# PILLAR OPTIONS TOP CLIENT SPECIFICATION

**NYSE ARCA OPTIONS TOP FEED**

**NYSE AMERICAN OPTIONS TOP FEED**

| Version | Date |
| --- | --- |
| 1.2h | November 15, 2024 |

# PREFACE

## DOCUMENT HISTORY

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

| VERSION NO. | DATE | CHANGE DESCRIPTION |
|---|---|---|
| 1.0 | Nov 10, 2020 | Added outright series support for NYSE Arca and American Options |
| 1.1 | Mar 5, 2021 | Added complex series support for NYSE Arca Options |
| 1.2 | Jun 2, 2021 | Added TradeCond2 and TradeCond4 to trade message |
| 1.2a | June 21, 2021 | Added ProductID section to specification<br>Added SourceTime field to trades, summary and imbalance/rfq messages<br>Updated TradeCond1 value 'l' (el) to value 'I' (eye)<br>Updated Capacity field from Binary to ASCII format |
| 1.2b | Sept 30, 2021 | Updated Side description on RFQ Message (Msg 307)<br>Updated RFQ Status in RFQ Message (Msg 307) from binary to ASCII<br>Updated RFQ Capacity value with '' -- N/A (space or 0x20) |
| 1.2c | Mar 21, 2022 | Updated logo - NYSE Re-branding |
| 1.2d | Nov 16, 2022 | Updated Section 3.5 - imbalance publication frequency modified to every 5 seconds (previously every second) - Msgtype 305. |
| 1.2e | May 8, 2023 | Added Product IDs for NYSE American Options<br>Minor language clarifications |
| 1.2f | Oct 1, 2023 | Updated 'Capacity' field values for MsgType 307 to include '5' - Away Market Maker |
| 1.2.g | Feb 22, 2024 | Clarified TradeCond1 field values for MsgType 320 |
| 1.2h | Nov 15, 2024 | Updated support contact information |

## 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

- Support support@nyse.com
- Telephone: +1 212 896-2830

## FURTHER INFORMATION

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

## Contents

# 1. INTRODUCTION

This real-time low latency product provides top of book quote, trades, RFQ and imbalance data for all traded series on the respective NYSE Options exchanges. This data is intended for clients who require a direct, unconsolidated feed and timestamps provided directly from the Exchange matching engines.

- ***BBO*** - This real-time low latency product provides top of book quote data for all traded series on the respective NYSE Options exchanges. This data is intended for clients who require a direct, unconsolidated feed and timestamps provided directly from the Exchange matching engines.
- ***TRADES*** - This real-time high performance product provides trade data for all traded series on respective NYSE Options market.  This trade data is intended for trading applications which require a direct feed with timestamps representing matching engine event times.
    - For each market, bundling mirrors publications to the OPRA.
        - For continuous trading at NYSE Options markets, each 2-sided execution even in the same event results in the publication of a separate Trade message. All auction prints are unbundled.
- **RFQs** - This real-time time high performance product provides request for quote data for Outright RFQ
- ***IMBALANCES*** - This real-time time high performance product provides imbalance data published during opening and reopening auctions of all traded series on this options exchanges.

## 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](https://www.nyse.com/markets/hours-calendars)

# 2. CONTROL MESSAGE TYPES USED IN THE DATA FEEDS

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

| MSG TYPE | 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 |

# 3. TOP MESSAGES

## 3.1 Options Quote Message – Msg Type 340

An Options quote message is sent when any event results in a new top of book value on either side of the market.

The values published in Options Quote message from 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:<br>• 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. Use the Price scale from the Series Index message. |
| **Ask Volume** | 20 | 4 | Binary | Total quantity available at the above Ask price |
| **Bid Price** | 24 | 4 | Signed Binary | The Bid price. Use the Price scale from the Series Index message. |
| **Bid Volume** | 28 | 4 | Binary | Total quantity available at the above Bid price. |
| **Quote Condition** | 32 | 1 | ASCII | All markets<br>• 1 – Regular Trading<br>• 2 – Rotation<br>• 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

An Options Trade message is sent when there is an execution on the order book.

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

a. Cabinet trades
b. Flex trades
c. Trades at away exchanges for any routed interest

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:<br>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. Use the Price scale from the series index mapping. |
| **Volume** | 28 | 4 | Binary | The volume of the trade in contracts. |
| **TradeCond1** | 32 | 1 | ASCII | Settlement related conditions. Valid values:<br>• "a" – outright series order/quote trading electronically with a outright series CUBE order or outright series CUBE order trading electronically with outright series CUBE Contra order<br>• "c" – trading of a outright series QCC order<br>• "e" – outright series floor trade<br>• "I" – all outright series electronic trades (excluding away market executions) that were not part of the following transactions:<br>  ○ Outright series CUBE auction<br>  ○ Outright series QCC<br>  ○ Complex order trading electronically with the outright series orders/quotes |

| FIELD NAME | OFFSET | SIZE (BYTES) | FORMAT | DESCRIPTION |
| --- | --- | --- | --- | --- |
| | | | | ◦ ISO trade<br>• "S" – all outright series trades that are generated as part of an Intermarket Sweep order<br>• "f" = complex order trades that were not part of the following transactions<br>◦ Complex CUBE auction<br>◦ Complex QCC<br>◦ Complex order trading electronically with the outright series orders/quotes<br>• "g" = complex order trading electronically with a complex CUBE order or complex CUBE order trading electronically with Complex CUBE Contra order<br>• "h" = trading of a complex QCC order<br>• "i" = complex order to complex order floor trade<br>• "j" = complex order trading electronically with the outright series orders/quotes<br>• "m" = complex order to outright series order floor trade<br>• "p" = complex order with stock to complex order with stock floor trade<br>• "s" (lowercase) = complex order with stock to outright series order floor trade<br>• "H" = Transaction is a late report of the opening trade, but is in the correct sequence; i.e., no other transactions have been reported for the particular option contract.<br>• "F" = Transaction is a late report of the opening trade and is out of sequence; i.e., other transactions have been reported for the particular option contract.<br>• "D" = Transaction is being reported late, but is in the correct sequence; i.e., no later transactions have been reported for the particular option contract.<br>• "B" = Transaction is being reported late and is out of sequence; i.e., later transactions have |

| FIELD NAME | OFFSET | SIZE (BYTES) | FORMAT | DESCRIPTION |
|---|---|---|---|---|
| | | | | been reported for the particular option contract. |
| **TradeCond2** | 33 | 1 | ASCII | Valid values:<br>• ‘ ’ - (space or 0x20)<br>• O -- Market Center Opening Trade<br>• 5 -- Reopening Trade |
| **Reserved** | 34 | 1 | ASCII | Reserved for future use |
| **TradeCond4** | 35 | 1 | ASCII | Valid values:<br>• ‘ ’ - (space or 0x20)<br>• Q - Official Open Price |

## 3.3 Options Trade Cancel Message – Msg Type 321

In the event that an earlier trade has been reported in error, an Options Trade Cancel message is sent.

Customers who are building a record of today's trades should remove the cancelled trade from their records and adjust any statistics accordingly.

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: 24 bytes |
| **Msg Type** | 2 | 2 | Binary | The type of message:<br>• 321 – Options Trade Cancel 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. |
| **OriginalTradeID** | 20 | 4 | Binary | The original TradeID of the Trade being cancelled. |

## 3.4 Options Trade Correction Message – Msg Type 322

In the event that an earlier trade has been reported with one or multiple fields in error, an Options Trade Correction message is sent.

Customers who are building a record of today's trades should correct the specified trade in their records and adjust any statistics accordingly.

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: 40 bytes |
| **Msg Type** | 2 | 2 | Binary | The type of message:<br>▪ 322 – Options Trade Correction 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. |
| **OriginalTradeID** | 20 | 4 | Binary | The original TradeID of the Trade message being corrected. |
| **TradeID** | 24 | 4 | Binary | The TradeID of the corrected Trade message. |
| **Price** | 28 | 4 | Signed Binary | The corrected price of the Trade. Use the Price scale from the series index mapping. |
| **Volume** | 32 | 4 | Binary | The corrected volume of the trade in contracts. |
| **TradeCond1** | 36 | 1 | ASCII | Settlement related conditions. Valid values:<br>• "H" = Transaction is a late report of the opening trade, but is in the correct sequence; i.e., no other transactions have been reported for the particular option contract.<br>• "F" = Transaction is a late report of the opening trade and is out of sequence; i.e., other transactions have been reported for the particular option contract.<br>• "D" = Transaction is being reported late, but is in the correct sequence; i.e., no later transactions have been reported for the particular option contract.<br>• "B" = Transaction is being reported late and is out of sequence; i.e., later |

| FIELD NAME | OFFSET | SIZE (BYTES) | FORMAT | DESCRIPTION |
| --- | --- | --- | --- | --- |
| | | | | transactions have been reported for the particular option contract. |
| **Reserved 1** | 37 | 1 | ASCII | Reserved for future use |
| **Reserved 2** | 38 | 1 | ASCII | Reserved for future use |
| **Reserved 3** | 39 | 1 | ASCII | Reserved for future use |

## 3.5 Options Imbalance Message – Msg Type 305

Options Imbalance messages are published every 5 seconds during opening and reopening auctions to update price and volume information.

If there is no change to the imbalance calculation fields, this message will not be generated.

| FIELD NAME | OFFSET | SIZE | FORMAT | DESCRIPTION |
|---|---|---|---|---|
| **Msg Size** | 0 | 2 | Binary | Size of the message: 65 bytes |
| **Msg Type** | 2 | 2 | Binary | This field identifies the type of message.<br>305 – Options Imbalance 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 sequence number of this message in the set of all messages for this series |
| **Reserved** | 20 | 4 | Binary | Reserved for future use |
| **PairedQty** | 24 | 4 | Binary | The number of contracts paired off at the Indicative Match Price. |
| **TotalImbalanceQty** | 28 | 4 | Binary | The total imbalance quantity at the Indicative Match Price. |
| **MarketImbalanceQty** | 32 | 4 | Binary | The total market order imbalance quantity at the Indicative Match Price. |
| **Reserved** | 36 | 2 | Binary | Reserved for future use |
| **AuctionType** | 38 | 1 | ASCII | • M – Core Opening Auction<br>• H – Reopening Auction (Halt resume) |
| **ImbalanceSide** | 39 | 1 | ASCII | The side of the TotalImbalanceQty<br>• B – Buy side<br>• S – Sell side<br>• ‘ ’ - (space or 0x20) if no imbalance |
| **ContinuousBook ClearingPrice** | 40 | 4 | Signed Binary | The price at which all interest on the book can trade, including auction and imbalance offset interest, and disregarding auction collars. |

| FIELD NAME | OFFSET | SIZE | FORMAT | DESCRIPTION |
|---|---|---|---|---|
| **AuctionInterest ClearingPrice** | 44 | 4 | Signed Binary | The price at which all eligible auction-only interest would trade, subject to auction collars. |
| **Reserved** | 48 | 4 | Binary | Reserved for future use |
| **IndicativeMatchPrice** | 52 | 4 | Signed Binary | The price at which the highest number of contracts would trade, subject to auction collars. It includes the non-displayed quantity of Reserve Orders. See Information on Auctions for details. |
| **Upper Collar** | 56 | 4 | Signed Binary | Legal width bid for option |
| **Lower Collar** | 60 | 4 | Signed Binary | Legal width offer for option |
| **Auction Status** | 64 | 1 | Binary | Indicates whether the auction will run<br>• 0 - Will run as usual<br>• 4 - Auction will not run because legal width quote does not exist<br>• 5 - Auction will not run because market maker quote is not received |

## 3.6 Series RFQ Message - Msg Type 307

The Request for Series RFQ message is published for outright series. It is generated by the matching engine to solicit interest in an auction or order.

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

| FIELD NAME | SIZE | FORMAT | DESCRIPTION |
|---|---|---|---|
| **Msg Size** | 2 | Binary | Size of the message: 44 bytes |
| **Msg Type** | 2 | Binary | The type of message<br>• 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<br>• B = Buy<br>• S = Sell |
| **Type** | 1 | ASCII | Order Type of CUBE/BOLD/COA<br>• P = Price Improvement CUBE<br>• S = AON Solicitation CUBE<br>• B = BOLD(Outright only)<br>• C = COA (Complex only) |

| FIELD NAME | SIZE | FORMAT | DESCRIPTION |
|---|---|---|---|
| **Capacity** | 1 | ASCII | Customer or Firm capacity specified with the order. Values include:<br>• ‘ ’ - (space or 0x20)<br>• 0 - Customer<br>• 1 - Firm<br>• 2 - Broker Dealer<br>• 3 - Market Maker<br>• 5 - Away Market Maker<br>• 8 - Professional Customer<br><br>This field is used only for BOLD (Type = B). |
| **Total quantity** | 4 | Binary | Total quantity |
| **Working Price** | 4 | Signed Binary | RFQ Price |
| **Participant** | 4 | Binary | OCC Number for the Clearing firm specified with the order.<br>• ‘0’ - (0x00) when no OCC Number was specified.<br><br>This field is only used for BOLD (Type = B). |
| **AuctionID** | 8 | Binary | Auction ID for CUBE/COA |
| **RFQ Status** | 1 | ASCII | This status field is used for CUBE/COA (Type = C).<br>• O - Start of RFQ Auction<br>• Q - End of RFQ Auction |

# 4. OUTRIGHT SERIES SUMMARY MESSAGE – MSG TYPE 323

The outright series summary message is sent every 60 seconds, on a separate multicast channel from the main feed.

The message is sent regardless of whether there has been a change to the series in the last 60 seconds or not. If no trades are published for a series during a given day, no outright series Summary message is generated.

Note: only outright series will publish the Outright Series Summary message. Outright Series Summary Message (with the exception of the Opening trade) will not include any cancelled trades and routed trades which were not published.

The Series Summary message will provide the following trade statistics per series: high, low, open, close and total volume

a) High shall correspond to the highest trade price of the day
b) Low shall correspond to the lowest trade price of the day
c) Open shall correspond to the first trade price of the day
d) Close shall correspond to the last trade price of the day
e) Total number of contracts traded for the day

If a trade has been corrected, only the corrected value will be taken into account for the Series summary.

The Opening or First trade shall always be considered as the First trade even if it is cancelled later in the session. Furthermore, the Opening trade price published will be used as the First price in the Series summary message.

## 4.1 Message Structure for Outright Series Summary Message

| 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:<br>• 323 – Outright Series Summary 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. |
| **HighPrice** | 16 | 4 | Signed Binary | The Highest price of the series for the day. Use the Price scale from the series mapping index. |
| **LowPrice** | 20 | 4 | Signed Binary | The Lowest price of the series for the day. Use the Price scale from the series mapping index. |
| **Open** | 24 | 4 | Signed Binary | The First price of the series for the day. Use the Price scale from the series mapping index. |
| **Close** | 28 | 4 | Signed Binary | The Last price of the series for the day. Use the Price scale from the series index mapping. |
| **TotalVolume** | 32 | 4 | Binary | The cumulative volume for the outright series throughout the day. |

## 5. PRODUCT ID

| EXCHANGE | PRODUCT ID | DESCRIPTION |
|---|---|---|
| NYSE ARCA Options | 162 | NYSE Arca TOP - BBO |
| NYSE ARCA Options | 165 | NYSE Arca TOP - Trades |
| NYSE ARCA Options | 164 | NYSE Arca TOP - Imbalances |
| NYSE AMERICAN Options | 172 | NYSE American TOP - BBO |
| NYSE AMERICAN Options | 175 | NYSE American TOP - Trades |
| NYSE AMERICAN Options | 174 | NYSE American TOP - Imbalances |