

ElectronX

Customer FIX Reference Guide

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Overview

Your organization has access to FIX gateways for connecting to the exchange. There are two types of containerized FIX gateway applications:

- **Market Data Gateway:** Provides access to real-time market data feeds
- **Order Entry Gateway:** Handles order submission, modification, cancellation, and drop copy sessions

Each gateway type operates on a dedicated port and supports one or more FIX sessions.

Connection Architecture

Network Connectivity

You will be provided with:

- **Primary IP Address:** Used for normal operations connecting to the primary region
- **Secondary IP Address:** Used only for disaster recovery when the primary region experiences an outage
- **Port Numbers:** Separate ports for Market Data Gateway and Order Entry Gateway (provided in your provisioning details)

Mutual TLS Authentication

All connections require mutual TLS authentication. You will receive a certificate package containing:

- Client certificate (.crt)
- Private key (.key)
- Certificate authority certificate (.crt)

These certificates provide access to ALL of your FIX sessions across both gateways. Keep these credentials secure.

Connection Process

- Configure your FIX client with the provided certificates for mutual TLS authentication
- Establish a secure tunnel to the Primary IP address
- Connect to the appropriate port for Market Data or Order Entry (see your provisioning details)
- Initiate FIX sessions using TargetCompID=EXI and your assigned SenderCompID values

Authentication

FIX Session Authentication

TargetCompID: All FIX sessions use EXI as the TargetCompID

SenderCompID: Each session is identified by a unique SenderCompID following specific naming conventions (see Session Configuration section)

Connection Limits: Each SenderCompID allows only one active connection at a time. If a second initiator attempts to logon while a session is active, the second connection will be disconnected.

FIX Session Types

Market Data Sessions

Purpose: Subscribe to real-time market data feeds

Gateway: Market Data Gateway

Association: Each session is associated with the Customer

SenderCompID Format: {LABEL}-MD{2-digit}

Example: POLARIS-MD01

Session Enumeration: Market data sessions are enumerated per customer. By default, each customer receives one market data session. Additional sessions can be allocated on request without provisioning extra compute resources. Multiple sessions allow you to distribute market data subscriptions across multiple TCP connections.

Order Entry Sessions

Purpose: Submit, modify, and cancel orders

Gateway: Order Entry Gateway

Association: Each session is associated with both a Trading Desk and a Clearing Member

SenderCompID Format: {TRADING_DESK_ID}-OE{2-digit}

Example: D-POLARIS-01-OE01

Session Enumeration: Order entry sessions are enumerated per trading desk.

Access Control: You can only use Trading Accounts on a session if the account matches BOTH: (1) The Trading Desk configured for the session, and (2) The Clearing Member configured for the session.

Use Cases for Multiple Sessions:

- Simple case (one trading desk, one clearing member): Multiple sessions allow distributing traffic across TCP connections
- Complex case (multiple trading desks): Multiple sessions provide entity isolation and access control

Drop Copy Sessions

Purpose: Receive real-time execution reports and order status updates (read-only)

Gateway: Order Entry Gateway

Association: Each session is associated with a Clearing Member

SenderCompID Format: {CLEARING_MEMBER_ID}-DC{2-digit}

Example: CM-POLARIS-DC01

Session Enumeration: Drop copy sessions are enumerated per clearing member.

Behavior: Upon connecting to a drop copy session, you immediately begin receiving execution reports for all trading activity within the scope of the associated Clearing Member.

Entity Model

The exchange uses a hierarchical entity model to represent customers and their trading relationships.

Entity Definitions

Customer: Root entity representing your organization. Has a unique 3-10 character label assigned during onboarding (e.g. POLARIS).

Clearing Member: Represents clearing and settlement relationship. Identified by CM-{LABEL}-{2-digit} (e.g., CM-POLARIS-01)

Collateral Account: Funding source owned by a Clearing Member. Identified by CA-{LABEL}-{5-digit} (e.g., CA-POLARIS-00001)

Exchange Participant: Represents trading relationship with the exchange and a Clearing Member.

Trading Desk: Organizational unit for trading activity. Identified by D-{LABEL}-{2-digit} (e.g., D-POLARIS-01)

Trading Account: Links a Trading Desk with a Collateral Account. Identified by TA-{LABEL}-{5-digit} (e.g., TA-POLARIS-00001). Each trading account is associated with a trading desk and collateral account that belong to the same customer organization.

User Authorization

Authorized Trading Users: Identified by email address and granted access on a per-trading-account basis. Each trading account has a list of Authorized Users who are permitted to submit orders on that account.

Session Configuration

Order Entry Session Parameters

Each order entry session can be configured with:

Rate Limits: Set on a per-session basis (e.g., 50 messages/second). Total throughput equals the sum across all sessions used simultaneously.

Cancel Policies: Three options available:

1. Cancel on Disconnect (CoD) - [DEFAULT]:

- *Trigger:* Loss of TCP connectivity while session is logged on
- *Behavior:* Cancels all open DAY orders; GTC orders continue to rest

2. Cancel on Logout (CoL):

- *Trigger:* Loss of TCP connectivity while session is logged on, or any session logout event, both client- and exchange-initiated
- *Behavior:* Cancels all open DAY orders; GTC orders continue to rest

3. No Cancellation: Orders remain working even if the session disconnects or is logged out

Trading Account Management

Account Access Rules

To use a Trading Account on an Order Entry session, you must verify:

- **Trading Desk Match:** The account's trading desk must match the session's configured trading desk
- **Clearing Member Match:** The account's collateral account must be owned by the clearing member configured for the session
- **User Authorization:** The user submitting orders (Tag 50) must be in the account's authorized user list

Drop Copy Coverage

Drop copy sessions provide visibility into all activity for a Clearing Member. All accounts using your clearing member's collateral accounts are covered by your clearing member's drop copy session.

Logon Requirements

Customers must configure their FIX client software to connect with correct session settings. All clients should initiate sessions using standard FIX v5 logon values:

- BeginString=FIXT.1.1
- DefaultApplVerID=9

Order Submission Requirements

Required FIX Tags

When submitting orders via Order Entry sessions, you MUST include:

Tag 1 (Account): The Trading Account ID

- Format: TA-{LABEL}-{5-digit}
- Example: TA-POLARIS-00001
- Must be authorized for the session you're connected to

Tag 50 (SenderSubID): The Authorized Trading User's email address

- Format: email address
- Example: john.smith@polaristrading.com
- Must be in the Authorized Trading User list for the specified account

Tag 582 (CustOrderCapacity): The Customer Order Capacity for this order

- Format: CTI code
- Example: 2

Examples

Example 1: Simple Organization

Company: Polaris Trading Group

Customer Label: POLARIS

Structure: One trading desk, one clearing member

Entities:

- Trading Desk: D-POLARIS-01 (Primary Trading Desk)
- Clearing Member: CM-POLARIS-01
- Collateral Accounts: CA-POLARIS-00001

- Trading Accounts: TA-POLARIS-00001

Sessions:

- Market Data: POLARIS-MD01
- Order Entry: D-POLARIS-01-OE01 (50 msg/sec, Cancel on Disconnect)
- Drop Copy: CM-POLARIS-DC01

Trading Accounts:

Account	Trading Desk	Collateral	Authorized Trading Users
TA-POLARIS-00001	D-POLARIS-01	CA-POLARIS-0001	john.smith@polaristrading.com, sarah.jones@polaristrading.com

Sample QuickFix Market Data Configuration File

```
[DEFAULT]
ConnectionType=initiator
TransportDataDictionary=spec/market.data.gateway/FIXT11.xml
AppDataDictionary=spec/market.data.gateway/FIX50SP2.xml

# Seqnum reset weekly on Sunday at 06:15 UTC
StartDay=Sunday
StartTime=06:15:00
EndDay=Sunday
EndTime=06:14:59
TimeZone=UTC

BeginString=FIXT.1.1
DefaultApplVerID=9

HeartBtInt=30
ReconnectInterval=60
ResetOnLogon=Y
LogonTimeout=30

SocketConnectPort=13001
SocketConnectHost=localhost

TargetCompID=EXI

[SESSION]
SenderCompID=POLARIS-MD01
```

Sample QuickFix Order Entry and Drop Copy Configuration File

```
[DEFAULT]
ConnectionType=initiator
TransportDataDictionary=spec/order.entry.gateway/FIXT11.xml
AppDataDictionary=spec/order.entry.gateway/FIX50SP2.xml

# Seqnum reset weekly on Sunday at 06:15 UTC
StartDay=Sunday
StartTime=06:15:00
```

```

EndDay=Sunday
EndTime=06:14:59
TimeZone=UTC

BeginString=FIXT.1.1
DefaultApplVerID=9

HeartBtInt=30
ReconnectInterval=60
ResetOnLogon=Y
LogonTimeout=30

SocketConnectPort=13101
SocketConnectHost=localhost

TargetCompID=EXI

# Order Entry
[SESSION]
SenderCompID=D-POLARIS-01-OE01
SenderSubID=john.smith@polaristrading.com
Account=TA-POLARIS-00001
CustomerOrderCapacity=2

# Drop Copy
[SESSION]
SenderCompID=CM-POLARIS-01-DC01

```

Example 2: Multiple Trading Desks

Company: Vega Trading Partners

Customer Label: VEGA

Structure: Two trading desks, one clearing member, single shared collateral account

Entities:

- Trading Desk 1: D-VEGA-01 (Hedging Desk)
- Trading Desk 2: D-VEGA-02 (Speculative Desk)
- Clearing Member: CM-VEGA-01
- Collateral Accounts: CA-VEGA-00001
- Trading Accounts: TA-VEGA-00001, TA-VEGA-00002

Sessions:

- Market Data: VEGA-MD01, VEGA-MD02
- Order Entry: D-VEGA-01-OE01 (50 msg/sec), D-VEGA-02-OE01 (75 msg/sec)
- Drop Copy: CM-VEGA-01-DC01

This configuration allows the organization to isolate trading activity by desk while maintaining centralized clearing.

Sample QuickFix Order Entry and Drop Copy Configuration File

```

[DEFAULT]
ConnectionType=initiator
TransportDataDictionary=spec/order.entry.gateway/FIXT11.xml
AppDataDictionary=spec/order.entry.gateway/FIX50SP2.xml

```

```

# Seqnum reset weekly on Sunday at 06:15 UTC
StartDay=Sunday
StartTime=06:15:00
EndDay=Sunday
EndTime=06:14:59
TimeZone=UTC

BeginString=FIXT.1.1
DefaultApplVerID=9

HeartBtInt=30
ReconnectInterval=60
ResetOnLogon=Y
LogonTimeout=30

SocketConnectPort=13101
SocketConnectHost=localhost

TargetCompID=EXI

# Order Entry - Hedging Desk
[SESSION]
SenderCompID=D-VEGA-01-OE01
SenderSubID=jbond@vegapartners.com
Account=TA-POLARIS-00001
CustomerOrderCapacity=2

# Order Entry - Speculative Desk
[SESSION]
SenderCompID=D-VEGA-02-OE01
SenderSubID=jbourne@vegapartners.com
Account=TA-VEGA-00002
CustomerOrderCapacity=2

# Drop Copy
[SESSION]
SenderCompID=CM-VEGA-01-DC01

```

Example 3: Multiple Sessions Per Trading Desk

Company: Altair Capital Trading

Customer Label: ALTAIR

Need: High throughput trading requiring multiple TCP connections

Entities:

- Trading Desk: D-ALTAIR-01 (High Frequency Trading)
- Clearing Member: CM-ALTAIR-01

Sessions:

- Market Data: ALTAIR-MD01, ALTAIR-MD02
- Order Entry: D-ALTAIR-01-OE01 (50 msg/sec), D-ALTAIR-01-OE02 (50 msg/sec)
- Drop Copy: CM-ALTAIR-01-DC01

Total throughput: 100 messages/second across two order entry sessions. The trading desk can distribute order flow across both sessions, with all trading accounts accessible on both sessions (same trading desk and clearing member).

Support

For connection issues, configuration questions, or to request changes:

- **Email:** support@electronx.com
- **Technical Support Hotline:** 312-620-4791