PILLAR OPTIONS COMPLEX CLIENT SPECIFICATION

NYSE ARCA OPTIONS COMPLEX FEED
NYSE AMERICAN OPTIONS COMPLEX FEED

Version	Date
1.0a	June 21, 2021

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PREFACE

DOCUMENT HISTORY

The following table provides a description of all changes to this document.

VERSION NO.	DATE	CHANGE DESCRIPTION
1.0	March 5, 2021	Added complex series support for NYSE Arca and American Options
1.0a	June 21, 2021	Added ProductID section to specification Added SourceTime field trades and rfq message Updated TradeCond1 value ‘l’ (el) to value ‘I’ (eye) Changed Capacity from Binary to ASCII format

REFERENCE MATERIAL

The following lists the associated documents, which either should be read in conjunction with this document or which provide other relevant information for the user:

- IGN Information
- NYSE Symbology
- IP Addresses

CONTACT INFORMATION

- Connectivity connectivity@nyse.com
- Telephone: +1 212 896-2830

FURTHER INFORMATION

- For additional information about the product, visit the PILLAR COMPLEX Feed Product Page
- For updated capacity statistics, visit the Capacity page.

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1. INTRODUCTION

This real-time low latency product provides top of book quote, trades and RFQ all traded complex series on the respective NYSE Options exchanges. All message types are identical in format to their equivalents in the Top feed. This data is intended for clients who require a direct, unconsolidated feed and timestamps provided directly from the Exchange matching engines.

1.1 PUBLICATION TIMES

Please refer to the market open pre-opening, early trading, core trading and late trading session times on:

https://www.nyse.com/markets/hours-calendars

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2. CONTROL MESSAGE TYPES USED IN THE DATA FEEDS

See the Pillar Common Client Specification for details on all control messages.

MSGTYPE	DESCRIPTION
1	Sequence Number Reset
2	Time Reference Message
3	Symbol Index Mapping
10	Retransmission Request Message
11	Request Response Message
12	Heartbeat Response Message
13	Symbol Index Mapping Request Message
15	Refresh Request Message
31	Message Unavailable
32	Symbol Clear
34	Security Status Message
35	Refresh Header Message
50	Outright Series Index Mapping
51	Options Status Message
60	Complex Series Index Mapping

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3. COMPLEX MESSAGES

3.1 Options Quote Message – Msg Type 340

The Complex Quote message is a two-sided message providing best bid and offer limits of orders on complex symbols with aggregated volumes at each limit. The message also indicates aggregated Customer volumes within the overall volumes. The values published in Options Quote message to Pillar (prices, quantities, quote conditions) shall be the same as the ones published in Quote message to OPRA.

See the Pillar Common Client Specification for details on Symbol/Series Index and Time Reference messages.

FIELD NAME	OFF SET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 42 bytes
Msg Type	2	2	Binary	The type of message: 340 – Options Quote Message
SourceTimeNS	4	4	Binary	The nanosecond offset (UTC Time) from the Time Reference message.
SeriesIndex	8	4	Binary	The unique ID of this series within this market.
SeriesSeqNum	12	4	Binary	The series sequence number.
Ask Price	16	4	Signed Binary	The Ask price. A positive value is implicit (no sign), a negative value is indicated by a negative sign. Use the Price scale from the Series Index message. For Complex Series: A positive Buy price indicates the Buyer is proposing to pay money for the order. Inversely, a negative Buy price indicates that the Buyer is proposing to receive money for the order. A positive Sell price indicates the Seller is proposing to receive money for the order. Inversely, a negative Sell price indicates that the Seller is proposing to pay money for the order.
Ask Volume	20	4	Binary	Total quantity available at the above Ask price
Bid Price	24	4	Signed Binary	The Bid price. A positive value is implicit (no sign), a negative value is indicated by a negative sign. Use the Price scale from the Series Index message.

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FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
				For Complex Series: A positive Buy price indicates the Buyer is proposing to pay money for the order. Inversely, a negative Buy price indicates that the Buyer is proposing to receive money for the order. A positive Sell price indicates the Seller is proposing to receive money for the order. Inversely, a negative Sell price indicates that the Seller is proposing to pay money for the order.
Bid Volume	28	4	Binary	Total quantity available at the above Bid price.
Quote Condition	32	1	ASCII	**All markets** ▪ 1 – Regular Trading ▪ 3 – Trading Halted
Reserved	33	1	ASCII	Reserved for future use
AskCustomerVolume	34	4	Binary	*Total quantity of customer orders at the Ask price
BidCustomerVolume	38	4	Binary	*Total quantity of customer orders at the Bid price

*For American, customer volume includes non-professional customers only

*For Arca, customer volume includes non-professional and professional customers

3.2 Options Trade Message – Msg Type 320

The Options Trade Message is used to publish the complex Last Sales.

All trades are reported to Pillar regardless of quantity, with the following exceptions:

a. Cabinet trades
b. Flex trades
c. Trades at away exchanges for any routed interest; are not reported to Pillar

See the Pillar Common Client Specification for details on Symbol/Series Index Mapping messages.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 36 bytes
Msg Type	2	2	Binary	The type of message:

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FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
				320 – Options Trade Message
SourceTime	4	4	Binary	The time when this msg was generated in the order book, in seconds since Jan 1, 1970 00:00:00 UTC.
SourceTimeNS	8	4	Binary	The nanosecond offset (UTC Time) from the Time Reference message.
SeriesIndex	12	4	Binary	The unique ID of this series within this market.
SeriesSeqNum	16	4	Binary	The series sequence number.
TradeID	20	4	Binary	Unique identifier for this trade.
Price	24	4	Signed Binary	The price of the Trade is the net amount money made by the Buyer. A positive value is implicit (no sign), a negative value is indicated by a negative sign. Use the Price scale from the series index mapping.* *When a complex instrument is traded: The seller • Sells the legs with Side = B and • Buys the legs with Side = S The buyer • Buys the legs with Side = B and • Sells the legs with Side = S
Volume	28	4	Binary	The volume of the trade in contracts.
TradeCond1	32	1	ASCII	Settlement related conditions. Valid values: • “a” – outright series order/quote trading electronically with a outright series CUBE Exposed order or outright series CUBE Exposed order trading electronically with outright series • “c” – trading of a outright series QCC order • “e” – outright series floor trade • “I” – all outright series electronic trades (excluding away market executions) that were not part of the following transactions: ○ Outright series CUBE

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FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
				○ Outright series QCC ○ Complex order trading electronically with the outright series orders/quotes ○ ISO trade • "S" – all outright series trades that are generated as part of an Intermarket Sweep order • "D" = any of the above published after 90 seconds of occurring • "f" = complex order trades that were not part of the following transactions ○ Complex CUBE ○ Complex QCC ○ Complex order trading electronically with the outright series orders/quotes • "g" = complex order trading electronically with a complex CUBE Exposed order or complex CUBE Exposed order trading electronically with Complex CUBE Covered order • "h" = trading of a complex QCC order • "i" = complex order to complex order floor trade • "j" = complex order trading electronically with the outright series orders/quotes • "m" = complex order to outright series order floor trade • "p" = complex order with stock to complex order with stock floor trade • "s" (lowercase) = complex order with stock to outright series order floor trade
Reserved	33	1	ASCII	Reserved for future use
Reserved	34	1	ASCII	Reserved for future use
Reserved	35	1	ASCII	Reserved for future use

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3.3 Series RFQ Message - Msg 307

The Request for Series RFQ message is a pass-through message from the matching engine and is published for both Outright series and Complex series. It is sent out in the event of a COA auction or a CUBE auction on complex orders.

See the Pillar Common Client Specification for details on Symbol/Series Index Mapping messages and Price field format.

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FIELD NAME	SIZE	FORMAT	DESCRIPTION
Msg Size	2	Binary	Size of the message: 44 bytes
Msg Type	2	Binary	The type of message 307 - Series RFQ Msg
SourceTime	4	Binary	The time when this msg was generated in the order book, in seconds since Jan 1, 1970 00:00:00 UTC.
SourceTimeNS	4	Binary	The nanosecond offset (UTC Time) from the Time Reference message.
SeriesIndex	4	Binary	The unique ID of this series within this market.
SeriesSeqNum	4	Binary	The sequence number of this message in the set of all messages for this series
Side	1	ASCII	Side of the RFQ* B = Buy S = Sell *When a complex instrument is traded The seller • Sells the legs with Side = S and • Buys the legs with Side = B The buyer • Buys the legs with Side = S and • Sells the legs with Side = B
Type	1	ASCII	Order Type of CUBE/COA/BOLD P = Price Improvement F = Facilitation S = Solicitation B = Bold (Outright only) C = COA (Complex only)

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Capacity	1	ASCII	Customer or Firm capacity specified with the order. Values include: • (blank) = information not specified • 0 = Customer • 1 = Firm • 2 = Broker Dealer • 3 = Market Maker • 8 = Professional Customer Note: This field is only used for BOLD.
Total quantity	4	Binary	Total quantity
Working Price	4	Signed Binary	RFQ Price for CUBE/COA
Participant	4	Binary	OCC number for the Clearing firm specified with the order Blank = No OCC number was specified Note: This field is used for BOLD only
AuctionID	8	Binary	Auction ID for CUBE/COA
RFQ Status	1	Binary	O - Start of RFQ Auction Q - End of RFQ Auction

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4. PRODUCT ID

EXCHANGE	PRODUCT ID	DESCRIPTION
NYSE ARCA Options	163	NYSE ARCA COMPLEX

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