DROP
Version 1.00
Updated January 13th, 2015

1 Overview

NASDAQ accepts limit orders from subscribers and executes matching orders when possible. Non-matching orders may be added to the NASDAQ Book, a database of available limit orders, where they wait to be matched in price-time priority.

DROP is a protocol that delivers real-time information about activity that takes place on the NASDAQ.

Each DROP account is configured to transmit information concerning orders entered by one or more NASDAQ subscriber firms. DROP is typically used by clearing firms to track the activity of their correspondents, or by larger firms to monitor the activity of multiple NASDAQ access points for risk management purposes.

Each DROP host can be configured to send a message anytime an order is entered, canceled, executed, or broken – or any combination of these events.

DROP does not provide the ability to enter orders into NASDAQ.

1.1 Architecture

DROP is a very simple protocol that is based on CR/LF terminated lines.

To begin a session, the client connects to the specified host and port using a standard TCP/IP socket.

Once the socket connection has been established, the client sends the assigned password followed by a CR/LF or just an LF.

The host authenticates the password, begins sending the execution information to the client as a series of fixed length, comma delimited lines. Each line represents a single execution and is terminated with an ASCII CR/LF pair.

The host will send all previously executed trades as quickly as possible, and once it has sent all pending trades the connection will remain open but idle until the next trade occurs. As soon as a new trade occurs, it is sent as quickly as possible. If the client is not able to read trades as quickly as they occur, they are automatically queued and delivered in sequence as quickly as possible.

The end of the trading day is marked by the transmission of an empty line consisting of just a CR/LF pair.

If the client wishes to log out at any time, it sends an empty line consisting of a CR/LF pair

or just an LF. The host will then close the TCP/IP socket and begin waiting for a new connection.

The protocol was designed to be simple enough that it could easily be used manually with a standard Telnet client. Using a Telnet client, a user could log into a DROP port, download trade information, log out, and then directly import the downloaded trades into a spreadsheet or database application.

1.2 Recovering From Broken Connections

In the case where a client loses the connection to the DROP host and wishes to reconnect without having to re-read though all the messages it has already received, there is an optional line number parameter that can be added to the end of the password line when logging in. The format of this login line is…
password[,line number] where “password” is the assigned client password and line number is the optional line number the client would like the host to begin transmission with. The login line is always terminated with a CR/LF pair or just an LF. If the optional line number is not specified, the DROP host always begins transmission with the first trade for the current day (line #1). By counting incoming lines, the client can re-connect and request the precise next expected line number and prevent any redundant transmission of trade data.

1.3 Data Types

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

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

Prices are given in decimal format with 9 whole number places followed by a decimal point and 10 decimal digits. The whole number portion is padded on the left with spaces; the decimal portion is padded on the right with zeros.

Timestamps are numeric given in seconds past midnight Eastern Time.

1.4 Fault Redundancy

Multiple DROP hosts can be configured to send trade information on an identical set of executing firms, making it possible to create mirrored DROP hosts for purposes of fault redundancy.

For maximum redundancy, the mirrored machines should be located at geographically diverse data centers with communications carrier access diversity. The two lines could also terminate at different subscriber locations on distinct computing platforms.

1.5 Service Bureau Configuration

A single DROP host can deliver trade information for one or more firms, allowing a service bureau configuration. In this case, the DROP account must be authorized by each desired firm using a DROP Port Authorization Form.

1.6 Trade Message Line Format

Once logged in, the client will receive a series of Trade Message Lines from the host in real

time. Each Trade Message Line is fixed format, comma delimited, and CR/LF terminated ASCII text.

Name	Offset	Len	Type	Sample	Notes
Time Stamp	0	9	Timestamp	34293.104	The exact time the trade occurred on NASDAQ accurate to the nearest millisecond.
Type	10	1	Alphanum	E	"A"=New order accepted, "E"=Existing order executed, "X"-Existing order canceled, "B"-Previous execution broken.
Source	11	6	Alphanum	ABCD01	The source of the order. Typically the account of the OUCH port used to enter the order, but can also have the special values “$PHON ” for orders received via NASDAQ's phone desk.
User	18	4	Alphanum	(arbitrary)	The free form User field as specified by the order entry firm when the order was entered into NASDAQ.
Token	23	10	Alphanum	(arbitrary)	The free form Token field as specified by the order entry firm when the order was entered into NASDAQ.
Buy/Sell	34	1	Alpha	B	The side of the trade executed. B=Bought, S=Sold, T=Sold Short, E=Sold Short
Shares	36	9	Numeric	10000	The incremental number of shares executed in this trade. Note that a single order can result in multiple executions. (In the case of a broken trade, the shares with be negative.)
Stock	46	6	Alpha	INTC	The stock symbol
Price	53	20	Numeric with 10 decimal places	12.8750000000	The execution price of the trade.
Firm	74	4	Alpha	BIGJ	The identifier of firm who entered the order.
Reference	79	9	Numeric	836455	The order unique

					reference number assigned by NASDAQ to this order.
Match/ Time in Force	89	9	Numeric	122853	For executions and breaks, The match number assigned by NASDAQ to this trade. Each match consists of an execution between a buy order and a sell order. For other messages, this field will represent Time in Force (TIF).
Capacity	99	1	Alpha	A	The capacity as specified by the order entry firm. A=Agency, P=Principal, R=Riskless
Liquidity Code / Cancel Reason	101	1	Alpha	R	For execution messages, this field will represent the liquidity code value: A=Added R=Removed 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 J = Non-displayed adding liquidity 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 (not currently available) m = Removed liquidity at

					a midpoint k = Added liquidity via a midpoint order0 = 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 (not currently available) e = Retail designated execution that added displayed liquidity f = Retail designated execution that added non-displayed liquidity (not currently available) j = RPI order that provides liquidity r = Retail order that removes RPI liquidity t = Retail order that removes price improving non-displayed liquidity other than RPI liquidity 4 = Added displayed liquidity in a Select Symbol 5 = Added non-displayed liquidity in a Select Symbol 6 = Liquidity Removing Order in a Select Symbol g = Added non-displayed midpoint liquidity in a Select Symbol For cancel messages, this field will represent the cancel reason value: U = User cancel I = IOC cancel T = Timeout S = Supervisory cancel D = Regulatory cancel Q = Self Match Prevention

					Z = System cancel C = Cross cancel
Clearing Code	103	1	Alpha	A	The clearing path this trade will take. Q=QSR

2 Support

If you have any questions or comment about this specification, just E-mail to tradingservices@nasdaqomx.com. We also welcome any suggestions for new features or improvements.

3 Revision History

Revision #	Date	Change
1.0	1/26/2000	Initial dissemination to a select few developers.
1.0	5/8/2000	Published in draft form
1.0	7/24/2006	Changed “Billing Code” to “Liquidity Code” Revised list of Liquidity Codes
1.0	10/10/2007	Revised buy/sell field for short sell exempt changes
1.0	01/02/2008	Added Liquidity flag values “F” and “G” Added Liquidity flag value “J”
1.0	01/02/2008	Added Liquidity flag values (all values after “J” in the specs) Added TIF to the MatchID field for new order, replaced order, and cancelled order messages
1.0	01/02/2008	Added Liquidity flag values “k”, “m”, “0”
1.0	07/18/2012	Added cancel reason to the liquidity code field for cancelled order messages
1.0	07/18/2012	Added Liquidity flag values “7”, “8”
1.0	01/10/2013	Added Liquidity flag values “d”, “e”, “f”
1.0	01/10/2013	Added Liquidity flag values “6”
1.0	06/10/2014	Changed “Liquidity Code” to “Liquidity Flag”
1.0	06/10/2014	Updated the formatting of the document to make more standardized across all specs
1.0	01/15/2015	Added Liquidity flag values “j”, “r”, “t”, “4”, “5”, “g”