



Top of Book Quote Feed (TOPS)

Please contact IEX Market Operations at 646.343.2300 or marketops@iextrading.com, or your IEX onboarding contact with any questions.

Version: 1.4

Updated: October 27, 2015



IEX Top of Book Quote Feed (TOPS) Specification

Overview

The Top of Book Quote Feed (TOPS) is a direct data feed product offered by IEX. TOPS provides IEX’s aggregated best quoted bid and offer position in real-time for all securities on IEX’s Order Book. Non-displayed orders and non-displayed portions of Reserve Orders are not represented in TOPS.

TOPS cannot be used to enter orders. For order entry, refer to the appropriate [IEX FIX Specification](#).

For ordering information:

- Contact IEX Market Operations at 646.343.2300 or marketops@iextrading.com

Transport Protocol Options

For direct data feed subscribers, IEX provides TOPS using the [IEX Transport Protocol \(IEX-TP\)](#) on UDP multicast for sequenced delivery.

Architecture

TOPS is made up of a series of sequenced messages. The messages that make up the TOPS feed are delivered using a lower level protocol that takes care of sequencing and delivery guarantees.

Data Types

- String: variable length ASCII byte sequence, left justified and space filled on the right
- Long: 8 bytes, signed integer
- Price: 8 bytes, signed integer containing a fixed point number with 4 digits to the right of an implied decimal point
- Integer: 4 bytes, unsigned integer
- Byte: 1 byte, unsigned integer

All binary fields are in little endian format.

Multicast Addresses

Site	XC Type	Group	Port	Source IP Address
Secaucus POP (Equinix NY5)	Primary (A)	233.215.21.1	16641	23.226.155.132
	Secondary (B)	233.215.21.129	16641	23.226.155.196
Chicago DR (Equinix CH4)	Primary (A)	233.215.21.127	16641	23.226.155.190
	Secondary (B)	233.215.21.254	16641	23.226.155.254



Message Formats

Quote Update Message

TOPS broadcasts a real-time update each time IEX’s best bid or offer quote is updated during the trading day. If no quote exists, IEX publishes a “zero quote” where the Bid Price, Bid Size, Ask Price, and Ask Size will be zero (0). Unchanged and zero quotes are resent every 30 seconds as new messages by TOPS.

Field Name	Offset	Length	Type	Description / Notes
Message Type	0	1	Byte	'Q' (0x51) – Quote Update
Flags	1	1	Byte	See Appendix A for flag values
Timestamp	2	8	Long	Time stamp
Symbol	10	8	String	Quoted symbol
Bid Size	18	4	Integer	Aggregate quoted best bid size
Bid Price	22	8	Price	Best quoted bid price
Ask Price	30	8	Price	Best quoted ask price
Ask Size	38	4	Integer	Aggregate quoted best ask size

Total Message Data length is 42 bytes. See Appendix B for the bitwise representation.

Timestamp

The time of the top of book update as set by the IEX Trading System logic. The format of the timestamp is POSIX (Epoch) time stamp in nanoseconds.

Symbol

Quoted symbol represented in Nasdaq Integrated symbology.

Price

Price of the quote, where the whole number portion is zero filled on the left and the decimal portion is zero filled on the right. The decimal point is implied by position and does not explicitly appear in the field. For example, 123400 = \$12.34.

Size

Size of the quote represented in number of shares.



Appendix A: Flags

Quote Update

Definition

Bit	Name	Description
0	H: Symbol Halt Flag	0: Symbol is active (available for trading) 1: Symbol is halted
1	P: Market Session Flag	0: Regular Market Session 1: Pre/post-Market Session

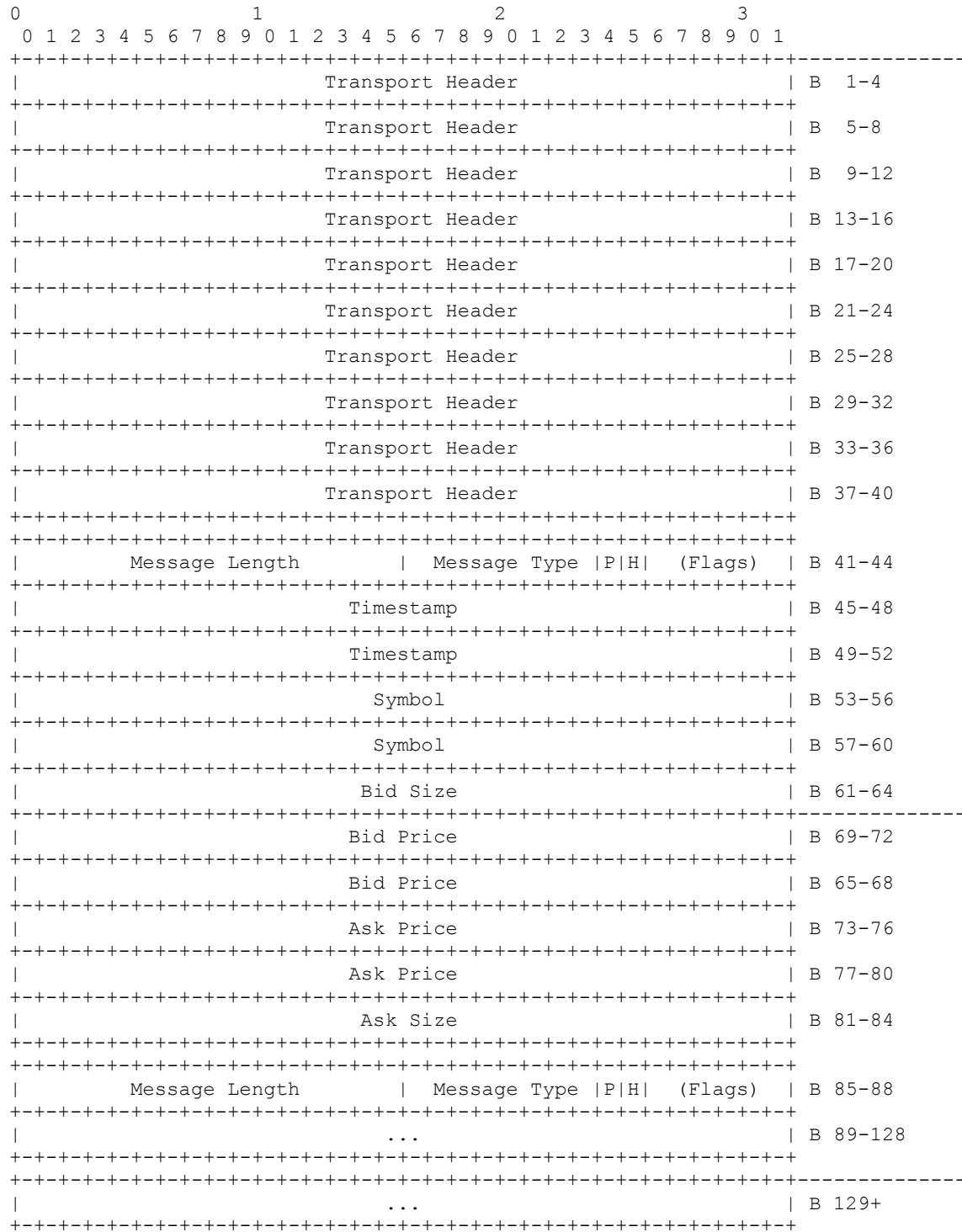
Usage

H	P	Value	Meaning
		0x00	Symbol is active during Regular Market Session
	X	0x40	Symbol is active outside of Regular Market Session
X		0x80	Symbol is halted during Regular Market Session
X	X	0xc0	Symbol is halted outside of Regular Market Session



Appendix B: Bitwise Representation

Quote Update Messages in a Single Segment





Appendix C: Document History

Version	Date	Change
1.0	November 3, 2014	Initial document
1.1	December 10, 2014	Add Multicast Addresses section
1.2	April 29, 2015	Add DR multicast details
1.3	May 12, 2015	Updated Address and Contact Info
1.4	October 27, 2015	Update DR A-side source IP address