BMLL Data Feed

Level 2 Quotes - Futures

Date: 2025-11-18
Version: 1.4

1.1. Introduction

The Level 2 quotes dataset offers a tick-by-tick view of the order book, aggregated by price level with up to 10 levels of depth. It provides an in-depth understanding of historical market activity, enabling users to make more informed trading decisions.

1.2. Dataset schema

Basic Types

Type	Content	Text representation
BOOLEAN	A True or False boolean value.	1,0
INT32	A 32 bit signed integer.	12345
INT64	A 64 bit signed integer.	12345
DOUBLE	IEEE 64-bit floating point value.	123.4567
BYTE_ARRAY	An arbitrarily long byte array.	"VODAFONE GROUP"
NUMBER	A number with defined precision (total digits allowed) and scale (number of digits allowed to the right of the decimal point). Unless otherwise specified, the default is precision 38 and scale 0.	12345
VARCHAR	Variable length string up to 500 characters. May contain quotes and special characters. All text will be utf8-encoded unless indicated differently. Ticker and ISO codes should be ASCII compatible.	"VODAFONE GROUP"
TIMESTAMP_NTZ	Nanoseconds since 1970 in UTC. Timestamp will be represented in ISO format in text format.	20220302-11:23.57.12345789
FLOAT	IEEE 64-bit floating point value.	123.4567
DATE	A calendar date consisting of a year, month, and day, without including any time or time zone components.	2025-01-01

1.3. Schema

One row in the dataset corresponds to a single, atomic event during the trading day. Where the exchange explicitly provides events, only the final states of the event will be provided.

Field Name	Type	Description
MIC	BYTE_ARRAY	The Market Identifier Code (MIC) is used to uniquely identify the exchange for which the L2-book is reconstructed.
Ticker	BYTE_ARRAY	The original ticker as provided by the exchange.
ListingId	INT64	The BMLL Listing Id for the instrument
InstrumentId	INT64	The BMLL Instrument Id for the instrument
ProductCode	BYTE_ARRAY	Product Code as supplied by the exchange.
ContractType	BYTE_ARRAY	Normalised Type of the Listing. Mappings are provided per dataset. Can take values: • • Outright • Spread • Inter Exchange • Inter Product Spread • Pack and Bundle • Strip • Butterfly • Condor • Other • Unknown
MaturityMonthYear	BYTE_ARRAY	The month and year on which the Listing matures, in format YYYYMM.
CurrencyCode	BYTE_ARRAY	The currency of the order book information as provided by the exchange.
Date	INT32	The date on which a trade was executed - the date is derived from the Local_Timestamp.
EventTimestamp	INT64	The date and time at which the update occurred, in the UTC timezone, with microsecond precision.
LocalTimestamp	INT64	The date and time at which the update occurred, in the timezone of the primary record associated with the venue, with microsecond precision.

Field Name	Type	Description
TimestampNanoseconds	INT64	This column contains a representation of the time of the update as the number of nanoseconds since 1970-01-01 00:00:00.0 UTC.
TZOffset	INT32	The offset between the local timestamp and UTC in seconds. Note: This is based on the original listing location of the primary instrument. Format was +/- HHMM . This will be adjusted during the DST if such a change occurs.
Core MBP fields (Price levels 1-10 are available)		
BidPrice[1-10]	DOUBLE	The price of the price level on the bid side in the defined currency (see CURRENCY_CODE)
BidSize[1-10]	INT64	The number of shares submitted at the price level on the bid side
BidSizeImplied[1-10]	INT64	The number of shares submitted at the price level on the bid side that are due to implied orders
BidNumOrders[1-10]	INT32	The number of distinct orders submitted at the price level on the bid side
AskPrice[1-10]	DOUBLE	The price of the price level on the ask side in the defined currency (see CURRENCY_CODE)
AskSize[1-10]	INT64	The number of shares submitted at the price level on the ask side
AskSizeImplied[1-10]	INT64	The number of shares submitted at the price level on the ask side that are due to implied orders
AskNumOrders[1-10]	INT32	The number of distinct orders submitted at the price level on the ask side
Additional fields		
BidLevelCount	INT32	Number of bid levels populated
AskLevelCount	INT32	Number of ask levels populated
MarketState	BYTE_ARRAY	Market state of the venue. See below for possible values.
ExchangeSequenceNo	INT64	The sequence number of the event, if provided by the exchange.
BMLLSequenceSource	INT64	The source of the sequence number. Used if there is more than one feed, for example where there are off book and on book trade messages provided by different feeds.
BMLLSequenceNo	INT64	A synthetic sequence number as provided by BMLL. This ensures the correct ordering of all messages from a particular source and should be used as the standard to sort and join all messages.

1.4. Market State Normalisation

BMLL provides a consistent normalisation for market state messages, in order to make cross-venue analysis quick and easy.

The following normalisation states are available

Market State

Value	Description
AUCTION_ON_DEMAND	Auctions which take place alongside CONTINUOUS_TRADING. Includes order entry and uncrossing periods.
CLOSED	The market is closed so no trading activity can take place.
CLOSING_AUCTION	Includes order entry and uncrossing periods.
CONDITIONAL	An uncrossing state for specific market mechanisms e.g. Turquoise Plato Uncross.
CONTINUOUS_TRADING	Main continuous trading session in which orders can be placed and matched. NOTE: Separate continuous trading occurring before the primary open or after close will be generally indicated with PRE_TRADE and POST_TRADE.
CONTINUOUS_TRADING_PRIMARY_CLOSED	A continuous trading session in which orders can be placed and matched on secondary markets, but the primary market is CLOSED. Used for secondary markets only (e.g. a multilateral trading facility in the EU, or alternative trading system in the USA).
HALTED	Unscheduled trading halts, for example, when a circuit breaker is triggered.
INTRADAY_AUCTION	Scheduled auctions which interrupt CONTINUOUS_TRADING. Includes order entry and uncrossing periods.
NOT_APPLICABLE	Used for venues such as trade reporting facilities where the concept of market phase does not apply, as there are no specific market hours.

Value	Description
OPENING_AUCTION	Includes order entry and uncrossing periods.
POST_TRADE	Market phase following CONTINUOUS_TRADING phase, and generally occurring after the primary CLOSING_AUCTION. This includes trade-at-last phases; such trades can be distinguished using the CLOSING_PRICE bmll_trade_type.
PRE_OPEN	Market phase preceding CONTINUOUS_TRADING, and generally prior to OPENING_AUCTION when applicable.
UNKNOWN	Used when the market phase could not be resolved into one of the known states listed here.
UNSCHEDULED_AUCTION	Unscheduled auctions which interrupt CONTINUOUS_TRADING. Includes order entry and uncrossing periods.

1.5. File format and delivery structure

Data is delivered as a single file per market per date, as a parquet file.

- **{YYYY}:** Year
- **{MM}:** Month
- **{DD}:** Date
- **{Product}:** The product you are subscribing
    - **Level 2 Quotes:** LEVEL2Q
- **{Region}:** The region of the venue, such as APAC, AMERICAS, EMEA and GLOBAL
- **{MIC}:** Market Identifier Code (MIC) is a unique four-character code that identifies stock markets and exchanges for trading and referencing computer systems

File Structure:

{YYYY}/{MM}/{DD}/LEVEL2Q/{Region}/future-l2-{MIC}-YYYYMMDD.parquet

1.6. Implied price levels

Where implied price information is provided by the exchange, this will be included in the dataset. Since implied information is only provided on a price level basis, rather than as individual orders, any implied prices are not included in the NumOrders fields.

1.7. Trading dates

For continuous trading markets, the trading date is determined in a standard way as provided by the exchange. For example, for CME, each file is divided into trading starting at 4.45pm Chicago on the previous date (i.e from after the CME maintenance window).

1.8. Data arrival times and coverage

Full product coverage and arrival times are available at https://data.bmlltech.com.