Cboe DataShop

Option Quotes Specification

1-minute or custom interval summaries including NBBO with size, OHLC prices, and trade volumes along with optional open interest, exchange-level BBO, and Calcs data (implied volatilities and Greeks)

Coverage:

- Options on U.S. listed Stock, ETFs, and Indices disseminated over the Options Price Reporting Authority (OPRA) market data feed
- Note: Options on Futures & non-U.S. markets are not supported

Filename pattern:

Historical orders:

- Order with Calcs included: UnderlyingOptionsIntervals_xxxxsec_calcs_oi_YYYY-MM-DD.zip (Zipped CSV)
- Order with Calcs excluded: UnderlyingOptionsIntervals_xxxxsec_YYYY-MM-DD.zip (Zipped CSV)

Subscription orders:

Overnight delivery:

- Order with Calcs included: UnderlyingOptionsIntervals_xxxxsec_calcs_oi_YYYY-MM-DD.zip (Zipped CSV)
- Order with Calcs excluded: UnderlyingOptionsIntervals_xxxxsec_YYYY-MM-DD.zip (Zipped CSV)

Intraday delivery:

- Order with Calcs included: UnderlyingOptionsIntervalsCalcs_xxxxsec_YYYY-MM-DD_HHMI.zip (Zipped CSV)
- Order with Calcs excluded: UnderlyingOptionsIntervals_xxxxsec_YYYY-MM-DD_HHMI.zip (Zipped CSV)

Fields:

For quotes, the bid and ask is a snapshot of the National Best Bid and Offer (NBBO) at that time. For trade-related fields (Volume, OHLC) values reflect trades made after the prior interval record up until the current record time stamp.

Column Label	Data Type	Description
underlying_symbol	string	The underlying stock or index. An index will utilize a caret (^) prefix, i.e. ^NDX,^SPX,^VIX…etc. Underlyings with classes may utilize a dot (.) instead of a slash or space, i.e. BRK.B, RDS.A, RDS.B
quote_datetime	datetime	End of interval timestamp: yyyy-mm-dd hh:mm:ss. Timestamp is in US Eastern time.
root	string	The option trading class symbol
expiration	date	The expiration date of the option: yyyy-mm-dd
strike	numeric	The exercise/strike price of the option
option_type	string	C for Call options, P for Put options
open	numeric	The trade price of the first trade in the interval (zero if no trades occurred or trade condition not eligible to update OHLC)

Column Label	Data Type	Description
high	numeric	The highest trade price in the interval (zero if no trades occurred or trade condition not eligible to update OHLC)
low	numeric	The lowest trade price in the interval (zero if no trades occurred or trade condition not eligible to update OHLC)
close	numeric	The trade price of the last trade in the interval (zero if no trades occurred or trade condition not eligible to update OHLC)
trade_volume	integer	The total option contracts traded in the interval on the date
bid_size	integer	The largest size from an options exchange participant on the best bid price (NBB)
bid	numeric	The best bid price (NBB) at the interval time stamp
ask_size	integer	The largest size from an options exchange participant on the best offer price (NBO)
ask	numeric	The best offer price (NBO) at the interval time stamp
underlying_bid	numeric	The best bid price for the underlying at the interval time stamp
underlying_ask	numeric	The best offer price for the underlying at the interval time stamp
implied_underlying_price[1]	numeric	This field is deprecated, it will be defaulted to 0 (zero)
active_underlying_price[1]	numeric	The underlying price used in the calculation model
implied_volatility[1]	numeric	Option implied volatility
delta[1]	numeric	Option delta
gamma[1]	numeric	Option gamma
theta[1]	numeric	Option theta
vega[1]	numeric	Option vega
rho[1]	numeric	Option rho
open_interest	integer	The start-of-day (SOD) open interest from the Options Clearing Corporation (OCC)

1. *Only orders with a selection to include Calcs will contain these fields. The columns are not present in orders without calcs selected.*

Notes

- *Implied volatility will be zero in cases where the calculation model did not have sufficient input data (i.e. no quoted markets), the option price was below intrinsic value, or the implied volatility exceeded the acceptable upper limit.*
- *Underlying Bid and Ask will be zero if there was no disseminated quote in the source feed. Most indices will not have an underlying bid/ask, nor will underlyings on the OTC market.*
- *Data may be excluded/zero for the ^SPX July 19, 2021 expiry on the trading date of June 21, 2021. The expiry was an unscheduled add done at approximately 14:04PM US Eastern on 2021-06-21. During both quote scans at 15:45 and market close for this expiry, all series' quotes were absent.*