

MIAX PEARL FAQ

This document contains frequently asked questions about the MIAX PEARL Exchange and will cover functionality, Membership, order protections and market data. For additional information or to arrange testing please contact MIAX Trading Operations at TradingOperations@MIAXOptions.com, (609) 897-7302. To learn about trading on MIAX PEARL please contact Sales at Sales@MIAXOptions.com, (609) 897-8177. The MIAX PEARL Interface Specifications can be viewed [here](#).

Q. What is MIAX PEARL?

A. The MIAX PEARL Exchange (“MIAX PEARL” or the “Exchange”) is a fully automated electronic options trading platform which leverages MIAX’s industry leading technology, infrastructure and risk tools. MIAX PEARL does not maintain a physical trading floor and its trading system has been developed specifically for the unique functional and performance demands of derivatives trading, providing best in class customer interface features, protections, and performance for users of the Exchange.

Q. What is the MIAX PEARL market model?

A. MIAX PEARL will employ a Price/Time allocation and Maker/Taker pricing model.

Q. What types of Membership will be supported for MIAX PEARL?

A. MIAX PEARL will support Market Makers (MM) and Electronic Exchange Members (EEM).

Q. What types of order types will be supported by MIAX PEARL?

A. The following order types will be supported by MIAX PEARL:

- Cancel-Replacement Order
- Do Not Route Order (DNR)
- Good ‘Til Cancelled Order (GTC)
- Immediate-or-Cancel Order (IOC)

- Intermarket Sweep Order (ISO)
- Limit Order
- Market Order
- Post-Only Order

Each of these order types is described in detail in the MIAX PEARL Rulebook; Rule 516.

Q. Does the MIAX PEARL Exchange route to other options exchanges to execute against the NBBO?

A. Yes, MIAX PEARL will route eligible orders received via the FIX Order Interface to away markets when the away market(s) are at the NBBO in accordance with the Options Locked and Crossed Markets Plan. Orders received through the FIX Order Interface that are not eligible for routing, and any orders received through the MEO Interface, will be managed by the MIAX PEARL System if locking or crossing the NBBO.

Q. What Market Protections will be available on MIAX PEARL?

- A.** MIAX PEARL will provide the following Market Protections:
- MIAX PEARL Variable Price Protection (MVP)
 - MIAX PEARL Order Monitor (MOM)
 - MIAX PEARL Aggregate Risk Manager (ARM)
 - MIAX PEARL Aggregate Risk Manager Across Classes (ARM²)
 - MIAX PEARL Risk Protection Monitor (RPM)
 - FIX Auto Cancel on Disconnect Protection (FIX ACOD)
 - MEO Binary Orders Auto Cancel on Disconnect Protection (MEO ACOD)
 - Mass Cancellation of Trading Interest
 - Self-Trade Protection
 - Order Purges
 - ABBO Crossing Protections

Q. Are the MIAX PEARL Market Protections similar to the MIAX Options Protections?

A. Yes. Many of the protections for MIAX PEARL are similar to those for MIAX Options. However, the scope of the protections is different under certain circumstances as defined in the [MIAX PEARL Rulebook](#). See the [MIAX Options Risk Management Market Protections Overview](#) for information about some of the protections.

Q. Where can I find the MIAX PEARL User's Manual?

A. [MIAX PEARL User's Manual](#)

Q. What are the trading hours for MIAX PEARL?

A. The Live Order Window	7:30 am to 4:25 pm Eastern Time
Regular Trading Session (Equity options)	9:30 am to 4:00 pm Eastern Time
Regular Trading Session (Defined list of ETF options)	9:30 am to 4:15 pm Eastern Time

Q. How do I access the MIAX PEARL Market?

- A. Market Makers and Electronic Exchange Members can access MIAX PEARL through the following Liquidity Interfaces:**
- MIAX PEARL Express Order Interface (MEO)
 - Provides all members with the ability to submit orders in a binary message format.
 - MIAX PEARL FIX Order Interface (FOI) Gateway
 - Provides all members with the ability to submit orders in a FIX message format.
 - MIAX PEARL Clearing Trade Drop (CTD)
 - The CTD interface provides real-time clearing trade content to each party of a trade for all MIAX PEARL executions.
 - MIAX PEARL FIX Drop (FXD)
 - The FXD interface provides real-time trade information corresponding to the firm's orders submitted via the FIX interface.

See the [MIAX PEARL Interface Specifications](#) for more details.

Q. Are the MIAX PEARL Liquidity Interfaces different from those used for MIAX Options?

A. The MIAX PEARL Express Order Interface (MEO) is dedicated to the MIAX PEARL trading environment and therefore is not supported by MIAX Options. Binary orders can only be submitted to MIAX PEARL via MEO.

MEO does support various features to facilitate firm's development efforts:

- In addition to supporting standard binary order types and the related messaging semantics, MEO provides an AutoReplace binary order type that mimics the messaging semantics of the MIAX Options Express Interface (MEI) for Quoting.
- MIAX PEARL's MEO supports the same interface options as MIAX Options' MEI via support for Full Service Ports and Limited Service Ports.

- MEO supports much of the same functionality as MEI such as the Automated Risk Monitor (ARM) and ARM², Mass Cancels, Cancel on Disconnect, Port Grouping, etc.
- MEO uses the same SesM-TCP protocol for login, authentication and message retransmission support as the MIAX Options MEI.
 - MEO uses the same advanced technologies as those employed in MIAX Options to provide industry leading performance and determinism.
- MIAX PEARL FIX Order Interface (FOI) Gateway
 - The MIAX PEARL FOI Gateway is dedicated to the MIAX PEARL trading environment and requires firms to use the MIAX PEARL FOI for submitting orders to MIAX PEARL and continue to use the mutually exclusive MIAX Options FOI for submitting orders to MIAX Options.
 - The MIAX PEARL FOI message formats are similar to those of MIAX Options FOI. Please refer to the MIAX PEARL FOI Specification for details.
 - The MIAX PEARL FOI application facilitates firm's development efforts as it uses the same FIX session implementation and Primary/Secondary model as the MIAX Options platform.
- MIAX PEARL Clearing Trade Drop (CTD)
 - The MIAX PEARL CTD interface is dedicated to the MIAX PEARL trading environment and requires firms to use the MIAX PEARL CTD for receiving MIAX PEARL trade drop content and continue to use the mutually exclusive MIAX Options CTD for receiving trade drop content from MIAX Options.
 - The MIAX PEARL CTD message formats are similar to those of MIAX Options CTD. Please refer to the MIAX PEARL CTD Specification for details.
 - The MIAX PEARL CTD application facilitates firm's development efforts as it uses the same CTD session implementation and Primary/Secondary model as the MIAX Options platform.
- MIAX PEARL FIX Drop (FXD)
 - The MIAX PEARL FXD interface is dedicated to the MIAX PEARL trading environment and requires firms to use the MIAX PEARL FXD for receiving MIAX PEARL FIX trade drop content and continue to use the mutually exclusive MIAX Options FXD for receiving FIX trade drop content from MIAX Options.
 - The MIAX PEARL FXD message formats are similar to those of MIAX Options FXD. Please refer to the MIAX PEARL FXD Specification for details.
 - The MIAX PEARL FXD application facilitates firm's development efforts as it uses the same FXD session implementation and Primary/Secondary model as the MIAX Options platform.

Q. How does a MIAX PEARL Market Maker assign appointments?

A. MIAX PEARL Market Makers must self-assign appointments on a series-by-series-basis using the MEO interface to enter their assignments each day before 9:00 am Eastern Time.

Q. What are the differences between a MIAX PEARL Express Order Interface (MEO), Limited Service Port (LSP) and an MEO Full Service Port (FSP)?

A. MEO LSP supports the ability to submit orders to MIAX PEARL on a one by one basis. Meaning each MEO order message packet contains a single order that must be either IOC or ISO. This is beneficial for MEO customers that require a high speed order input mechanism, but have low throughput demands. For example, customers that focus on taking may benefit from using LSP ports.

MEO Full Service Port Bulk (FSP_B) supports the ability to submit multiple orders within an MEO order message packet, a/k/a bulk orders. This is beneficial for customers that require high speed order input coupled with high throughput demands. For example, customers that focus on making markets in a large number of option products may benefit from using a FSP_B.

MEO Full Service Port Single (FSP_S) supports the ability to submit a single order within an MEO order message packet. This is beneficial for customers that require low latency order input without high throughput demands. For example, customers that focus on making markets in a small number of option products may benefit from using a FSP_S.

See the [MEO Interface Specifications](#) for more details.

Q. What market data feeds are available via MIAX PEARL?

A. MIAX PEARL provides the following market data feeds for customers:

- MIAX PEARL Top of Market (ToM)
 - ToM is a high speed real-time data feed providing MIAX PEARL BBO and Trade Report messages as well as administrative messages such as Series Updates, System State, and Underlying Trading System Status.
- MIAX PEARL Liquidity Feed (PLF)
 - PLF is a high speed real-time data feed the publishes all actionable orders as well as administrative messages such as Series Updates, System State, and Underlying Trading System Status.

See the [MIAX PEARL Interface Specifications](#) for more details.

Q. Is there a retransmission service available for the various market data feeds?

A. Yes. Both the MIAX PEARL Top of Market (ToM) and MIAX PEARL Liquidity Feed (PLF) facilities support retransmission and refresh services. *See the [MIAX PEARL Interface Specifications](#) for more details.*

Q. Are the MIAX PEARL market data feeds different from those used for MIAX Options?

A. Data feeds explained as follows:

- MIAX PEARL Top of Market (ToM)
 - The MIAX PEARL ToM feed will be distributed across a dedicated set of multicast groups mutually exclusive from those used to disseminate the MIAX Options ToM feed.
 - The MIAX PEARL ToM feed leverages the same MACH protocol and very similar message formats as the MIAX Options ToM feed to ease firm's development efforts.
 - The MIAX PEARL ToM feed retransmission and refresh services are supported by a dedicated and mutually exclusive set of servers from those used for MIAX Options. However, the protocol and message formats for MIAX PEARL are very similar to those of MIAX Options for the retransmission and refresh services.
- MIAX PEARL Liquidity Feed (PLF)
 - The MIAX PEARL PLF feed will be distributed across a dedicated set of multicast groups mutually exclusive from those used to disseminate the MIAX Options Order Feed (MOR) feed.
 - The MIAX PEARL PLF feed leverages the same MACH protocol and very similar message formats as the MIAX Options Order Feed (MOR) feed to ease firm's development efforts.
 - The MIAX PEARL PLF feed retransmission and refresh services are supported by a dedicated and mutually exclusive set of servers from those used for MIAX Options. However, the protocol and message formats for MIAX PEARL are very similar to those of MIAX Options for the retransmission and refresh services.

Q. Do I need to certify each application interface and feed before I can be provisioned to use them in production?

A. Firms wishing to utilize the following MIAX PEARL Liquidity Interfaces are required to contact the Trading Operations Help Desk to arrange for certification testing.

- MIAX PEARL Express Order Interface (MEO)
- MIAX PEARL FIX Order Interface (FOI)
- MIAX PEARL Clearing Trade Drop (CTD)
- MIAX PEARL FIX Drop (FXD)

MIAX PEARL does not require certification for firms subscribing to the MIAX PEARL market data feeds.

Q. How do I go about connecting to MIAX PEARL?

A. Firms wishing to connect to MIAX PEARL must contact the Trading Operations Help Desk to complete a connectivity questionnaire to get the process started.

Q. What are my connectivity options for connecting to MIAX PEARL?

A. The following connectivity options are available for MIAX PEARL:

- MIAX PEARL offers diverse latency equalized connectivity options in the primary data center:
 - 1 Gigabit Ethernet
 - 10 Gigabit Ethernet
 - 10 Gigabit Ultra Low Latency (ULL) Ethernet
- MIAX PEARL offers the following connectivity options in the disaster recover data center:
 - 1 Gigabit Ethernet
 - 10 Gigabit Ethernet
- MIAX PEARL supports the following connectivity options: Cross Connect, Point-to-Point, and Metro Ethernet/Dark Fiber.
- Users are strongly encouraged to establish dual connections to the primary facility in NY4 and to the disaster recovery system located in Chicago (CH4) to minimize the possibility of service disruption.

Q. Can I use the physical connections already established for MIAX Options to connect to MIAX PEARL?

A. Yes. MIAX's latency equalized Common Access Gateway provides firms with the option to use their existing MIAX Options cross connects to connect to MIAX PEARL. However, firms are advised to consider the bandwidth requirements of the combined feeds traversing their connections to ensure they are satisfactorily sized for the data flows.

Firms can establish new dedicated cross connects to MIAX PEARL as well if they choose. *Please see the [MIAX Connectivity Guide](#) for further information.*

Q. What are the bandwidth requirements for each of the MIAX PEARL Market Data Feeds and Liquidity Interfaces?

A. Bandwidth requirements are as follows:

- Market Data Feeds
 - The MIAX PEARL Top of Market Feed (ToM)
 - Requires a dedicated 10 GB or 10 GB ULL network connection
 - The MIAX PEARL Liquidity Feed (PLF)
 - Requires a dedicated 10 GB or 10 GB ULL network connection
- Liquidity Feeds
 - The MIAX PEARL Liquidity Feeds are:
 - MIAX PEARL Express Order Interface (MEO)
 - MIAX PEARL FIX Order Interface (FOI)
 - MIAX PEARL FIX Trade Drop (FXD)
 - MIAX PEARL Clearing Trade Drop (CTD)
 - The aggregate bandwidth of the MIAX PEARL Liquidity Feeds can be satisfied with a 1 GB connection for many firms. However, firms should assess their unique usage requirements to determine the connection type required to satisfy their needs.
 - Firms are encouraged to consider 10 GB and 10 GB Ultra Low Latency (ULL) as alternative since these connection technologies have inherent speed advantages over 1 GB connections.

Q. What are the MIAX PEARL Exchange Identifiers?

A. Exchange Codes:

- OPRA Participant ID “P”
- Market Identifier Code (MIC) “MPRL”
- OCC Code “R”

Q. What are the MIAX PEARL data Center options?

A. Primary Data Center:

- NY4 – Secaucus Road, Secaucus, New Jersey

Disaster Recovery Data Center:

- CH4 – Cermak Road, Chicago, Illinois