NASDAQ Options FIX System

October 26th, 2010

Version 4.2

1. Introduction to NASDAQ Options FIX System

Overview

This document defines NASDAQ's implementation of the Financial Information Exchange (FIX) 4.0, 4.1 and 4.2 protocols. NASDAQ's FIX implementation acts like a router, converting incoming FIX messages into OTTO messages and back again.

Users

It is assumed that the user of this manual is familiar with the FIX 4.0, 4.1 and 4.2 protocol standard, (can be found at www.fixprotocol.org).

2. Session Information

The first message should be a logon message. No additional messages should be transmitted until NASDAQ has verified the SenderCompID, and a logon is received from NASDAQ.

Note: NASDAQ does NOT support encryption.

ID Fields

SenderCompID sent	The SenderCompID as assigned by NASDAQ. The maximum size is 4 to 6 characters.
SenderCompID returned	The SenderCompID returned within all messages is NSDQ.
TargetCompID	Your TargetCompID should always be NSDQ.

3. Cancel and Replace – Order Modification

When replacing an order the ClOrdID field must be a unique ID for the newest order in the chain of orders and the OrigClOrdID must contain the ClOrdID of the order you are trying to replace / modify.

When canceling an order the ClOrdID field must be a unique ID for the cancel request and the OrigClOrdID must contain the ClOrdID of the order you are trying to cancel.

Only Price and OrdQty may be changed for limit orders.

Any change will result in your order losing time priority with the exception of a reduction in OrdQty only.

4. FIX Message Types – Supported / Unsupported

FIX Messages - Supported by NASDAQ

Administrative Messages

Standard FIX administrative messages are supported.

Incoming Messages

New Order - Single
Order Cancel Request
Order Cancel/Replace Request (a.k.a. Order Modification Request)

Outgoing Messages

Execution Report
Order Cancel Reject

FIX Messages - Not supported by NASDAQ

Advertisements
Allocation
Allocation ACK
Didn't Know Trade (DK)
Email
Indications of Interest
List Cancel Request
List Execute
List Status
List Status Request
New Order List
News
Quote
Quote Request
Settlement Instructions
Order Status Request

5. Session Protocol Messages

All NASDAQ comments/additions to the FIX specification are listed in BOLD in the "*Comments*" column for each message type.

If a Tag is not explicitly supported by NASDAQ it will be ignored. Your message will not be rejected.

Message Header

Tag	Field Name	Req'd	Comments
8	BeginString	Y	FIX.4.0 or FIX.4.1 or FIX.4.2. Must be the first field in message.
9	BodyLength	Y	Must be second field in the message.
35	MsgType	Y	Must be the third field in the message.
34	MsgSeqNum	Y	
49	SenderCompID	Y	SenderCompID as assigned by NASDAQ . It will always be four to six characters.
56	TargetCompID	Y	"NSDQ"
52	SendingTime	Y	
50	SenderSubID	N	It must be 32 characters or less.
57	TargetSubID	N	Ignored
43	PossDupFlag	N	Always required for retransmitted messages, whether prompted by the sending system or as the result of a resend request.
97	PossResend	N	Required when message may be duplicate of another message sent under a different sequence number.
122	OrigSendingTime	N	Required for message resends. If data is not available set to same value as SendingTime.

Logon Message

Tag	Field Name	Req'd	Comments	
	Standard Header	Y	**MsgType = A**	
98	EncryptMethod	Y	Not supported	
108	HeartBtInt	Y		
141	ResetSeqNumFlag	N	Not supported	
95	RawDataLength	N	Not supported	
96	RawData	N	Not supported	
	Standard Trailer	Y		

6. Application Messages Regarding Orders

All NASDAQ comments/additions to the FIX specification are listed in BOLD in the "*Comments*" column for each message type.

If a Tag is not supported by NASDAQ "Not supported" will appear in the "*Comments*" column. If you send an unsupported tag, the tag and corresponding data will be ignored. Your message will not be rejected.

New Order – Single Message

Broker Dealer's who wish to electronically submit securities orders to NASDAQ for execution use the new order message type.

Orders can be submitted with special handling instructions and execution instructions.

Handling instructions refer to how NASDAQ should handle the order in its trading system. The HandlInst field is required and it should always be set to 1, which indicates Automated execution order, private, no Broker intervention.

ExecBroker should contain explicit directions as to how the order should be routed; if ExecBroker is not specified, the value will be assumed to be NSDQ. The allowable values are SEEK (try available market centers then post to NASDAQ - once on the NASDAQ book, it will not proactively route out again), and NSDQ (just send the order directly to NASDAQ)

New Order messages received with a duplicate ClOrdID will be ignored, regardless if the PossResend flag is set. The New Order Message is described in the following table:

New Order – Single Message			
Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = D
11	ClOrdID	Y	Unique identifier of the order as assigned by institution. Must be 20 characters or less.
21	HandlInst	Y	This is required by FIX. It should always be set to: 1 = Automated execution order, private, no Broker intervention
55	Symbol	Y	1 – 8 character Options Root Symbol. Spaces, periods, commas not allowed. Example: MSQ
54	Side	Y	Side of order. Valid values: 1 = Buy 2 = Sell
38	OrderQty	Y	Required. Acceptable range is 1 to 999999. No commas, decimals or spaces allowed, nor are negative numbers.
40	OrdType	Y	Valid values: 1 = Market 2 = Limit
44	Price	N	Price field is required for Limit Orders. 1-10 character decimal price. "12.34" is the correct presentation of twelve dollars and thirty-four cents
109	ClientID	N	Used for firm identification in third-party transactions. Service bureaus must use this field to specify the firm entering the order. It MUST be a valid NASDAQ assigned MPID. The firm must be an approved NASDAQ member.
76	ExecBroker	N	The destination to send orders to. Currently NSDQ, SEEK, WAIT, SRCH, and directed orders (see list of destinations below). Will default to "NSDQ" if not specified.
1	Account	N	Must be 20 characters or less.
63	SettlmntTyp	N	Not supported.
64	FutSettDate	N	Not supported.
18	ExecInst	N	Can contain multiple instructions, space delimited. f = InterMarket Sweep Order (ISO)
9140	DisplayInst	N	May be used to specify NASDAQ's different display options. Y = Displayed I = Imbalance Only (only applies to closing auction orders)
110	MinQty	N	MinQty is currently supported. However, NASDAQ does not allow orders with a MinQty to remain live on our book. Therefore, you need to specify IOC in the TIF field (tag 59=3).
111	MaxFloor	N	Represents the portion of your order that you wish to have displayed.
59	TimeInForce	N	Specifies how long the order remains in effect. Absence of this field is interpreted as Immediate or Cancel. Valid values: 0 = Market Hours (DAY) 1 = Good Till Cancel (GTC)

			3 = Immediate or Cancel (IOC) 6 = Good Till Time (Expire Time should have the end time)
47	Rule80A/OrderCapacity	N	C = customer order F = firm order M = market maker order P = Professional Customer (to be supported 12/1/2010)
~~58~~	~~Text~~	~~N~~	**This field is no longer supported**
126	ExpireTime	N	The time at which the order should be canceled.
77	OpenClose	Y	O = opening position C = closing position
167	SecurityType	Y	OPT = options
200	MaturityMonthYear	Y	Format: YYYYMM (expiration date)
205	MaturityDay	Y	Format: DD (Expiration date-day of the month). If supplied, this data will be validated.
201	PutOrCall	Y	0 = put 1 = call
202	StrikePrice	Y	Strike Price for option: Valid values: 0 – 999999.99999999
440	ClearingAccount	N	Up to 4-character alphanumeric. If tag is not supplied, spaces will be used. This field is passed through to the OCC sub-account field – at the OCC this field is used to clear the trade to the proper market maker account. The value for this field is sometimes referred to as "Badge #" or "Market Maker ID," and is usually a 3-character alpha-numeric acronym.
439	ClearingFirm	N	CMTA Number (firm that will clear the trade). If tag not supplied, this order will not be a CMTA.
9355	CrossTradeFlag	N	This specifies the cross/auction in which this order goes live. Valid values: C = market closing auction
	Standard Trailer	Y	

Directed Order Destinations	
DIRA	AMEX
DIRB	BOX
DIRC	CBOE
DIRI	ISE
DIRN	ARCA
DIRZ	BATS
DIRX	PHLX
DIRW	C2

Order Cancel Request Message

The Order Cancel Request Message requests the cancellation of all of the remaining quantity of an existing order. The request will only be accepted if the order can successfully be pulled back from

the exchange trading system without executing.

Note that the Order Cancel/Replace Request should be used to partially cancel (reduce) an order.

A cancel request is assigned a ClOrdID and is treated as a separate entity. If rejected, the ClOrdID of the cancel request will be sent in the Cancel Reject message, as well as the ClOrdID of the actual order in the OrigClOrdID field. The ClOrdID assigned to the cancel request must be unique amongst the ClOrdID assigned to regular orders and replacement orders.

The format of the cancel request message is shown in the following table:

Order Cancel Request Message

Tag	Field Name	Req'd	Comments
	Standard Header	**Y**	**MsgType = F**
41	OrigClOrdID	Y	ClOrdID of the previous order (NOT the initial order of the day) when canceling or replacing an order.
11	ClOrdID	Y	Unique ID of cancel request as assigned by the institution. Must be 20 characters or less.
55	Symbol	Y	1 – 8 character Options Root Symbol. Spaces, periods, commas not allowed.
54	Side	Y	Side of order - Valid values: 1 = Buy 2 = Sell
38	OrderQty	Y	NASDAQ does not support CashOrderQty. Therefore, OrderQty is required.
37	OrderID	N	Unique identifier of most recent order as assigned by broker.
109	ClientID	N	Used for firm identification in third-party transactions. Service bureaus must use this field to specify the firm canceling the order. It MUST be a valid FINRA assigned MPID. The firm must be a FINRA registered broker dealer.
200	MaturityMonthYear	Y	Format: YYYYMM (expiration date)
205	MaturityDay	Y	Format: DD (Expiration date-day of the month). If supplied, this data will be validated.
201	PutOrCall	Y	0 = put 1 = call
202	StrikePrice	Y	Strike Price for option: Valid values: 0 – 99999999.9999
	Standard Trailer	**Y**	

Order Cancel/Replace Request
(a.k.a. Order Modification Request)

The Order Modification Request is used to change the parameters of an existing order.

Do not use this message to cancel the remaining quantity of an outstanding order, use the Cancel Request message for this purpose.

The Order Modification request will only be accepted if the order can successfully be pulled back from

the exchange floor without executing. Requests that cannot be processed will be rejected using the Cancel Reject message. The Cancel Reject message will provide the ClOrdID and OrigClOrdID values that were specified on the Order Modification Request message for identification.

Note that while it is necessary for the ClOrdID to change and be unique, the broker's OrderID field does not necessarily have to change as a result of the Order Modification request.

Only price and quantity can be changed via the cancel/replace request message. All other fields should be retransmitted as sent in the original order.

The Order Modification Request Message is described in the following table:

Order Cancel/Replace Request Message			
Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = G
41	OrigClOrdID	Y	ClOrdID of the previous order (NOT the initial order of the day) when canceling or replacing an order.
11	ClOrdID	Y	Unique identifier of replacement order as assigned by institution. Note that this identifier will be used in ClOrdID field of the Cancel Reject Message if the replacement request is rejected. Must be 20 characters or less.
21	HandlInst	Y	This is required by FIX. It should always be set to: 1 = Automated execution order, private, no Broker intervention
55	Symbol	Y	1 – 8 character Options Root Symbol. Spaces, periods, commas not allowed.
54	Side	Y	Side of order - Valid values: 1 = Buy 2 = Sell Must match original side.
38	OrderQty	Y	NASDAQ does not support CashOrderQty. Therefore, OrderQty is required.
40	OrdType	Y	Valid values: 1 = Market 2 = Limit
44	Price	N	Price field is required for Limit Orders.
37	OrderID	N	Unique identifier of most recent order as assigned by broker.
109	ClientID	N	Used for firm identification in third-party transactions. Service bureaus must use this field to specify the firm canceling the order. It MUST be a valid NASDAQ assigned MPID. The firm must be an approved NASDAQ member.
18	ExecInst	N	Can contain multiple instructions, space delimited. f = InterMarket Sweep Order (ISO)
9140	DisplayInst	N	May be used to specify NASDAQ's different display options. Y = Displayed I = Imbalance Only (only applies to closing auction orders)
59	TimeInForce	N	The time in force of the original order caries through to all replacements.
47	Rule80A/OrderCapacity	N	The Rule80A (capacity) of the original order caries through to all replacements.
1	Account	N	Not supported. The account of the original order carries through to all replacements.
110	MinQty	N	Not supported. The MinQty of the original order carries through to all replacements.
111	MaxFloor	N	Not supported. The MaxFloor of the original order carries through to all replacements.
167	SecurityType	Y	OPT = options
200	MaturityMonthYear	Y	Format: YYYYMM (expiration date)
205	MaturityDay	Y	Format: DD (Expiration date-day of the month).

				If supplied, this data will be validated.
201	PutOrCall	Y	0 = put 1 = call	
202	StrikePrice	Y	Strike Price for opttion: Valid values: 0 – 999999.99999999	
	Standard Trailer	Y		

Execution Report

The execution report message is used to:

1. Confirm the receipt of an order
2. Confirm changes to an existing order (i.e. accept cancel and replace requests)
3. Relay order status information
4. Relay fill information on working orders
5. Reject orders
6. Report post-trade fees calculations associated with a trade

Each execution message will contain information that will describe the current state of the order and execution status as understood by NASDAQ. State changes will be sent as separate messages and will not be used to also convey new partial fill details:

Execution Report

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = 8
37	OrderID	Y	OrderID, as assigned by NASDAQ, is required to be unique for each chain of orders.
17	ExecID	Y	Identifier of execution message as assigned by broker (will be 0 (zero) for ExecTransType=3 (Status)). NASDAQ assigns the ExecID based on the OTTO match number of the transaction. If a firm crosses itself on a trade, the buy and sell orders will have the same ExecID.
20	ExecTransType	Y	Identifies transaction type Valid values: 0 = New 1 = Cancel Trade breaks will be sent with an ExecTransType of '1'. NASDAQ does not support trade corrections.
150	ExecType	Y	Describes the type of execution report. Same possible values as OrdStatus.
39	OrdStatus	Y	Describes the current state of a CHAIN of orders, same scope as OrderQty, CumQty, LeavesQty, and AvgPx Valid Values: 0 = New 1 = Partial Fill 2= Filled 4 = Canceled 5 = Replaced 6 = Pending Cancel 8 = Rejected
55	Symbol	Y	1 – 8 character Options Root Symbol. Spaces, periods, commas not allowed.
54	Side	Y	
38	OrderQty	Y	
32	LastShares	Y	Quantity of contracts bought/sold on this (last) fill.
31	LastPx	Y	Price of this (last) fill.
151	LeavesQty	Y	Amount of contracts open for further execution. If the OrdStatus is Canceled, DoneForTheDay, Expired, Calculated, or Rejected (in which case the order is no longer active) then LeavesQty could be 0, otherwise LeavesQty = OrderQty - CumQty.
14	CumQty	Y	Currently executed contracts for chain of orders.
6	AvgPx	Y	Calculated average price of all fills on this order.
19	ExecRefID	N	Required for Cancel and Correct ExecTransType messages
1	Account	N	As specified in the NewOrder
11	ClOrdID	N	As specified in the NewOrder
44	Price	N	As specified in the NewOrder
41	OrigClOrdID	N	ClOrdID of the previous order (NOT the initial order of the day) when canceling or replacing an order.
109	ClientID	N	Used for firm identification in third-party transactions. If a ClientID was specified in the original order

			then it will be returned in all subsequent execution reports.
18	ExecInst	N	Can contain multiple instructions, space delimited. f = InterMarket Sweep Order (ISO)
9140	DisplayInst	N	May be used to specify NASDAQ's different display options. Y = Anonymous-Price to Display I = Imbalance Only (only applies to closing auction orders)
75	TradeDate	N	Used when reporting other than current day trades.
59	TimeInForce	N	Absence of this field indicates Immediate or Cancel order

40	OrdType	N	Valid values:
			  1 = Market
			  2 = Limit

60	TransactTime	N	Time of execution/order creation (expressed in GMT).
47	Rule80A/OrderCapacity	N	Capacity (C, F, M, or P) from original order.
58	Text	N	Free format text string,
9882	LiquidityFlag	N	Will be returned within all execution reports that contain a partial or full fill. See Liquidity Flags Table below for values
77	OpenClose	Y	O = opening position C = closing position
167	SecurityType	Y	OPT = options
200	MaturityMonthYear	Y	Format: YYYYMM (expiration date)
205	MaturityDay	Y	Format: DD (Expiration date-day of the month). If supplied, this data will be validated.
201	PutOrCall	Y	0 = put 1 = call
202	StrikePrice	Y	Strike Price for opttion: Valid values: 0 – 999999.99999999
	Standard Trailer	**Y**	

Liquidity Flags	
Flag	**Value**
A	Added
R	Removed
X	Routed
O	Market Opening Auction (billable)
C	Removed (Market Closing Auction)
L	Added (Market Closing Auction)
E	Executed on AMEX
P	Executed on Arca
B	Executed on BOX
W	Executed on CBOE

S	Executed on ISE
U	Executed on PHLX
Z	Executed on BATS
2	Executed on C2

Order Cancel Reject

The order cancel reject message is issued by NASDAQ upon receipt of a Cancel Request or Cancel/Replace Request Message that cannot be honored.

The format of the Order Cancel Reject Message is as follows

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = 9
37	OrderID	Y	If the cancel reject is for an unknown order this field will contain the text "Unknown". Otherwise, it will contain the OrderID of the last order in the chain of orders.
11	ClOrdID	Y	Unique order id assigned by broker to the cancel request or to the replacement order.
41	OrigClOrdID	Y	ClOrdID that could not be canceled/replaced. ClOrdID of the previous order (NOT the initial order of the day) when canceling or replacing an order.
39	OrdStatus	Y	OrdStatus value after this cancel reject is applied.
109	ClientID	N	Used for firm identification in third-party transactions. For known orders this will contain the ClientID specified in the original order.
102	CxlRejReason	N	Code to identify reason for cancel rejection. Valid values: 0 = Too late to cancel 1 = Unknown order
58	Text	N	See "Rejected Order Reasons" in section 7
	Standard Trailer	Y	

7. Order Reject/Cancel Reasons

The FIX Text field, tag 58, will be returned within all reject and cancel messages and will contain a description of the reject or cancel.

Rejected Order Reasons

Reason	Explanation
C	ROAM is not yet open
I	Invalid side
L	Invalid Firm
Z	Order Size is more then maximum contracts allowed
O	Unknown Error

F	Missing clearing account
E	Invalid execution instruction
B	Missing clearing firm
X	The order does not have a valid price
R	Routing not enabled
G	Specified routing destination is temporarily down
J	Internal NASDAQ error
N	Order attribute specified that the routing destination does not support
D	Bad reserve value
T	Port is in Test Only mode
H	The option is halted
S	Invalid option
Q	Invalid order qty
K	Invalid Min Qty
W	Routing destination is not supported
A	Advanced functionality not supported
U	NASDAQ was asked to reject resent orders and this order was resent
V	Invalid Order Type
-	Invalid option position
+	Invalid Put or Call
?	Invalid security type
=	Invalid strike price

Cancel Order Reason

Reason	Explanation
"U"	User requested cancel. Sent in response to a Cancel Request Message.
"I"	Immediate or Cancel Order.
"T"	Timeout. The Time In Force for this order has expired.
"S"	Supervisory. The order was manually canceled or reduced by a NASDAQ supervisory terminal.

9. Revision History

Revision #	Date	Change
0.82	10/26/10	Added "2" liquidity code Added "DIRW" as a directed order destination
0.81	10/8/10	Revised the golive date for capacity value "P" Added "SRCH" execbroker
0.80	4/21/10	Added Capacity value "P"
0.79	3/15/10	Added TIF value "GTC" Made tag 205 a required field
0.78	3/8/10	Added "DIRZ" as a directed order destination Added "Z" liquidity code Added support for routing orders to PHLX

0.77	8/31/09	Removed "S" display flag for ADOP
		Removed "RCON" execbroker for ADOP
		Removed "D","T" liquidity codes
		Added support for ISO orders
		Added support for directed orders to BOX
0.76	7/21/09	Added "S" display flag for ADOP
		Added "RCON" execbroker for ADOP
		Added "F","D","T" liquidity codes
0.75	3/16/09	Added WAIT execbroker
		Added directed order destinations
		Added "f" execinst value (tag 18) for ISO orders
		Removed "A","N" values from display flag
		Removed tag 58 from order entry
0.74	6/16/08	Added Tag 205 – MaturityDay "DD" in support of Options Symbology Initiative (OSI)
0.73	06/02/08	Addition of new liquidity codes to identify each options exchange
0.72	03/28/08	Clarification of ClearingAccount Field
0.71	12/21/07	Wording change (cross/auction)
0.7	12/12/07	Added opening auction liquidity code
0.6	11/05/07	Removed logon sequence number reset.
		Updated field descriptions
0.5	10/23/07	Added additional reject reasons.
		Revised strike price from 4 to 8 decimal places
		Removed non options-related info.
0.4	7/18/07	Added CrossOrderType field.
		Removed non options-related info.
0.3	4/19/07	Document Creation