DROP
Version 2.10
Updated April 23, 2018

Contents

1   Overview

NASDAQ OMX BX accepts limit orders from subscribers and executes matching orders when possible. Non-matching orders may be added to the NASDAQ OMX BX 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 OMX BX.

Each DROP account is configured to transmit information concerning orders entered by one or more NASDAQ OMX BX 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 OMX BX 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 OMX BX.

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 a CR.

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

Upon receiving a valid login, the DROP host will send any previously generated messages as quickly as possible. Once it has sent all pending events the connection will remain open but idle until the next matching event occurs. As soon as a new event occurs, the corresponding message is sent as quickly as possible. If the client is not able to read messages 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 can log into a DROP port, download

messages, log out, and then directly import the downloaded messages into a spreadsheet or database application.

1.2   Recovering From Broken Connections

In the case where a client looses 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 message 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 messages.

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 6 whole number places followed by a decimal point and 4 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 information on an identical set of events and matching firms and ports, 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 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 message lines from the host in real time. Each message line is fixed format, comma delimited, and CR/LF terminated ASCII text.

Name	Offset	Len	Type	Sample	Notes
Time Stamp	0	9	Timestamp	34293.1	The time the event occured on INET to the nearest millisecond.
Type	10	1	Type	'E'	"A"=New order accepted "E"=Existing order executed "X"=Existing order canceled "B"=Previous execution broken "U"=Existing order replaced
Source	12	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 of "$PHON " for orders received via NASDAQ's phone desk.
User	19	4	Alphanum	(arbitrary)	The free form User field as specified by the order entry firm when the order was entered into INET.
Token	24	10	Alphanum	(arbitrary)	The free form Token field as specified by the order entry firm when the order was entered into NASDAQ.
Replaced Token	35	10	Alphanum	(arbitrary)	The free form Token field as specified by the order entry firm when the order was entered into NASDAQ. Only used when we send a replace message.\
Buy/Sell	46	1	Alpha	B	The side of the trade executed. B=Bought, S=Sold, T=Sold Short, E=Sold Short
Shares	48	6	Numeric	10000	For a new order accept, the total number of shares entered. For an existing order cancel, the incremental number of shares canceled. Note that an order can be partially

					canceled and still have open shares. For an existing order execute, the incremental number of shares executed in this trade. Note that a single order can result in multiple executions. For an existing order execute, the incremental number of shares executed in this trade. Note that a single order can result in multiple executions. For a broken execution, the number of shares in the previously transmitted execution.
Stock	55	6	Alpha	INTC	The stock symbol
Price	62	11	Numeric with 4 decimal places	12.875	For a new order accepted, the limit price of the order. For an execution, the execution price. For a cancel, the limit price of the open order.
Firm	74	4	Alpha	BIGJ	The order entry firm.
Reference	79	12	Numeric	836455	The order unique reference number assigned by NASDAQ to this order.
Match/ Time in Force	92	12	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	105	1	Alpha	A	The capacity as specified by the order entry firm. A=Agency P=Principal R=Riskless
Liquidity Code	107	1	Alpha	R	Will be returned within all execution reports that contain a partial or full fill. A = Added Liquidity R = Reduced Liquidity J = Non-displayed and Added Liquidity X = Routed D = DOT Routed F = Opening Trade (on NYSE) G = On-Close order (on NYSE) Y = Re-Routed by NYSE S = Odd Lot Executions (on NYSE) U = Added Liquidity (on NYSE) E = NYSE Other P = Routed to PSX T = Opening Trade (on ARCA) Z = On-Close order (on ARCA) Q = Routed to Nasdaq m = Removed liquidity at a midpoint k = Added liquidity via a midpoint order j = RPI (Retail Price Improving) order provides liquidity r = RMO Retail Order removes RPI liquidity t = RMO Retail Order removes price improving non- displayed liquidity other than RPI liquidity q = RMO Retail Order removes non-RPI mid-point liquidity 7 = Displayed, liquidity-adding order improves the NBBO

						8 =Displayed, liquidity-adding order sets the BXBBO while joining the NBBO p = Removed price improving non-displayed liquidity N = Passive Midpoint Execution
Clearing Code	109	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 Tradingservices@nasdaqomx.com. We also welcome any suggestions for new features or improvements.

3   Revision History

Version	Date	Revision
2.1	04/07/2008	Initial Version
2.1	10/28/2008	Added Capacity field Added Replaced Token field Updated Reference field from 9 to 12 characters Updated Match field from 9 to 12 characters
2.1	11/29/2008	Added liquidity values (all values after "J" in the specs) Added TIF to the MatchID field for new order, replaced order, and cancelled order messages
2.1	04/19/2012	Added liquidity values "k", "m"
2.1	06/10/2014	Updated the formatting of the document
2.1	10/17/2014	Added liquidity values "j", "r", "t"
2.1	12/16/2014	Added liquidity values "Y", "7", "8", "q" Removed all cross liquidity values
2.1	06/11/2015	Added liquidity flags "7", "8"
2.1	03/13/2017	Added liquidity flag "p"
2.1	04/23/2018	Added liquidity flag "N"