

RASHport<sup>SM</sup>  
**Version 1.1**  
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# 1 Overview

The NASDAQ system accepts limit orders from participants and executes matching orders when possible. Non-matching orders may be added to the NASDAQ Limit Order Book or routed out to the street based on the participant's routing strategy.

Routing and Special Handling (RASH<sup>SM</sup>) is a simple proprietary protocol that allows NASDAQ participants to enter orders, cancel existing orders and receive executions. RASH allows participants to use advanced functionality, including discretion, random reserve, pegging and routing. It is intended to allow participants and their software developers to integrate NASDAQ into their proprietary trading systems or build custom front ends.

RASH only provides a method for participants to send orders to NASDAQ and receive updates on those orders entered. For information about all orders entered into and executed on the NASDAQ book, refer to the ITCH<sup>®</sup> protocol (available separately).

RASH is a low-level proprietary protocol for connecting to NASDAQ. It is designed to offer the maximum possible performance at the cost of flexibility and ease of use. For applications that do not require this extreme level of performance, NASDAQ offers other, more standard interfaces, such as FIX, that may be more suitable and easier to develop to.

## 1.1 Architecture

The RASH protocol is composed of messages passed between the RASH machine and the client application. Each message type has a fixed message length. All messages are composed of non-control ASCII bytes.

All messages sent from the RASH host to the client are assumed to be sequenced, and their delivery must be guaranteed by some lower level protocol. The SoupTCP (available separately) is typically used to guarantee the delivery and sequencing of RASH messages sent from the host to the client.

Messages sent from the RASH client to the host are inherently non-guaranteed, even if they are carried by a lower level protocol that guarantees delivery (like TCP/IP sockets). Therefore, all host-bound messages are designed so that they can be benignly re-sent for robust recovery from connection and application failures.

Each physical RASH host port is bound to a NASDAQ assigned logical RASH Account. On a given day, every order entered on RASH is uniquely identified by the combination of the logical RASH Account and the participant-created Token field

## 1.2 Data Types

Numeric fields are a string of ASCII-coded digits, right-justified and zero-filled on the left.

Alpha fields are left-justified and padded on the right with spaces.

Prices are given in decimal format with six whole number places followed by four decimal digits. The whole number portion is padded on the left with zeroes; the decimal portion is padded on the right with zeroes. The decimal point is implied by position; it does not appear inside the price field. The maximum valid price value on the NASDAQ system is \$200,000.00

Timestamp fields are given in milliseconds past midnight, Eastern Time (ET).

### **1.3 Fault Redundancy**

A single RASH account can be bound to two physical RASH machines. These RASH machines then act as mirrors of each other for fault redundancy. In this configuration, both machines are able to accept and cancel orders and any outbound messages would be simultaneously generated by both physical RASH hosts.

### **1.4 Service Bureau Configuration**

A single RASH account can accept orders from one or more firms, allowing a service bureau configuration. The service bureau RASH account must be specifically authorized to enter orders on behalf of each represented participant with a NASDAQ Service Bureau Agreement, available separately. Once an agreement has been submitted, the RASH account set up as the service bureau may enter orders for the represented firm by putting the represented firm's Market Maker Identifier in the Firm field upon order entry.

## **2 Inbound Messages**

Inbound messages are sent from the participant's application to the RASH host. They are not sequenced. All Inbound Messages may be repeated benignly. This gives the client the ability to re-send any Inbound message if it is uncertain whether NASDAQ received it in the case of a connection loss or application error.

The idea of benign inbound message retransmission with end-to-end acknowledgement is fundamental to NASDAQ's fail-over redundancy. Should your connection ever fail, there is no way for you to know if pending messages actually made it over the link before the failure. A robust RASH client can safely re-send any pending messages over a mirrored link without worrying about generating duplicates. This applies to NASDAQ's disaster fail-over capability as well; should NASDAQ ever need to fail-over to the backup site, some messages sent at the moment of failure may be lost. A robust application can simply re-send the pending messages, making the fail-over seamless to the end user.

### **2.1 Enter Order Message**

The Enter Order Message lets you enter a new order into NASDAQ. Each new order must have a Token that is unique to the day and that logical RASH Port account. If you send a valid order, you should receive an Accepted Order Message. If you send an Enter Order Message with a previously used Token, the new order will be ignored. Please note that if you send a poorly formatted order, the port *will* drop you.

In order to send a market order, the Peg Type field must be set to "P". The Price field on this market order can be anything from zero to \$200,000.00. If a price greater than zero is specified, the market order will be capped at the price given. Note that the primary peg works the same way as market — where a price can be given to limit the peg. Beware that a Price field of zero is accepted only on orders that have a Peg Type other than "N". If a zero Price field is received when the Peg Type is "N", the client connection will be dropped.

Random Reserve is a feature for reserve orders that changes the displayed amount of shares every time the displayed shares are depleted. Random Reserve works as a range from the Max Floor. In other words, the maximum amount displayed will be the Max Floor plus the Random Reserve, and the minimum amount displayed will be the Max Floor minus the Random Reserve. Due to this, the amount given in the Random Reserve field must be less than the number in the Max Floor field. (e.g.: On a 5,000 share order with a Max Floor of 300 and a Random Reserve of 200, the order would be displayed at 100, 200, 300, 400 or 500 shares every time it refreshes. The amount displayed is chosen randomly from those choices.)

To use Market Maker peg with the default offset (Market Maker Designated Percentage), registered market makers can specify the following:

- Execbroker = INET or <blank>
- Peg type = Q
- Display = A
- Peg difference = none

To use Market Maker peg with a more aggressive offset, only registered market makers can specify the following:

- Execbroker = INET or <blank>
- Peg type = Q
- Display = A
- Peg difference = (custom offset)

Other participants who submit primary peg orders with offsets will be non-displayed only. Only orders submitted by market makers will be displayed.

<b>Enter Order Message</b>				
<b>Name</b>	<b>Offset</b>	<b>Length</b>	<b>Value</b>	<b>Notes</b>
Type	0	1	"O"	Identifies this message as an Enter Order Message Type
Order Token/Client Order ID	1	14	Alpha-Numeric	Token must be day unique for each Rash Port account
Side	15	1	Alpha	B/S/T/E Buy/Sell/Short/Short Exempt  NOTE: For sell short and sell short exempt, subscriber affirms ability to borrow securities in good deliverable form for delivery within three business days
Shares/OrderQty	16	6	Numeric	Total Number of shares entered. Must be greater than zero
Stock Symbol	22	8	Alpha	Stock Symbol
Price	30	10	Price	6.4 (implied decimal)
Time In Force	40	5	Numeric	The number of seconds that this order should live before being automatically canceled.

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.

				See special values for Time in Force <a href="#">here</a> .
Firm/Client ID	45	4	Alpha	MPID
Display	49	1	Alpha	Y = Anonymous-Price to Comply N = Non-Displayed A = Attributable- Price to Display I = Imbalance Only P = Post-Only W = Mid-Point Peg Post Only L = Post-Only and Attributable – Price to Display M = Mid-Point Peg
MinQty	50	6	Numeric	Minimum Fill Amount Allowed.
Max Floor	56	6	Numeric	Shares to Display. If zero this field will default to the order qty. Use the display field to specify a hidden order.
Peg Type	62	1	Alpha	M – Midpoint N – No Peg P – Market R – Primary Q – Market Maker Peg I – INAV Peg
Peg Difference Sign	63	1	Alpha	+ - If peg type is set to “N”, specify “+”
Peg Difference	64	10	Price	Amount; 6.4 (implied decimal). If peg type is set to “N”, specify “0”
Discretion Price	74	10	Price	Discretion Price for Discretionary Order. If set to “0”, this order does not have discretion.
Discretion Peg Type	84	1	Alpha	M – Midpoint N – No Peg P – Market R – Primary I – INAV Peg
Discretion Peg Difference Sign	85	1	Alpha	+ - If peg type is set to “N”, specify “+”
Discretion Peg Difference	86	10	Price	Amount; 6.4 (implied decimal). If peg type is set to “N”, specify “0”
Capacity/Rule 80A Indicator	96	1	Alpha	Capacity Code
Random Reserve	97	6	Numeric	Shares to do random reserve with

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.

Route Dest/Exec Broker	103	4	Alpha	Target ID: INET, DOTA, DOTD, DOTI, DOTM, TFTY, MOPP, STGY, SCAN, SKIP, SKNY, SAVE, QSAV, QTFY, DOTZ, LIST, SOLV, CART, QSLV, ESCN, QCST, QDRK, MOPB. and "Directed Orders" See Directed Order Destination Code table <a href="#">here</a> ; for more information on routing strategies, click <a href="#">here</a> .
Cust/Terminal ID/Sender SubID	107	32	Alpha-Numeric	Client Initiated; Pass-thru. Must be left-justified.
Customer Type	139	1	Alpha	Indicates if the order is a retail designated order (optional field) "R" = Retail designated order "N" = Not a retail designated order

### 2.1.1 Special Values for Time in Force

Special Values for Time in Force	
Value	Explanation
0	Immediate or cancel (IOC). If no match for the order is available at the moment the order is accepted, any unexecuted shares in the order are immediately canceled. If the order is routable (strategy other than INET), an IOC will result in the order trying to exhaust all potential liquidity at the specified price before returning.
99960	Market Hours Good-Til-Canceled (GTC). Because this order spans days, the token must be unique across all days that it is live.
99961	Market Hours Do-Not-Increment (DNI) Good-Til-Canceled (GTC). Because this order spans days, the token must be unique across all days that it is live.
99962	Market Hours Do-Not-Reduce (DNR) Good-Til-Canceled (GTC). Because this order spans days, the token must be unique across all days that it is live.
99963	Market Hours Do-Not-Increment (DNI) and Do-Not-Reduce (DNR) Good-Til-Canceled (GTC). Because this order spans days, the token must be unique across all days that it is live.
99964	System Hours Good-Til-Canceled (GTC). Because this order spans days, the token must be unique across all days that it is live.
99965	System Hours Do-Not-Increment (DNI) Good-Til-Canceled (GTC). Because this order spans days, the token must be unique across all days that it is live.
99966	System Hours Do-Not-Reduce (DNR) Good-Til-Canceled (GTC). Because this order spans days, the token must be unique across all days that it is live.
99967	System Hours Do-Not-Increment (DNI) and Do-Not-Reduce (DNR) Good-Til-Canceled(GTC). Because this order spans days, the token must be unique across all days that it is live.
99991	On Open, Non-NASDAQ-Listed. Use to send an On-Open order in non-

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.

	NASDAQ-listed securities, when used in conjunction with a "DOT" strategy. To do a limit-on-open, send with a limit price; to do market, send with pegging set to Market.
99992	On-Close, Non-NASDAQ-Listed. Use to send an On-Close order in non-NASDAQ-listed securities when used in conjunction with a "DOT" strategy. To do a limit-on-open, send with a limit price; to do market, send with pegging set to Market.
99994	For some routing strategies, this TIF designates that the order be re-routed every four minutes or so.
99998	Market Day. Indicates that the order should remain live until the market close on the primary market for the security.
99999	NASDAQ Day. Indicates that the order should remain live until the end of the NASDAQ trading day.

### 2.1.2 Directed Order Destination Codes

Directed Order Destination Codes	
Market Center	Destination Code
AMEX	ISAM
ARCA/PCX	ISPA
Nasdaq OMX BX	ISBX
CBOE	ISCB
CHSX	ISCX
CINN/NSX	ISCN
NYSE	ISNY
BATS	ISBZ
BATS Y Exchange	ISBY
EDGA	ISNA
EDGX	ISNX
Nasdaq OMX PSX	ISPX
Lava Flow	ISLF

### 2.2 Enter Order Message with Cross functionality

This new message lets you enter orders into NASDAQ in much the same way as the previous, with a few additional fields. Notably, the Cross Type Flag allows you to specify that an order begins participation in a cross.

Enter Order Message with Cross Functionality				
Name	Offset	Length	Value	Notes
Type	0	1	"Q"	Identifies this message as an Enter Order Message with Cross Type
Order Token/Client Order ID	1	14	Alpha-Numeric	Token must be day unique for each Rash Port account
Side	15	1	Alpha	B/S/T/E Buy/Sell/Short/Short Exempt
Shares/OrderQty	16	6	Numeric	Total Number of shares

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.

				entered. Must be greater than zero
Stock Symbol	22	8	Alpha	Stock Symbol
Price	30	10	Price	6.4 (implied decimal)
Time In Force	40	5	Numeric	The number of seconds that this order should live before being timed automatically canceled. Special values for Time in Force are listed below.
Firm/Client ID	45	4	Alpha	MPID
Display	49	1	Alpha	Y = Anonymous-Price to Comply N = Non-Displayed A = Attributable- Price to Display I = Imbalance Only P = Post-Only W = Mid-Point Peg Post Only L = Post-Only and Attributable – Price to Display O = Retail Order Type 1 T = Retail Order Type 2 Q = Retail Price Improvement Order M = Mid-Point Peg
MinQty	50	6	Numeric	Minimum Fill Amount Allowed.
Max Floor	56	6	Numeric	Shares to Display. If zero this field will default to the order qty. Use the display field to specify a hidden order.
Peg Type	62	1	Alpha	M – Midpoint N – No Peg P – Market R – Primary Q – Market Maker Peg I – INAV Peg
Peg Difference Sign	63	1	Alpha	+ - If peg type is set to “N”, specify “+”
Peg Difference	64	10	Price	Amount; 6.4 (implied decimal). If peg type is set to “N”, specify “0”
Discretion Price	74	10	Price	Discretion Price for Discretionary Order. If set to “0”, then this order does not have discretion.
Discretion Peg Type	84	1	Alpha	M – Midpoint N – No Peg P – Market R – Primary

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.



				I – INAV Peg
Discretion Peg Difference Sign	85	1	Alpha	+ - If peg type is set to "N", specify "+"
Discretion Peg Difference	86	10	Price	Amount; 6.4 (implied decimal). If peg type is set to "N", specify "0"
Capacity/Rule 80A Indicator	96	1	Alpha	Capacity Code
Random Reserve	97	6	Numeric	Shares to do random reserve with
Route Dest/Exec Broker	103	4	Alpha	Target ID: INET, DOTA, DOTD, DOTI, DOTM, TFTY, MOPP, STGY, SCAN, SKIP, SKNY, SAVE, QSAV, QTFY, DOTZ, LIST, SOLV, CART, QSLV, ESCN, QCST, QDRK, MOPB. and "Directed Orders" See Directed Order Destination Code <a href="#">here</a> ; for more information on routing strategies, click <a href="#">here</a> .
Cust/Terminal ID/Sender SubID	107	32	Alpha-Numeric	Client Initiated; Pass-thru. Must be left-justified.
Inter-market sweep eligibility	139	1	Alpha	Y – eligible N – not eligible
Cross type	140	1	Alpha	O – opening cross C – closing cross N – order is immediately live (don't wait for a cross) R – Retail Cross  NOTE: RPI orders can only participate in the Retail Cross.
Customer Type	141	1	Alpha	Indicates if the order is a retail designated order (optional field) "R" = Retail designated order "N" = Not a retail designated order

### 2.3 Cancel Order Message

The Cancel Order Message is used to request that an order be canceled. To cancel the entire balance of an order, you would enter a Cancel Order Message with a Shares field of zero. To cancel down, you would enter a Cancel Order Message with a Shares field of the new intended order size. This means that if you want to cancel 200 shares out of 1,000 share order, you must send a Shares field of 800.

Cancel Order Message				
Name	Offset	Length	Value	Notes
Type	0	1	"X"	Identifies this message as a Cancel Order Message
Order Token/Client Order ID	1	14	Alpha-Numeric	The Order Token as was originally transmitted in an Enter Order Message
Shares	15	6	Numeric	Specify zero to cancel the order.

### 3 Outbound Sequence Messages

Outbound messages are generated by the RASH host port and received by your client application.

#### 3.1 System Event Messages

System Event Messages signal events that affect the entire NASDAQ system

System Event Message				
Name	Offset	Len	Value	Notes
Time Stamp	0	8	Timestamp	See Data Types <a href="#">here</a> .
Message Type	8	1	"S"	System Event Message
Event Code	9	1	Alpha	See Event Codes <a href="#">here</a> .

##### 3.1.1 System Event Codes

System Event Codes	
Code	Explanation
S	Start of Day. This is always the first message each day. It indicates that NASDAQ is open and ready to start accepting orders.
E	End of Day. This indicates that NASDAQ is now closed and will not accept any new orders in this session. There will not be any more executions during this session, however, it is still possible to receive Broken Trade messages and Canceled Order Messages

#### 3.2 Order Messages

Order messages inform you about each event in the lifetime of your orders.

##### 3.2.1 Accepted Order Message

An Accepted Order Message acknowledges the receipt of a valid Enter Order Message. The data fields from the Enter Order Message are echoed back in the Order Accept Message. Please note: The accepted values may differ for the entered values for some fields. You will always receive an Accepted Order Message for an order before you get any Canceled Order Messages or Executed Order Messages for the order.

<b>Accepted Order Message</b>				
<b>Name</b>	<b>Offset</b>	<b>Length</b>	<b>Value</b>	<b>Notes</b>
Time Stamp	0	8	Numeric	
Type	8	1	"A"	Identifies this message as an Order Accepted Message
Order Token/Client Order ID	9	14	Alpha-Numeric	Token must be day unique for each RASH Port account
Side	23	1	Alpha	B/S/T/E Buy/Sell/Short/Short Exempt
Shares/OrderQty	24	6	Numeric	Total Number of shares entered. Must be greater than zero
Stock Symbol	30	8	Alpha	Stock Symbol
Price	38	10	Price	6.4 (implied decimal)
Time In Force	48	5	Numeric	Seconds (OUCH <sup>®</sup> conforming)
Firm/Client ID	53	4	Alpha	MPID
Display	57	1	Alpha	Y = Anonymous-Price to Comply N = Non-Displayed A = Attributable- Price to Display I = Imbalance Only P = Post-Only W = Mid-Point Peg Post Only L = Post-Only and Attributable – Price to Display M = Mid-Point Peg
Order Reference Number	58	9		The day-unique Order Reference Number assigned by NASDAQ OMX PSX to this order.
MinQty	67	6	Numeric	Minimum Fill Amount Allowed
Max Floor	73	6	Numeric	Shares to Display. If zero this field will default to the order qty. Use the display field to specify a hidden order.
Peg Type	79	1	Alpha	M – Midpoint N – No Peg P – Market R – Primary
Peg Difference Sign	80	1	Alpha	+ -
Peg Difference	81	10	Price	Amount; 6.4 (implied decimal)
Discretion Price	91	10	Price	Discretion Price for Discretionary Order
Discretion Peg Type	101	1	Alpha	M – Midpoint

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.

				N – No Peg P – Market R – Primary
Discretion Peg Difference Sign	102	1	Alpha	+ -
Discretion Peg Difference	103	10	Price	Amount; 6.4 (implied decimal)
Capacity/Rule 80A Indicator	113	1	Alpha	Capacity Code
Random Reserve	114	6	Numeric	Shares to do random reserve with
Route Dest/Exec Broker	120	4	Alpha	Target ID: INET, PMOP, PSTG, PSCN, PTFY, PCRT, TFYX, XDRK, XCST, DOTA, DOTD, DOTI, DOTM, and "Directed Orders" See Directed Order Destination Code <a href="#">here</a> .
Cust/Terminal ID/Sender SubID	124	32	Alpha-Numeric	Client Initiated; Pass-thru

### 3.2.2 Accepted Order Message with Cross Functionality

Similar to the regular Accepted Order Message, with the additional information provided upon order entry using the Enter Order Message with Cross Functionality. Please note that the "R" Order Message Type can be used for the entry of all order types, including those in the "A" Order Message Type.

Accepted Order Message with Cross Functionality				
Name	Offset	Length	Value	Notes
Time Stamp	0	8	Numeric	
Type	8	1	"R"	Identifies this message as an Order Accepted Message
Order Token/Client Order ID	9	14	Alpha-Numeric	Token must be day unique for each RASH Port account
Side	23	1	Alpha	B/S/T/E Buy/Sell/Short/Short Exempt
Shares/OrderQty	24	6	Numeric	Total Number of shares entered. Must be greater than zero
Stock Symbol	30	8	Alpha	Stock Symbol
Price	38	10	Price	6.4 (implied decimal)
Time In Force	48	5	Numeric	Seconds (OUCH conforming)
Firm/Client ID	53	4	Alpha	MPID
Display	57	1	Alpha	Y = Anonymous-Price to Comply N = Non-Displayed A = Attributable- Price to

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.

				Display I = Imbalance Only P = Post-Only W = Mid-Point Peg Post Only L = Post-Only and Attributable – Price to Display O = Retail Order Type 1 T = Retail Order Type 2 Q = Retail Price Improvement Order M = Mid-Point Peg
Order Reference Number	58	9		The day-unique Order Reference Number assigned by NASDAQ OMX PSX to this order.
MinQty	67	6	Numeric	Minimum Fill Amount Allowed
Max Floor	73	6	Numeric	Shares to Display. If zero, this field will default to the order qty. Use the display field to specify a hidden order.
Peg Type	79	1	Alpha	M - Midpoint N – No Peg P – Market R – Primary
Peg Difference Sign	80	1	Alpha	+ -
Peg Difference	81	10	Price	Amount; 6.4 (implied decimal)
Discretion Price	91	10	Price	Discretion Price for Discretionary Order
Discretion Peg Type	101	1	Alpha	M – Midpoint N – No Peg P – Market R – Primary
Discretion Peg Difference Sign	102	1	Alpha	+ -
Discretion Peg Difference	103	10	Price	Amount; 6.4 (implied decimal)
Capacity/Rule 80A Indicator	113	1	Alpha	Capacity Code
Random Reserve	114	6	Numeric	Shares to do random reserve with
Route Dest/Exec Broker	120	4	Alpha	Target ID: INET, PMOP, PSTG, PSCN, PTFY, PCRT, TFYX, XCST, XDRK, DOTA, DOTD, DOTI, DOTM, and “Directed Orders”

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.

				See Directed Order Destination Code table <a href="#">here</a> .
Cust/Terminal ID/Sender SubID	124	32	Alpha-Numeric	Client Initiated; Pass-thru
Inter-market sweep eligibility	156	1	Alpha	Y – eligible N – not eligible
Cross type	157	1	Alpha	O – opening cross C – closing cross I – Intraday cross N –immediately live

### 3.2.3 Canceled Order Message

A Canceled Order Message informs you that an order has been reduced or canceled. This could be acknowledging a Cancel Order Request Message or it could be the result of the order timing out or being canceled automatically.

Please note that a Cancel Order Message does not necessarily mean the entire order is canceled; some portion of the order may still be live. Canceled shares will reflect the number of shares that are "out."

Canceled Order Message				
Name	Offset	Length	Value	Notes
Time Stamp	0	8	Numeric	
Type	8	1	"C"	Identifies this message as an Order Canceled Message
Order Token/Client Order ID	9	14	Alpha-Numeric	The Order Token as was originally transmitted in an Enter Order Message
Shares	23	6	Numeric	The number of shares canceled
Reason	29	1	Alpha	The reason the order was reduced or canceled. See Cancel Order Reason <a href="#">here</a> .

#### 3.2.3.1 Cancel Order Reasons

Cancel Order Reasons	
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 an NASDAQ supervisory terminal.
"D"	This order cannot be executed because of a regulatory restriction (e.g.: trade through restrictions).
"Q"	Self Match Prevention. The order was cancelled because it would have executed with an existing order entered by the same MPID.
"K"	This order cannot be executed because of Market Collars

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.

"E"	Closed. Any market hours day order that was received after 4 PM will receive this cancel reason.
"X"	Closing. Any extended hours orders received while the closing process is underway will receive this cancel reason.

### 3.2.3.2 Pre-Trade Risk Management Reasons

Reason	Explanation
a	invalid message format
b	No quote
c	invalid account
d	short sale violation
e	order rejected due to ISO order check
f	order rejected due to GTC order check
g	order rejected due to pre-market order check
h	order rejected due to post-market order check
i	order rejected due to the delayed checking flag turned off
j	Exceeded maximum shares threshold
k	Exceeded maximum value threshold
m	order rejected due to previous command to reject all orders
n	order rejected due to invalid price (fat finger)
o	Order rejected due to symbol not listed on easy to borrow list
p	PRM is Not Available
q	Invalid Message
r	Snap Is In Process
s	Symbol Halted
t	Order Rejected Due To On Open
u	Order Rejected Due To On Close
v	Order Rejected Due To Program Trading
{	Order rejected due to symbol not listed on restricted list

### 3.2.4 Rejected Order Message

A Rejected Order Message may be sent in response to an Enter Order Message if the order cannot be accepted at this time. The reason for the rejection is given. No further actions are permitted on this order.

The Token of a rejected order cannot be re-used.

Rejected Order Message				
Name	Offset	Length	Value	Notes
Time Stamp	0	8	Numeric	
Type	8	1	"J"	Identifies this message as an Order Rejected Message
Order Token/Client Order ID	9	14	Alpha-Numeric	The Order Token as was originally transmitted in an Enter Order Message
Reason	23	1	Alpha	See Reject Reason Below

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.

### 3.2.4.1 Rejected Order Reasons

Rejected Order Reasons	
<i>Reason</i>	<i>Explanation</i>
"Y"	No Shares Found for Routing
"C"	NASDAQ OMX PSX is Closed
"I"	Invalid Order Side
"E"	Invalid Peg
"L"	Invalid Firm
"Z"	Quantity Exceeds Threshold
"O"	Other. A reason not contemplated in this version of RASH.
"B"	Quote not available for pegged order.
"P"	Pegging Not Allowed
"X"	Invalid Price
"G"	Destination Not Available
"J"	Processing Error
"N"	Invalid Routing Instructions
"D"	Invalid Display value
"M"	Outside of Permitted Times for Clearing Destination
"H"	Security is Halted
"S"	Invalid Symbol
"Q"	Invalid Order Quantity
"K"	Invalid Minimum Quantity
"W"	Invalid Destination
"A"	Advance Features Not Allowed
"U"	Possible Duplicate Order
"V"	Invalid Order Type
"T"	Test Mode
"R"	Routing Not Allowed
"F"	Order not marketable Conflicting instructions Improper cross type

### 3.2.5 Executed Order Message

An Executed Order Message informs you that all or part of an order has been executed.

Executed Order Message				
<i>Name</i>	<i>Offset</i>	<i>Length</i>	<i>Value</i>	<i>Notes</i>
Time Stamp	0	8	Numeric	
Type	8	1	"E"	Identifies this message as an Order Executed Message
Order Token/Client Order ID	9	14	Alpha-Numeric	The Order Token as was originally transmitted in an Enter Order Message
Shares	23	6	Numeric	The number of shares executed

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.



Price	29	10	Numeric	The price at which the execution occurred
Liquidity	39	1	Alpha	See Liquidity Flag table <a href="#">here</a> .
Match number	40	9	Numeric	Assigned by NASDAQ OMX PSX to each match executed. Each match consists of one buy and one sell. The Matching buy and sell executions share the same match number.

### 3.2.5.1 Liquidity Flags

Liquidity Flags	
Flag	Value
A	Added
R	Removed
J	Non-displayed and added liquidity
X	Routed
D	DOT
F	Opening Trade (on NYSE)
G	On-Close order (on NYSE)
O	Opening Cross
M	Opening Cross (imbalance-only)
C	Closing Cross
L	Closing Cross (imbalance-only)
H	Halt/IPO Cross
K	Halt Cross
Y	Re-Routed by NYSE
S	Odd Lot Execution (on NYSE)
U	Added Liquidity (on NYSE)
B	Routed to BX
E	NYSE Other
P	Routed to PSX
T	Opening Trade (on ARCA)
Z	On-Close order (on ARCA)
W	Added post-only
m	Removed liquidity at a midpoint
k	Added liquidity via a midpoint order
0	Supplemental order execution
7	Displayed, liquidity-adding order improves the NBBO
8	Displayed, liquidity-adding order sets the QBBO while joining the NBBO
d	Retail designated execution that removed liquidity
e	Retail designated execution that added displayed liquidity
f	Retail designated execution that added non-displayed liquidity
j	RPI (Retail Price Improving) order provides liquidity
r	Retail Order removes RPI liquidity
t	Retail Order removes price improving non-displayed liquidity other than

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.

	RPI liquidity
4	Added displayed liquidity in a Select Symbol
5	Added non-displayed liquidity in a Select Symbol
6	Removed liquidity in a Select Symbol
g	Added non-displayed mid-point liquidity in a Select Symbol

### 3.2.6 Broken Trade Message

A Broken Trade Message informs you that an execution has been broken. The trade is no longer good and will not clear. The reason for the break is given.

You will always get an Executed Order Message prior to getting a Broken Trade Message for a given order/execution.

Broken Trade Message				
Name	Offset	Length	Value	Notes
Time Stamp	0	8	Numeric	Timestamp
Message Type	8	1	"B"	Broken Trade Message
Order Token	9	14	Alpha-Numeric	The order Token field as entered.
Match Number	23	9	Numeric	Match Number as transmitted in the preceding Executed Order Message
Reason	32	1	Alpha	The reason the trade broken. See Broken Trade Reasons table <a href="#">here</a> .

#### 3.2.6.1 Broken Trade Reason

Broken Trade Reason	
Reason	Explanation
"E"	Erroneous. The trade was deemed clearly erroneous
"C"	Consent. The two parties mutually agreed to break the trade
"S"	Supervisory. The trade was manually broken by a NASDAQ supervisory terminal.
"X"	External. The trade was broken by an external third party.

### 3.2.7 Executed with Reference Price Message

An Executed Order Message informs you that all or part of an order has been executed.

Executed with Reference Price Message				
Name	Offset	Len	Value	Notes
Timestamp	0	8	Numeric	
Message Type	8	1	"G"	Identifies this message as an Order Executed with Reference Price Message
Order Token/Client Order ID	9	14	Order Token/Client Order ID	The Order Token of the executing order
Shares	23	6	Shares	Incremental number of shares executed
Price	29	10	Price	The price at which these shares

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.

				were executed
Liquidity	39	1	Liquidity	See Liquidity Flag Values table below.
Match number	40	9	Match number	Assigned by NASDAQ to each match executed. Each match consists of one buy and one sell. The matching buy and sell executions share the same match number.
Reference Price	49	10	Price	The reference price associated with the execution
Reference Price Type	59	1	Alpha	Only value currently supported is:  I = Intraday Indicative Value

### 3.2.8 Trade Correction Message

An Executed Restatement Message informs you that there has been a change to an execution.

Trade Correction Message				
Name	Offset	Len	Value	Notes
Timestamp	1	8	Numeric	
Message Type	0	1	"F"	Identifies this message as a Trade Correction Message
Order Token/Client Order ID	9	14	Order Token/Client Order ID	The Order Token of the executing order
Shares	23	6	Shares	Incremental number of shares executed
Price	29	10	Price	The price at which these shares were executed
Liquidity	39	1	Liquidity	See Liquidity Flag Values table below.
Match number	40	9	Match number	Assigned by NASDAQ to each match executed. Each match consists of one buy and one sell. The matching buy and sell executions share the same match number.
Reason	49	1	Alpha	Only value currently allowed is: N = Adjusted to NAV

## 4 Support

If you have any more questions or comments about this specification, please email [tradingservices@nasdaqomx.com](mailto:tradingservices@nasdaqomx.com). We also welcome any suggestions for new features.

## 5 Revision History

Version	Date	Notes
1.0	12/10/2004	Completed initial document

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.

1.0	3/11/2005	Added liquidity flags for routing
1.0	5/10/2005	Added order reference number field
1.0	7/18/2005	Changed definition in Discretion Price field
1.0	10/26/2005	Updated to include information about on open and on close orders
1.0	10/27/2005	Added info about pegs and prices, random reserve and cancel down
1.0	11/1/2005	Clarified information about prices and peg types; added section which shows how to send some sample orders
1.0	1/17/2006	Removed Mid Peg information
1.0	4/25/2006	Added Attribution
1.0.6	6/5/2006	Added cross enter order message and response, GTC TIFs and imbalance-only Added liquidity flag "C" for Cross execution—non-billable Added liquidity flag "B" for Cross execution—billable Replaced references to INET with "NASDAQ" or "the system" Replaced references to subscribers with "participants" Changed "Market Day" to "Market Hours" Changed "INET Day" to "System Hours"
1.0.6	01/10/2007	Display field: Updated values and added value "C" Added value "M" for Peg Type and Discretion Peg Type fields. Updated Liquidity Flag Table
1.0.6	02/06/2007	Added routing strategy/Route Dest/Exec Broker "SWIM"
1.0.6	02/22/2007	Added Directed Destination Routing Code table
1.0.6	05/01/2007	Added liquidity flag "Y" = Re-Routed by NYSE
1.0.6	06/14/2007	Added routing strategy/Route Dest/Exec Broker "MOPP" Removed routing strategy/Route Dest/Exec Broker "SWIM"
1.0.7	07/25/2007	Added routing strategy/Route Dest/Exec Broker "DOTD" Added routing strategy/Route Dest/Exec Broker "DOTI" Removed routing strategy/Route Dest/Exec Broker "DOTP"
1.0.8	10/05/2007	Order Message Side "E" specifies Short Sell
1.0.9	01/02/2008	Added liquidity flag "F" Added liquidity flag "G"
1.1	01/15/2008	Removed DOTN and DOTO routing strategies.
1.1.1	03/26/2008	Added routing strategy/Route Dest/Exec Broker "SKIP" Added routing strategy/Route Dest/Exec Broker "SKNY" Added Pre-trade Risk Management reject codes Removed display value "C" Changed contact email for support
1.1.2	05/12/2008	Added Liquidity Flag "J"
1.1.3	07/29/2008	Removed PHLX and ISPX as a market center and destination code for Directed Orders.
1.1.4	08/26/2008	Added directed order destination code value "ISBZ" for BATS
1.1.4	12/22/2008	Corrected offset with accepted order with cross message
1.1.5	02/12/2009	Modified liquidity flag "G" Added liquidity flag "S"
1.1.6	02/20/2009	Modified liquidity flag "F" Added liquidity flag "U"
1.1.7	03/25/2009	Added liquidity flag "B" Added Cancel order reason field to cancel order message

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.

		Added Cancel order reason codes
1.1.8	04/14/2009	Added routing strategy/Route Dest/Exec Broker "TFTY"
1.1.9	05/06/2009	Added display flag "S" Added routing strategy/Route Dest/Exec Broker "SCNF" Added routing strategy/Route Dest/Exec Broker "SGNF" Revised description for liquidity flag "J"
1.1	06/05/2009	Revised description for cancelled order reason "T" for anti-internalization
1.1	06/24/2009	Revised description for cancelled order reason "I" for anti-internalization Revised description for cancelled order reason "T" for removing anti-internalization
1.1	07/01/2009	Revised description for cancelled order reason "I" for removing anti-internalization Added cancelled order reason "Q" for anti-internalization
1.1	08/10/2009	Removed Flash order references, including SCNF and SGNF routing strategies Added liquidity flag "E" for NYSE Other
1.1	12/10/2009	Added routing strategy/Route Dest/Exec Broker "SAVE" Added routing strategy/Route Dest/Exec Broker "QSAV" Added routing strategy/Route Dest/Exec Broker "QTFY" Revised PRM Reject code "#" Revised anti-internalization language, replaced with self match prevention
1.1	01/25/2010	Revised the length of the symbol field from 6 to 8 characters.
1.1	03/03/2010	Added routing strategy/Route Dest/Exec Broker "DOTZ"
1.1	06/16/2010	Added directed order destination code value "ISNA" Added directed order destination code value "ISNX" Added directed order destination code value "ISPX"
1.1	08/12/2010	Order Message Side "E" specifies Short Sell Removed directed order destination code value "ISGA" Removed directed order destination code value "ISGX"
1.1	08/26/2010	Added directed order destination code value "ISBY"
1.1	09/23/2010	Added liquidity flag "P"
1.1	01/10/2011	Added routing strategy/Route Dest/Exec Broker "LIST" Added liquidity flag "T", "Z"
1.1	02/22/2011	Added routing strategy/Route Dest/Exec Broker "SOLV" Added routing strategy/Route Dest/Exec Broker "CART" Added routing strategy/Route Dest/Exec Broker "QSLV"
1.1	04/04/2011	Added cancelled order reason "K" for market collars
1.1	06/07/2011	Updated PRM reject reasons
1.1	07/07/2011	Removed inactive directed order destinations: ISDA, ISIS, ISLF, ISTR
1.1	10/04/2011	Added Post only display values "P", "W", "L" Removed IOC requirement for minimum quantity orders
1.1	03/19/2012	Added routing strategy/Route Dest/Exec Broker "TWAP" Added routing strategy/Route Dest/Exec Broker "VWAP" Added routing strategy/Route Dest/Exec Broker "PV15" Added routing strategy/Route Dest/Exec Broker "PV20" Added routing strategy/Route Dest/Exec Broker "PV25" Added routing strategy/Route Dest/Exec Broker "PV33"
1.1	04/19/2012	Added liquidity flag values "k", "m"

Functionality that is not available will be greyed out in the specifications. Any changes will be conveyed via the NASDAQ OMX Head Trader Alerts or Technical Updates.

1.1	06/19/2012	Added Peg Type value "Q"
1.1	10/02/2012	Added Peg Type value "I" Added Discretionary Peg Type value "I"
1.1	10/17/2012	Added routing strategy/Route Dest/Exec Broker "ESCN" Greyed out benchmark routing strategy and added footer to denote functionality not available
1.1	10/23/2012	Added liquidity flag values "7", "8"
1.1	01/10/2013	Added Customer type field to the enter order message Added Customer type field to the accepted order message Added Customer type field to the enter order with cross message Added Customer type field to the accepted order with cross message Added liquidity flag values "d", "e", "f"
1.1	01/28/2013	Added liquidity flags "6"
1.1	02/05/2013	Added Display values "O", "T", "Q" Added Cross type value "R" Added liquidity flag values "j", "r", "t"
1.1	02/25/2013	Greyed out liquidity flag values "d", "f"
1.1	03/01/2013	Changed the peg type for market maker peg with aggressive offset to "Q"
1.1	03/07/2013	Removed benchmark order routing strategies
1.1	03/18/2013	Added routing strategy/Route Dest/Exec Broker "QCST", "QDRK" Replaced routing strategy/Route Dest/Exec Broker "INET" with "QNET"
1.1	03/27/2013	Replaced routing strategy/Route Dest/Exec Broker "QNET" with "INET" Removed Cross type value "R"
1.1	04/25/2013	Added routing strategy/Route Dest/Exec Broker "MOPB" Added cancel reason code "q"
1.1	05/02/2013	Added display value "M"
1.1	06/20/2013	Added Cross type value "R" Removed Cross type value "H"
1.1	08/26/2013	Added blurb about short sale affirmation
1.1	02/06/2014	Added directed order destination "ISLF"
1.1	06/09/2014	Updated the formatting of the document to make more standardized across all specs
1.1	06/26/2014	Added table of contents Added Broken Trade Reason Removed Samples of how to build messages Added Liquidity flags "m", "k", "7", "8", "d", "e", "f", "j", "r", "t", "6" Added display values "L", "M" to section 2.1 Added display values "L", "M", "O", "T", "Q" to section 2.2 Removed Liquidity Flag V
1.1	01/15/2015	Added Liquidity flag values "0", "4", "5", "g" Modified the definitions of liquidity flag values "M", "L", "K"
1.1	03/23/2015	Added cancel reasons "E", "X"
ETMF	03/05/2015	Draft version of ETMF specifications Added Executed with reference price message type Added Trade Correction message type

