

ISE Depth of Market Feed - Quick Start Guide v3.0

You have just been assigned the task of integrating the ISE Depth of Market Feed into your trading system. Where do you start? What data does the feed contain? How is it formatted? What do I need to do? This document aims to answer these questions.

Overview

ISE is the world's largest equity options exchange with the deepest and most liquid quoted markets for the options it trades. ISE Depth of Market Feed provides a consolidated view of tradable prices and liquidity at the top five price levels to ensure transparency and improve trading efficiency.

Product Description

ISE Depth of Market Feed provides real-time order book information which shows aggregated quote and order volume for the top five price levels. This is a multicast feed that takes advantage of the new FIX FAST (FIX Adapted for STreaming) market data protocol which is optimized to reduce bandwidth and minimize latency.

The fields that are provided for each instrument are: OPRA symbol, CFI code (Call/Put), expiration date, underlying symbol, underlying number, series number, trading status, and five levels of depth. At each level you are provided with total quantity, customer quantity (if present), price, side, and price-level. **Customer Quantity** is a new field that provides customer aggregate bid/ask size at each price level which replaces a previous field called Customer Indicator. All data is time stamped to the millisecond.

The feed does not contain trade data or information from other options exchanges. Although this is a separate feed from OPRA, the top price-level or BBO contains the identical quotes that are provided in the ISE BBO feed to OPRA. ISE Depth of Market Feed is a separate subscription service.

Data Distribution

This multicast feed is disseminated across 16 IP addresses from two redundant ISE data centers that are diversely connected to extranet providers. We recommend redundant 50 MB connections or an aggregate of 100 MB of bandwidth, which represents 100% head room based on the peak data rates as of January 2008. Please refer to Section 5 of the Programmer's Guide for additional details and port information.

FIX Message Format

ISE Depth of Market Feed uses the FIX FAST market data protocol and the messages are defined using the best practices outlined by FIX 4.4 and FAST v1.1 encoding standards for market data. The ISE is a sponsor of the FIX Market Data Working Group.

ISE Depth of Market Feed has only three FIX message types. A Status message that provides quote condition information, an Incremental Refresh message that provides updates to the order book, and Full Refresh message that provides a snapshot of the order book. Please refer to Section 2 of the Programmer's Guide for additional details and thorough examples.

FAST Efficiencies

ISE Depth of Market Feed utilizes the FAST Protocol to achieve efficient compaction of the FIX Market Data messages. This encoding process results in a reduction of about 80% from the size of the expanded FIX data.

FAST uses a template to describe each message so that only the minimum amount of data needs to be sent. The fields are transmitted in the sequence defined by the template and the presence map. The template indicates which fields are present in each message and there are a number of operators that leverage previous field values so that repetitive and constant data are not transmitted with every refresh message. Please refer to Section 3 of the Programmer's Guide for additional details and definitions.

FAST Decoder

A UDP packet will contain one or more FAST messages which must be decoded. The decoder does not need to be a separate stand-alone application. It could be integrated directly into the subscriber's application so it decodes the messages directly off of the network which is expected to be more efficient than first translating the data to FIX (ASCII) prior to processing.

The ISE provides an open source utility called the FAST Demo Application that will read and decode the FAST messages and write them to a file. This is a free tool that can be used as a guide for developing a subscriber's own decoder. Due to firewall issues, the FAST Demo Application can be requested by sending an email to: depth@ise.com or calling (212)897-8160.

Recovery

There is no need for subscribers to request a retransmission or a refresh since the ISE will re-disseminate all price levels of depth at regular intervals allowing a user to recover the current status of the order book. This feature is called Continuous Full Refresh (CFR). Upon starting your application or restarting your application after a failure you will wait until you receive a snapshot for each option series. The complete rotation for all series will take two minutes regardless of when you connect and will account for less than 5% of bandwidth.

Documentation

The following documentation is currently available for the Depth of Market Feed at www.ise.com/depth:

- ISE Depth of Market Quick Start Guide
- ISE Depth of Market Programmer's Guide
- ISE Depth of Market FAST Templates
- ISE Depth v2.0 Release Notes
- ISE Depth v2.0 Sample Data for Examples in Programmer's Guide (Section 4.5)

Support and Contacts

ISE support for the Depth Feed is available from 8 am to 6 pm (Eastern Time) on market days and the contacts are as follows:

ISE Contacts		
Business Issues	(212) 897-8160	depth@ise.com
Technical Support	(212) 897-0284	computeroperations@ise.com
API Support	(212) 897-0244, #1	tms@ise.com
Member Connectivity	(212) 897-0244, #3	connect@ise.com

Members may use their existing connections to access this data but their routers may need to be upgraded to support multicast data. In addition, the ISE Depth of Market Feed is available via BT Radianz, NYSE Euronext Advanced Trading Solutions (SFTI) and SAVVIS Financial Services. Their support and connectivity contact details are as follows:

BT Radianz Inc.		
Edmond Esquilin	(212) 415 4664	edmond.esquilin@bt.com
Support	(877) 228-1497	

NYSE Euronext Advanced Trading Solutions - SFTI (Secure Financial Transaction Infrastructure)		
Sales	(212) 244-5551	sales@transacttools.com
Support	(800) 873-7422	SFTI@SIAC.com

SAVVIS Financial Services		
Sales	800 463-8294	teamise@savvis.net
Support	888 638-6771	

What to do next

Once you have an agreement in place with the ISE to access ISE Depth of Market Feed, work with your network engineers and BT Radianz/NYSE Euronext Advanced Trading Solutions to get access to the data feed. Have the demonstration program installed onto a server in a designated network area. Verify that you can read the data and save it to a file. Check that the data is in the format you expected and the volumes are reasonable.

For additional information please send email to depth@ise.com.