



# **INVESTORS EXCHANGE USER MANUAL**

Version 1.50

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# INTRODUCTION

This document provides information about the Investors' Exchange LLC ("IEX," the "System," or the "Exchange") and IEX Services LLC ("IEX Services"), which is the outbound routing broker for the Exchange. The Exchange and IEX Services are each wholly-owned by IEX Group, Inc.

Information contained in this document is subject to change at any time. For the latest updates, please refer to <http://iextrading.com/>.

## How IEX Operates

The Exchange is a fully automated electronic limit order book for orders to buy and sell National Market System ("NMS") equity securities with a continuous, automated matching function. The Exchange also offers routing functionality through IEX Services with direct connectivity to all venues displaying Protected Quotations, as defined by Regulation NMS. Users connect to the System via FIX order entry gateways using the industry standard FIX 4.2 protocol, with IEX specific extensions. The order entry gateways validate incoming orders, convert them to an internal proprietary format, and forward them to the appropriate matching engine.

At the core of the System are several matching engines. Each matching engine handles a set of symbols, which can be reallocated to balance the load across the System. Each matching engine compares the limit price of an incoming order with the price of resting (i.e., booked) limit or pegged orders on the IEX Order Book and the price of other markets' displayed quotes. If the order is immediately marketable against the IEX Order Book, and there is interest available on the IEX Order Book at a price equal to or better than the consolidated quote, an immediate match is made and communicated back to Users. If another market is displaying a better quote, the order will be handled depending on the User's instructions (e.g., forwarded to the other market to attempt to fill the order, posted to the IEX Order Book, canceled, etc.).

Aggregate top of book market data and last sale information are available via the IEX TOPS protocol. Refer to the [IEX TOPS Specification](#) for more details. Aggregate depth of book market data and last sale information are available via the IEX DEEP protocol. Refer to the [IEX DEEP Specification](#) for more details.

Users or their clearing firms may request copies of their executions via drop copies using the Exchange's FIX protocol. Refer to the [IEX FIX Specification](#) for more details.

## Technology

IEX's primary trading platform, located in a Cyxtera data center (NJ2X) in Weehawken, NJ, is accessible to Members, Sponsored Participants, Service Bureaus, Data Recipients (collectively "Participants"), and Extranet Providers from the IEX POP ("point-of-presence" or simply "POP"). IEX offers a POP located in an Equinix data center (NY5) in Secaucus, NJ. The POP is designed to provide Participants with 350-microseconds of latency from the POP to the primary trading platform.

IEX's secondary data center (the "Disaster Recovery data center")<sup>1</sup> is located at the Equinix data center (CH4) in Chicago, IL. Connectivity to the IEX Disaster Recovery data center, while not a mandatory requirement for all Participants, is recommended to minimize service disruption in the event of an issue at the primary trading platform data center. Weehawken and Secaucus are the "primary" or "hot" sites, with Chicago being "secondary" or "warm."

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<sup>1</sup> IEX currently supports disaster recovery on a T+1 day basis.



Participants will not be able to connect to order entry systems nor receive market data in Chicago until IEX declares the primary trading platform in Weehawken or POP in Secaucus “down.”

All data centers the Exchange use provide a high level of security and availability through redundant and reliable environmental control systems (redundant power supplies, on-site backup generators, cooling systems, etc.). Data center personnel are available 24/7 to maintain and service the System.

The Exchange’s trading platform is distributed across several servers to maximize throughput, minimize bottlenecks, and allow for simplified scalability. More servers can be added easily to expand system capacity.

# ACCESS TO THE EXCHANGE

## Membership Application

To become a Member of the Exchange a firm must:

- be registered as a broker-dealer;
- be a member of at least one other national securities exchange or national securities association;
- be able to clear trades or must clear through a clearing firm; and
- meet certain additional criteria prescribed by the Exchange and set forth in Chapter 2 of the [Exchange's Rules](#).

The Exchange is available for order entry and execution by Members; non-Members may also gain access to the Exchange through a Sponsored Participant arrangement with a Sponsoring Member firm, in accordance with the Exchange’s Rules. [Membership](#) and [Sponsored Access](#) applications and agreements are available on the Exchange’s website.

The Exchange’s data products are available to Data Recipients with authorized access. The [Data Agreements and Forms](#) are available on the Exchange’s website.

For more information about becoming a Member, Sponsored Participant or Data Recipient, please contact IEX Market Operations at 646.343.2300 or [marketops@iextrading.com](mailto:marketops@iextrading.com).

## Connectivity

Members of the Exchange and their Sponsored Participants (collectively, “Users”) are permitted to electronically send orders to buy and sell securities traded on the Exchange through the use of the Exchange’s FIX API, defined in the [IEX FIX Specification](#). Users may also send orders through a Service Bureau. [Service Bureau](#) application and agreements are available on the Exchange’s website.

Data Recipients of the Exchange are permitted to electronically receive the Exchange’s data products specified in IEX Rule 11.330 through the use of the Exchange’s APIs, defined in the [Exchange's specifications](#).

Participants are responsible for choosing and implementing connectivity to the POP and the Disaster Recovery data center. Participants are strongly encouraged to establish connectivity to the POP and the Disaster Recovery data center to minimize service disruption in the event of an issue at the primary data centers.

IEX supports the following connectivity methods:



- Cross-Connect: Participants that are co-located in the POP or the Disaster Recovery data center may request an in-house cross-connect from the Participant's point of presence to IEX.
- Extranet Providers: IEX is currently on-network with various extranet providers. Refer to the [IEX Connectivity Manual](#) for a current list of approved extranet providers.
- Private Line Ethernet: Telecommunications carriers provide a circuit extension from Participants in different data centers to the POP or the Disaster Recovery data center. Refer to the [IEX Connectivity Manual](#) Carriers section for a list of carriers.

For more detailed information and instructions on how to connect to IEX, please refer to the [IEX Connectivity Manual](#).

# MARKET OPERATION

## Order Types and Related Information

IEX accepts limit, pegged, and market orders. By default, orders are limited to a maximum of 1,000,000 shares or \$30,000,000.00.

Users may submit orders to the Exchange designated with modifiers such as IOC, FOK, Day, Good 'til Extended Day ("GTX"), System Hours ("SYS"), Good 'til Time ("GTT"), On-Open, On-Close, IEX Only, Pegged, Non-Displayed, Minimum Quantity, Routable, and/or Intermarket Sweep. Note that IEX Only order types will only execute/post on the Exchange. Note that this is a representative, but incomplete list of order types and modifiers.

Refer to Chapter 11 of the Exchange Rule Book for more information regarding order types, [Investors Exchange Rule Book](#).

Refer to the [IEX FIX Specification](#) for more details on how various order types are implemented.

Finally, additional information about order types is available on the Exchange's [website](#).

### Minimum Trading Increment

The minimum price variation ("MPV") or minimum trading increment for orders priced \$1.00 or greater is \$0.01 and can be executed in increments of \$0.005 (i.e., certain midpoint executions). Orders priced below \$1.00 are eligible for trading in sub-penny increments of \$0.0001.

Certain securities are subject to quoting and trading requirements of the Tick Size Pilot Program, as applicable.

### Time-in-Force Values

The term Time-in-Force ("TIF") determines the periods of time during which an order is available for potential execution and shall include:

- IOC - immediate-or-cancel
- FOK - an IOC order where the entire size must be filled, else the order will be canceled
- DAY - available for trading during the Regular Market Session
- GTX - available for trading during the Regular Market Session and Post-Market Sessions, and expires at the end of the Post-Market Session
- SYS - available for trading during System Hours, and expires at the end of the Post-Market Session
- GTT - expires at the earlier of specified expire time or end of the Post-Market Session



- On-Open – available for trading only when determining the opening price of an IEX-listed security
- On-Close – available for trading only when determining the closing price of an IEX-listed security

## IEX Auctions

The IEX Auction Process provides electronic price discovery mechanisms that efficiently match orders in IEX-listed securities at a single price using a Double auction. These auctions enable IEX Participants to execute against On-Open and On-Close interest at IEX. They also allow for participation in IEX corporate initial public offerings (“IPOs”), new issues (e.g., Exchange Traded Products), auctions resulting from security halts, and auctions resulting from LULD trading pauses. During the auction process, IEX will calculate and disseminate current price, size, imbalance information, auction collar information, and other relevant information about upcoming auctions.

Only IEX-listed securities are eligible for IEX Auctions. Listings on IEX will be added to the Opening and Closing Auctions either after the IPO Auction or after the listing has transferred to IEX from another listing exchange. On-open and On-Close orders submitted for non-IEX-listed securities will be rejected.

Refer to Rule 11.350 of the Exchange Rule Book for more information regarding IEX Auctions, [Investors Exchange Rule Book](#). Additionally, refer to the [IEX Auction Process Specification](#) for further information regarding IEX Auctions and IEX Auction Information. IEX Auction Information is available via the IEX TOPS and DEEP protocols; see below for additional information regarding such IEX data products.

## Routing

Users have the option, but are not required, to use the Exchange’s affiliated broker-dealer, IEX Services, to route orders to markets other than the Exchange. IEX Only Orders are not routed to other markets. Users may submit orders to the Exchange designated with the following modifiers: Router or Route Basic. Refer to specifications noted above for complete details on each routing option’s implementation and Rule 11.230(c) for complete details on each routing option’s behavior.

## Locking or Crossing the Market

Orders that would lock or cross the consolidated market (i.e., the NBBO) are price slid by the System upon entry. Refer to Rule 11.190(h) of the Exchange Rule Book for more information regarding price sliding, [Investors Exchange Rule Book](#).

## Throttles

No guarantee is made about system performance, especially during periods of high volatility and order traffic. IEX does maintain a message per second limit at which point new orders and modifies are queued at the order entry gateway. The throttle does not apply to cancels. This limit is subject to change at any time; contact IEX Market Operations for current limitations.

## Data Products

IEX offers several data products:

- [TOPS](#) (Top of Book Quote and Last Sale Feed)
- [DEEP](#) (Depth of Book and Last Sale Feed)
- [DROP](#) (Drop Copy Feed)
- [HIST](#) (Historical Data)

Additional information about data products and specifications are available on the Exchange’s [website](#).



# Trading

## Trading Hours

Orders may be executed on the Exchange or routed away from the Exchange during the Pre-Market, Regular Market, and Post-Market Sessions, collectively known as “System Hours.”

| Session                      | Start and End Time (all times are Eastern Time) |
|------------------------------|---|
| Begin Order Entry Acceptance | 8:00 a.m.                                       |
| Pre-Market Session           | 8:00 a.m. – 9:30 a.m.                           |
| Regular Market Session       | 9:30 a.m. – 4:00 p.m.                           |
| Post-Market Session          | 4:00 p.m. – 5:00 p.m.                           |

## Holiday Schedule

The Exchange will be closed in observance of the following holidays:

- New Year’s Day
- Dr. Martin Luther King Jr. Day
- President’s Day
- Good Friday
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Christmas

When any such holiday falls on a Saturday or Sunday, the Exchange will follow the direction of the New York Stock Exchange (“NYSE”) with respect to observing the holiday on an alternate weekday. The [IEX Holiday Schedule](#) is subject to change.

# CLEARLY ERRONEOUS EXECUTIONS

Clearly Erroneous Executions are handled in accordance with Exchange Rule 11.270. The Exchange’s rules are available at [Investors Exchange Rule Book](#).

# DATA CENTERS

Refer to the [IEX Connectivity Manual](#).



# CONTACT IEX

|                                |   |
|--------------------------------|---|
| Website                        | <a href="http://iextrading.com/">http://iextrading.com/</a>                                     |
| Main Telephone Number          | 646.343.2000  |
| Business Development (Sales)   | 646.343.2110 or <a href="mailto:sales@iextrading.com">sales@iextrading.com</a>                  |
| Market Operations              | 646.343.2310 or <a href="mailto:marketops@iextrading.com">marketops@iextrading.com</a>          |
| System Reliability Engineering | 646.343.2200 or <a href="mailto:sre@iextrading.com">sre@iextrading.com</a>                      |
| Network Operations             | 646.343.2245 or <a href="mailto:netops@iextrading.com">netops@iextrading.com</a>                |
| Listings Sales                 | 646.343.2140 or <a href="mailto:listings@iextrading.com">listings@iextrading.com</a>            |
| API Support                    | <a href="mailto:api@iextrading.com">api@iextrading.com</a>                                      |
| Pricing                        | <a href="https://iextrading.com/trading/fees">https://iextrading.com/trading/fees</a>           |
| Billing                        | 646.343.2035 or <a href="mailto:accounting@iextrading.com">accounting@iextrading.com</a>        |
| Mailing Address                | Investors' Exchange LLC<br>4 World Trade Center<br>44 <sup>th</sup> Floor<br>New York, NY 10007 |





# REVISION HISTORY

| Version | Date              | Change  |
|---------|-------------------|---|
| 1.00    | August 20, 2015   | Initial Document  |
| 1.10    | February 23, 2016 | Update logo, add link to documents on the website, add data products and links to specifications, remove Carteret   |
| 1.20    | June 27, 2016     | Updated routing options, updated end time of the Post-Market Session, removed reference to a separate last sale feed, added reference to last sale information being disseminated in TOPS |
| 1.21    | October 21, 2016  | Updated Minimum Trading Increment to account for the Tick Size Pilot Plan   |
| 1.30    | April 12, 2017    | Added the Depth of Book and Last Sale feed, DEEP  |
| 1.40    | May 25, 2017      | Added Historical Data, HIST<br>Listings updates (On-Open and On-Close orders, IEX Auctions, IEX Auction Information)<br>Added API Support contact email                                   |
| 1.50    | January 26, 2018  | Replaced CenturyLink with Cyxtera.<br>Added Listings contact information.<br>Updated contact numbers.   |