM Registration Request

0076c999800121514000001 06080200 06080300 06080400 06080700 06080800 06081100 <\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Reserved for NASDAQ	List Count	UM Transaction Code	Version Number	Reserved for NASDAQ	UM Transaction Code	Version Number	Reserved for NASDAQ
0076	c	9998	00	121514000001	06080200	06	0802	00	06080300	06	0803	00

UM Transaction Code	Version Number	Reserved for NASDAQ	UM Transaction Code	Version Number	Reserved for NASDAQ	UM Transaction Code	Version Number	Reserved for NASDAQ	UM Transaction Code	Version Number	Reserved for NASDAQ	Standard Trailer
0804	00	06	0807	00	06	0808	00	06	0811	00	06	<\n>

4.3.1.1 Request

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	c = control data packet
Transaction Code	5	4	9998
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric. Required to be unique, customer assigned. Echoed back in the 9998 response.
Reserved for NASDAQ	23	6	space-filled
List Count	29	2	Count of the number of occurrences of the group: UM Transaction Code, Version Number, and Reserved for NASDAQ fields. A count of 0 = complete deregistration.
UM Transaction Code	31	4	ID of the UM Message. 0201 = CAES/ITS Pre Open Message

Field Name	Offset	Length	Value / Comments
			0202 = CAES/ITS Administrative Message 0207 = CAES/ITS Trade Through Message 0802 = Cancel/Reject 0803 = Quote Update 0804 = Zero Exposure 0807 = Order Delivery 0808 = Order Delivery Status 0811 = Execution/Kill 0850 = Proprietary Quote Update
Version Number	35	2	Version number of the UM.
Reserved for NASDAQ	37	2	space-filled
<i>Standard Trailer</i>	n	1	

Sample UM Registration Response

0076c99980012151400000106000006080200000803000008040000080700000808000008110000<\n>

Message Length	Packet Type	Transaction Code	Version Number	Client Tracking Number	Result Code	Reserved for NASDAQ	List Count	UM Transaction Code	Version Number	Registration Status	UM Transaction Code	Version Number	Registration Status
0076	c	9998	00	121514000001	06000	0	06	0802	00	00	0803	00	00

UM Transaction Code	Version Number	Registration Status	UM Transaction Code	Version Number	Registration Status	UM Transaction Code	Version Number	Registration Status	UM Transaction Code	Version Number	Registration Status	Standard Trailer
0804	00	00	0807	00	00	0808	00	00	0811	00	00	<\n>

4.3.1.2 Response

The UM Registration response message is unsequenced and is valid only on a UM connection.

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	c = control data packet
Transaction Code	5	4	9998
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, from the request.
Result code	23	5	x6nnn x = severity code 0 = accepted 3 = rejected nnn = message code 000 = accepted 001 = rejected, Invalid List Count 002 = rejected, Invalid Version Number 007 = rejected, Temporarily Not Available

Field Name	Offset	Length	Value / Comments
Reserved for NASDAQ	28	1	space
List Count	29	2	Count of the number of occurrences of the group: UM Transaction Code, Version Number, and Registration Status fields.
UM Transaction Code	31	4	ID of the UM Message. 0201 = CAES/ITS Pre Open Message 0202 = CAES/ITS Administrative Message 0207 = CAES/ITS Trade Through Message 0802 = Cancel/Reject 0803 = Quote Update 0804 = Zero Exposure 0807 = Order Delivery 0808 = Order Delivery Status 0811 = Execution/Kill 0850 = Proprietary Quote Update
Version Number	35	2	Version Number of the UM.
Registration Status	37	2	00 = accepted 01 = rejected, invalid UM Transaction Code 02 = rejected, invalid UM Version number
<i>Standard Trailer</i>	n	1	

4.3.2 Cancel/Reject 0802 Version 00

The Cancel/Reject Message is transferred from the server to you and contains the details of the order cancel/reject.

Sample Cancel Message

0150s0802000000001MEK006DBNSCL12152004152116SHARES CANCELED:#####
 HERO558004J04FC000M7#####100#####MSBK#####0000800000X<\n>

Message Length	Packet Type	Transaction Code	Version Number	Server Tracking Number	Reserved for NASDAQ	Message Type	Order Entry Date	Time
0150	s	0802	00	00000001MEK0	06DB	NSCL	12152004	152116

Message Text	Branch/Sequence Number	Order Reference Number	Preferred MMID	Buy/Sell Indicator
SHARES CANCELED:#####	HERO5580	04J04FC000M7	#####	B

Quantity	Security ID	Price	Price Suffix	Order Status	Filler	Standard Trailer
100#####	MSBK#####	0000800000	#####	X	#####	<\n>

Sample Reject Message

0150s0802000000002MEK006DBNSRJ#####152912TOOPLATEPTOPCANCEL#####
#####04J04FC000M7#####MSBK#####<\n>

Message Length	Packet Type	Transaction Code	Version Number	Server Tracking Number	Reserved for NASDAQ	Message Type	Order Entry Date	Time
0150	s	0802	00	00000002MEK0	06DB	NSRJ	#####	152912

Message Text	Branch/Sequence Number	Order Reference Number	Preferred MMID	Buy/Sell Indicator
TOOPLATEPTOPCANCEL#####	#####	04J04FC000M7	####	##

Quantity	Security ID	Price	Price Suffix	Order Status	Filler	Standard Trailer
100##	MSBK#####	#####	##	##	##	<\n>

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced data packet
Transaction Code	5	4	0802
Version Number	9	2	00
Server Tracking Number	11	12	Alphanumeric, server-generated. See section 1.3.4 for the composition of the Server Tracking Number.
Reserved for NASDAQ	23	4	

Field Name	Offset	Length	Value / Comments
Message Type	27	4	NSCL = cancel NSRJ = reject
Order Entry Date	31	8	Date order was submitted. MMDDYYYY.
Time	39	6	Time of cancel or reject. HHMMSS.
Message Text	45	48	
Branch/Sequence Number	93	8	
Order Reference Number	101	12	
Preferenced MMID	113	4	
Buy/Sell Indicator	117	2	B = buy S = sell SS = sell short SX = sell short exempt
Quantity	119	6	Quantity of cancellation, rejection, or size decrement.
Security ID	125	14	
Price	139	10	Order price. MKT = order at market price
Price Suffix	149	2	.B = bunched order spaces = no suffix
Order Status	151	1	A = AQR during closing cross B = pending open C = TIF of on close D = in delivery (open) E = fully executed F = re-open G = GTC order after market close I = in queue (open) J = temporary re-open K = early DAY/GTC/IOC L = odd lot N = not available O = open P = pending cancel (open) Q = order with TIF of OO U = outage W = excused withdrawn X = canceled

Field Name	Offset	Length	Value / Comments
			<p>Y = locked/crossed CQS quote Z = purged</p> <p>In Delivery: quantity has been delivered to an ECN. The ECN can execute, partial, or decline the quantity. Quantity not accepted by the ECN will be reintroduced and subject to possible execution with someone else.</p> <p>Pending Cancel: Quantity has been delivered to an ECN. The ECN can execute, partial, or decline the quantity. Quantity not accepted by the ECN will be canceled and is not subject to possible execution with someone else.</p> <p>In Queue: The incoming IOC order was entered during a non-trading period, e.g., before Market Open or during a halt. It is queued until trading resumes, at which time it is subject to execution.</p>
Filler	152	1	space
<i>Standard Trailer</i>	153	1	

Field Name	Offset	Length	Value / Comments
Ask Price	75	10	"NQ" if no quote
Bid Size	85	6	
Ask Size	91	6	
Time	97	6	Time of quote update. HHMMSS.
Order Category	103	1	Indicates how an order was generated. Q = Quote S = Summary Quote O = Order U = Summary Order
Filler	104	1	Space
<i>Standard Trailer</i>	105	1	

4.3.4 Zero Exposure 0804 Version 00

This message is transferred from the server to you and contains the details of the zero exposure warning.

Sample Zero Exposure Message

0070s08040000000002MEK006DBNSZESMSO**XXXXXXXXXX**POSITION**EXHAUSTED**100446<\n>

Message Length	Packet Type	Transaction Code	Version Number	Server Tracking Number	Reserved for NASDAQ	Message Type	Buy/Sell Indicator	Security ID
0070	s	0804	00	00000002MEK0	06DB	NSZE	S	MSO XXXXXXXXXX

Message Text	Time	Filler	Standard Trailer
POSITION EXHAUSTED	100446		<\n>

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced data packet
Transaction Code	5	4	0804
Version Number	9	2	00
Server Tracking Number	11	12	Alphanumeric, server-generated. See section 1.3.4 for the composition of the Server Tracking Number.
Reserved for NASDAQ	23	4	
Message Type	27	4	NSZE
Buy/Sell Indicator	31	1	Indicates the side of the position that has zero exposure. B = buy S = sell
Security ID	32	14	

Field Name	Offset	Length	Value / Comments
Message Text	46	20	
Time	66	6	Time position was exhausted. HHMMSS.
Filler	72	1	Space
<i>Standard Trailer</i>	73	1	

Field Name	Offset	Length	Value / Comments
Server Tracking Number	11	12	Alphanumeric. Server generated. See section 1.3.4 for the composition of the Server Tracking Number.
Reserved for NASDAQ	23	4	
Order side	27	2	B = Buy S = Sell SS = Sell short SX = Sell short exempt
Unexecuted Quantity	29	7	Order or matched quantity from incoming order.
Security ID	36	14	Symbol.
Price	50	10	Order price or matched price on incoming order.
Order Entry Firm	60	4	Incoming firm MPID.
Give-Up Market Participant ID	64	4	GUID indicated on incoming order.
Order Delivery ID	68	12	Delivery Reference Number.
Time	80	6	Order delivery timestamp on incoming order HHMMSS.
Original Quantity	86	7	Original delivered quantity.
Delivery Status	93	1	O = open
Branch-Sequence	94	8	Branch ID/Sequence Number on incoming order.
Liability/Anonymity Indicator	102	1	L = liability and contra are attributable A = liability and contra are non-attributable space = no liability
Delivery timestamp	103	32	Must be returned with the accept, partial, or decline transactions for this order.
Order Type	135	1	Q = Quote S = Summary Quote O = Order U = Summary Order T = Routed Order
Order Reference Number	136	12	Reference number assigned to this order.
User Reference Number	148	20	Optional user-assigned reference number
Filler	168	1	space
Standard Trailer	169	1	

4.3.6 Order Delivery Status 0808 Version 00

The Order Delivery Status Message is transferred from the server to you and contains the status updates of the original delivered order.

Sample Order Delivery Status Message

0062s08080000000017MEK006DBNSSTMSBF00F266000001100D<\n>

Message Length	Packet Type	Transaction Code	Version Number	Server Tracking Number	Reserved for NASDAQ	Message Type	Security ID	Order Delivery ID	Quantity
0062	s	0808	00	00000017MEK0	06DB	NSST	MSBF	00F266000001	100

Delivery Status	Standard Trailer
D	<\n>

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced data packet
Transaction Code	5	4	0808
Version Number	9	2	00
Server Tracking Number	11	12	Alphanumeric, server generated. See section 1.3.4 for the composition of the Server Tracking Number.
Reserved for NASDAQ	23	4	
Message Type	27	4	NSST
Security ID	31	14	Symbol.
Order Delivery ID	45	12	Delivery Reference Number.
Quantity	57	7	Quantity remaining (declined, timed out, or cancelled).

Field Name	Offset	Length	Value / Comments
Delivery Status	64	1	D = Declined T = Timed out X = Pending Cancel to router. Internal use only.
<i>Standard Trailer</i>	65	1	

Field Name	Offset	Length	Value / Comments
Server Tracking Number	11	12	Alphanumeric, server generated. See section 1.3.4 for the composition of the Server Tracking Number.
Reserved for NASDAQ	23	4	
Message Type	27	4	EXEO = execution against my order EXRO = execution against my quote CXEO = kill of execution against order CXRO = kill of execution against quote
Receiving MPID	31	4	
Receiving GUID	35	4	
Order Entry Date	39	8	Date order was submitted. MMDDYYYY.
Branch/Sequence Number	47	8	<u>Order</u> : Branch ID/Sequence Number of receiving MPID's order. <u>Quote</u> : Field is space-filled.
Buy/Sell Indicator	55	3	BOT = buy SLD = sell SSL = sell short SSX = sell short exempt
Executed Quantity	58	6	
Security ID	64	14	
Execution Price	78	10	
Price Suffix	88	2	.B = bunched order spaces = no suffix
Preferred Order Indicator	90	1	p = preferred order space = not preferred
Contra MPID	91	4	If the trade is marked as anonymous, then the MPID will be reported as "SIZE".
Contra GUID	95	4	If the trade is marked as anonymous and there is a Giveup on the contra side, the Giveup ID will be suppressed.
Time	99	6	Time of execution or kill - HHMMSS
Leaves Amount	105	8	Indicates the Leaves Amount that is unfilled from the original order.
Execution Reference Number	113	6	

Field Name	Offset	Length	Value / Comments
Order Reference Number	119	12	If the execution is for an order, this field will contain the 12-character order reference number. Space-filled if not applicable.
Delivery Reference Number	131	12	Space-filled if not applicable.
Capacity of Receiving Firm	143	1	P = principal R = riskless A = agency
Order Category	144	1	Indicates how an order was generated. Q = Quote S = Summary Quote O = Order U = Summary Order
Price Improvement Flag	145	1	e = price improvement exceeded ECN access fee space = price not improved or does not exceed ECN fee
Liquidity Indicator	146	2	RA = routed accessor LP = liquidity provider LA = liquidity accessor CP = closing cross liquidity provider CA = closing cross liquidity accessor OP = opening cross liquidity provider OA = opening cross liquidity accessor spaces
Reserve Leaves	148	8	Reserve leaves amount. spaces = reserve leaves amount is 0
Trade Through	156	1	Identifies when an execution in Exchange-Listed Trading is traded through another market center. Y N Space = not applicable
Commitment Identifier	157	5	For Exchange-Listed Trading. This field is populated when an execution is effected with an ITS participant. spaces = not applicable
Filler	162	1	space
<i>Standard Trailer</i>	163	1	

4.3.8 Proprietary Quote 0850 Version 00

The Proprietary Quote Message is transferred from the server to you and contains the full positional details of the firm's proprietary quote in the indicated security. This message type is sequenced and is only sent on the Proprietary Quote UM connection.

Sample Proprietary Quote Message

```
0088s0850000000026MEK006DBMSBF#####CANT000023310010000000233200200020000000
113553<\n>
```

Message Length	Packet Type	Transaction Code	Version Number	Server Tracking Number	Reserved for NASDAQ	Security ID	MMID	Bid Quote Price	Bid Size	Bid Reserve Size
0088	s	0850	00	00000026MEK0	06DB	MSBF#####	CANT	0000233100	1000	1000

Ask Quote Price	Ask Size	Ask Reserve Size	Update Timestamp	Standard Trailer
0000233200	2000	2000	113553	<\n>

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right justified, zero filled
Packet Type	4	1	s = sequenced data packet
Tran Code	5	4	0850
Version #	9	2	00
Server Tracking #	11	12	The sequence number portion of the Server Tracking # is not applicable - ignore.
Reserved for NASDAQ	23	4	
Security ID	27	14	Symbol
MMID	41	4	Market Participant ID
Bid Quote Price	45	10	
Bid Size	55	4	

Field Name	Offset	Length	Value / Comments
Bid Reserve Size	59	6	
Ask Quote Price	65	10	
Ask Size	75	4	
Ask Reserve Size	79	6	
Update timestamp	85	6	Time of quote update - HHMMSS
<i>Standard Trailer</i>	91	1	

4.4 CAES/ITS Query/Response Message Formats

4.4.1 CAES/ITS Administrative Message 3406 Version 00

A CAES/ITS participant may use this message to forward a free formatted text message to another participant, or enter a complaint directed to an Exchange.

4.4.1.1 Request

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced u = unsequenced data packet
Transaction Code	5	4	3406
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, required to be unique, customer assigned. Echoed back in the 3406 response.
Client Sequence Number	23	8	If packet type = s, next message sequence number on this connection. Else, space-filled.
Message Type	31	1	Type of message 1 = message to another participant 5 = complaint
Security Id	32	14	Stock market or exchange assigned symbol of a specific security. For exchange-listed securities, this symbol must represent a CQS security and must be in CMS format. For example: OXY PRB ROY PR
Complaint Code	46	3	Type of complaint - required for message type 5; otherwise space-filled. BT = block trade through CS = call supervisor EP = print error EQP = equipment problem LM = locked market LS = lock/ship POR = pre open report QE = quote error QX = quote change REC = resend comm.

Field Name	Offset	Length	Value / Comments
			RCC = resend cancel comm. SSA = stock sold ahead TH = trade halt TR = trade resumed TT = trade through WC = why cancel
Destination	49	4	Message destination MMID = market maker id A = American Stock Exchange B = Boston Stock Exchange C = Cincinnati Stock Exchange M = Chicago Stock Exchange N = New York Stock Exchange P = ARCA/EX/Pacific Stock Exchange W = Chicago Board Options Exchange X = Philadelphia Stock Exchange
Line 1	53	40	Free formatted text
Line 2	93	40	Free formatted text
<i>Standard Trailer</i>	133	1	

4.4.1.2 Response

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	u = unsequenced data packet
Transaction Code	5	4	3406
Version Number	9	2	00
Client Tracking Number	11	12	Alphanumeric, from the request.
Result code	23	5	0x000 x = source code 6 = normal host accept 7 = conditional accept – session level pacing warning 8 = conditional accept – session level pacing implemented
Current Date	28	6	YYMMDD
Current Time	34	6	HHMMSS
Filler	40	1	space
<i>Standard Trailer</i>	41	1	

4.5 CAES/ITS Unsolicited Message Formats

4.5.1 CAES/ITS Pre Open Message 0201 Version 00

The CAES/ITS Pre Open Message is transferred from the server to you and contains the pre-opening details of the indicated security. This message type is sequenced and is only sent on a UM connection.

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced data packet
Transaction Code	5	4	0201
Version Number	9	2	00
Server Tracking Number	11	12	Alphanumeric, server generated. See section 1.3.4 for the composition of the Server Tracking Number.
Reserved for NASDAQ	23	4	
Message Type	27	3	POA = Pre open administrative PXL = POA cancel
Security ID	30	14	Stock market or exchange assigned symbol of a specific security.
Low Price	44	10	Low end of price
High Price	54	10	High end of price
Market Center	64	1	Opening market center code A = American Stock Exchange B = Boston Stock Exchange C = Cincinnati Stock Exchange M = Chicago Stock Exchange N = New York Stock Exchange P = ARCA/EX/Pacific Stock Exchange T = NASDAQ W = Chicago Board Options Exchange X = Philadelphia Stock Exchange
SMM/MMID	65	4	Specialist or market participant who sent pre opening
Time	69	6	HHMMSS
Standard Trailer	75	1	

4.5.2 CAES/ITS Administration Message 0202 Version 00

The CAES/ITS Administration Message is transferred from the server to you and contains either a text message or a complaint message from a market participant or exchange concerning the indicated security. This message type is sequenced and is only sent on a UM connection.

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced data packet
Transaction Code	5	4	0202
Version Number	9	2	00
Server Tracking Number	11	12	Alphanumeric, server generated. See section 1.3.4 for the composition of the Server Tracking Number.
Reserved for NASDAQ	23	4	
Message Type	27	3	ADM = administrative CPL = complaint
Security ID	30	14	Stock market or exchange assigned symbol of a specific security.
Originator	44	4	Market participant or exchange code
Time	48	6	Time of origination - HHMMSS
Text	54	80	Free formatted text
Filler	134	1	space
<i>Standard Trailer</i>	135	1	

4.5.3 CAES/ITS Trade Through Message 0207 Version 00

The CAES/ITS Trade Through Message is transferred from the server to you and contains a notification that your Bid/Ask was traded through. This message type is sequenced and is only sent on a UM connection.

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	s = sequenced data packet
Transaction Code	5	4	0207
Version Number	9	2	00
Server Tracking Number	11	12	Alphanumeric, server generated. See section 1.3.4 for the composition of the Server Tracking Number.
Reserved for NASDAQ	23	4	
Message Type	27	3	TTN = trade through notification
Security ID	30	14	Stock market or exchange assigned symbol of a specific security.
Market Center	44	1	Exchange code A = American Stock Exchange B = Boston Stock Exchange C = Cincinnati Stock Exchange M = Chicago Stock Exchange N = New York Stock Exchange P = ARCA/EX/Pacific Stock Exchange T = NASDAQ W = Chicago Board Options Exchange X = Philadelphia Stock Exchange
Time	45	6	HHMMSS
Price	51	10	Execution price
<i>Standard Trailer</i>	61	1	

4.6 Debug Packet

Either side of a QIX connection at anytime can send a Debug Packet. They are intended to provide human readable text that may aid in debugging problems. Inbound Debug Packets to the server will be logged and ignored. No response is sent to you.

QIX will utilize the Debug Packet to alert you of a problem such as a garbled message or unknown message type. The server will respond with an appropriate error message in the Text field prior to disconnecting the socket.

The maximum message length for a Debug Packet (Packet Type, Text, and Trailer) is 240 bytes.

This message type is valid on both connections.

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	+ = debug packet
Text	5	Variable	Free form human readable text.
<i>Standard Trailer</i>	Text Length + 1	1	

4.7 Echo Packet

Anytime after login, either side of a QIX connection can send an Echo Packet. They are intended to confirm that the peer connection is functional. All that is required of a peer upon receipt of the "e" packet is to change the packet type "e" to packet type "E" before echoing the otherwise unchanged packet in its entirety back to the originating peer.

The maximum message length for an Echo Packet (Packet Type, Text, and Trailer) is 240 bytes.

This message type is valid on both connections.

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	e or E = echo packet
Text	5	Variable	Free form human readable text.
<i>Standard Trailer</i>	Text Length + 1	1	

4.8 Heartbeat Packets

The QIX Server Heartbeat Packet contains a timestamp to be used for performance measurement. The server will send the QIX Server Heartbeat Packet to you every five seconds. You are required to echo back the QIX Client Heartbeat Packet. You never initiate the transmission of the QIX Client Heartbeat packet. It is sent only as a result of receiving the QIX Server Heartbeat Packet. This message type is valid on both connections.

4.8.1 QIX Server

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	h
Timestamp	5	32	
<i>Standard Trailer</i>	37	1	

4.8.2 QIX Client

Field Name	Offset	Length	Value / Comments
Message Length	0	4	ASCII, right-justified, zero-filled.
Packet Type	4	1	r
Timestamp	5	32	Must be an echo of the "h" packet timestamp field.
<i>Standard Trailer</i>	37	1	

The server will send the QIX Server Heartbeat Packet to you every five seconds, whether data is queued or not. You can assume that the link is lost if it does not receive anything for 15 seconds.