CME MDP 3.0 Market Data

ⓘ CME Group internal testing in the Production environment can occur during the weekend. Any trades or market data generated during these tests should be disregarded.

As a reminder, clients can connect to CME Globex services beginning at 10:30 am CT Sundays to prepare for weekly start-up. Clients should ensure all services are disconnected by 5:00 pm. CT Fridays to avoid receiving internal test data.

See Also

- MDP 3.0 - Simple Binary Encoding
- MDP 3.0 - Dissemination
- MDP 3.0 - Market Data Messaging Concepts
- MDP 3.0 - Trade Summary
- MDP 3.0 - Book Management
- MDP 3.0 - Statistics
- MDP 3.0 - Recovery
- MDP 3.0 - Conflated TCP Market Data Group for BrokerTec
- MDP 3.0 - Message Specification

- BrokerTec on CME Globex Market Functionality

This page describes CME MDP 3.0 market data messaging and the concept of event-driven messaging.

Use this search box to search the MDP 3.0 market data page tree.

The CME Group Market Data Platform (MDP) disseminates event-based bid, ask, trade, and statistical data for CME Group markets and also provides recovery and support services for market data processing.

MDP 3.0 includes the introduction of Simple Binary Encoding (SBE) and Event Driven Messaging to the CME Group Market Data Platform.

Simple Binary Encoding (SBE) is based on simple primitive encoding, and is optimized for low bandwidth, low latency, and direct data access.

SBE and event-driven messaging provide:

- Independence between number of events, messages, and packets, including:

    - Multiple messages per packet

    - A single event over multiple packets. Each packet contains a complete message as defined by the FIX specification, which allows client systems to start processing the message once the first packet is received.

- Fixed-length fields, which allow direct data access to fields in the message based on offsets and eliminate the need to parse entire messages.

Event Driven Messaging

Events can result from activities such as: Order Entry/Acceptance, Market State Changes, Start of Week Book Population, Channel Resets and Recovery, and Statistics Generation.

As market events occur, messages are sent in the real-time market data feed in packets containing FIX messages.

- Event-based market data is sequential per event (i.e., all messages for Event 1 will be processed and sent before any messages for Event 2 are processed and sent).
- A single event will be represented by a series of FIX messages sent per market data entry type, and the end of each event will be indicated in the last message for that event.
- Messages within an event will be disseminated in a specific order by market data entry type. Each message will include an indicator which identifies whether there is more information for that type of message in the following packet(s).

Click a link in the diagram to jump to that topic.

MDP 3.0 Features for Futures and Options and BrokerTec Markets on CME Globex

The table below outlines the MDP 3.0 features available for CME Globex futures and options markets and BrokerTec markets.

*Conflation is for BrokerTec only.

MDP 3.0 Service /Feature	CME Globex Futures and Options		BrokerTec on CME Globex			
	Supported	Description	MDP Premium Support	* Conflated UDP Support	* Conflated TCP Support	Description
Simple Binary Encoding (SBE)	✅	Protocol for decoding and encoding messages in binary format.	✅	✅	✅	Protocol for decoding and encoding messages in binary format.

Event Based Market Data Messaging	✅	**Event Based** - market data generated by **order activity** and **market state** events	✅	✅	✅	**Event Based** - market data generated by **order activity** and **market state** events. Additional examples of event processing for conflated feeds can be found in Conflated Market Data Processing.
Trade Summary	✅	Trade and trade-driven market data	✅	✅	✅	Trade and trade-driven market data. Additional examples of Trade Summary messages for conflated feeds can be found in Conflated Market Data Processing.
Request for Quote	✅	Sent to the market to request a quote for the given instrument	✅	✅	✅	Sent to the market to request a quote for the given instrument. Only available for U.S. Active channels (490, 500, and 510) and EGB channels (492, 502, and 511).
Book Management						
Market by Price (MBP)	✅	CME Group provides a multiple-depth Market by Price (MBP) book for most products.	✅	✅	✅	CME Group provides a multiple-depth Market by Price (MBP) book for most products. BrokerTec on CME Globex supports Inverted Price Book Processing.
Implied Book Processing and **Implied Book Consolidation**	✅	CME Group provides a 2-deep best bid and ask in the market for each implied-eligible contract	✅ US Actives only (channel 490)	✅ US Actives only (channel 500)	✅ US Actives only (channel 510)	CME Group provides a 2-deep best bid and ask in the market for each implied-eligible contract. BrokerTec U.S. Active channels (490, 500, and 510) support implied book order functionality.
Market by Order - Full Depth (MBOFD)	✅	CME Globex Market by Order (MBO) disseminates individual orders and quotes at every price level for the given instrument.	✅	❌	❌	CME Globex Market by Order (MBO) disseminates individual orders and quotes at every price level for the given instrument. See also: MDP 3.0 - Incremental Refresh SBE Template Book Processing
Market By Order - Limited Depth (MBOLD) Book Processing	❌	N/A	✅	✅	✅	MBOLD sends the top 10 bid and ask orders on an order book for a given instrument. For BrokerTec MBOLD uses an overlay approach to book management that completely restates the MBOLD book with each new Market Data Snapshot Full Refresh message.
Inverted Price Book Processing	❌	N/A	✅	✅	✅	BrokerTec on CME Globex supports inverted pricing for yield, rate, or Repo trading for MBOFD, MBOLD and MBP books. Inverted books have bid prices higher than offers.
Mid-Session Order Quantity Update	❌	N/A	✅	✅	✅	Brokertec US and EU Repo only
All-Or-None Processing	❌	N/A	✅	✅	✅	Available for REPO only.
Bilateral Trading Relationship Processing	❌	N/A	✅	✅	✅	Bilateral trading allows permissioned firms to trade with other permissioned firms for the given bilateral product
Statistics						
Opening Price	✅	The Opening Price represents the first trade for the opening or re-opening of the instrument.	✅	✅	✅	Same as F&O

			US Actives only (channel 490)	US Actives only (channel 500)	US Actives only (channel 510)	
Indicative Opening	✅	Indicative opening indicates the price and quantity at which the market would open were the market to open at the given point in time.	✅ US Actives only (channel 490)	✅ US Actives only (channel 500)	✅ US Actives only (channel 510)	Indicative opening indicates the price and quantity at which the market would open were the market to open at the given point in time. Only U.S. Active channels (490, 500, and 510) will support indicative opening functionality. The 'Last Trade Price from prior session' is the tie-breaker rule to calculate the Indicative Opening Price instead of the settlement price on CME Globex futures and options channels.
Session High and Low Trade Price	✅	The High Trade Price data block is sent when a trade occurs which results in the highest trade price for the current session. Likewise, the Low Trade Price data block is sent when a trade occurs which results in the lowest trade price for the current session.	✅	✅	✅	Same as F&O
Session Statistics Reset	✅	Statistics are sent on the Incremental Feed as they occur throughout a trading session. Certain statistics are also made available on the Market Recovery Feed with the Market Data Snapshot Full Refresh.	✅	✅	✅	Same as F&O
Electronic Volume	✅	Electronic volume represents the number of contracts traded on CME Globex for the given instrument for the trading session.	✅	✅	✅	Same as F&O
High Bid and Low Ask	✅	The high bid and low ask prices are used to indicate the highest bid and lowest ask prices of the session	❌	❌	❌	N/A
Cleared Volume	✅	Cleared Volume data blocks contain the number of contracts that have been through the clearing process for an active instrument for the previous trading day.	❌	❌	❌	N/A
Fixing Price	✅	A volume-weighted average price for the nearby futures contract	❌	❌	❌	N/A
Open Interest	✅	The total number of contracts per instrument that are not yet offset or fulfilled for the previous trading day.	❌	❌	❌	N/A
Settlement Price	✅	Settlement is an official CME Group price established for the instrument at a given point in the trading day. CME Group staff determines the daily settlements for all contracts with volume or open interest.	❌	❌	❌	N/A
Recovery						
UDP Multicast Recovery Services	✅	Large-scale data recovery (e.g. major outage or late join) to synchronize client order books with the current state maintained by CME Group.	✅	✅	❌	Same as F&O
Conflated TCP Market Recovery	❌	N/A	❌	❌	✅	Recovery for conflated TCP systems.