Nasdaq Totalview ITCH 5.0

Product Overview

Nasdaq TotalView ITCH is a direct data feed product offered by The Nasdaq Stock Market, LLC. Nasdaq TotalView ITCH features the following data elements (in binary number format) for all exchange listed equities securities traded via the Nasdaq execution system:

- **Order level data with attribution:** For Nasdaq execution system, Nasdaq will provide its full order depth using the standard ITCH format. TotalView-ITCH uses a series of messages to track the life of a customer order. As an added feature, the TotalView ITCH message formats will support Nasdaq market participant attribution. TotalView-ITCH carries order level data for NYSE, NYSE American, NYSE Arca and BATS-listed securities as well as for Nasdaq listed securities.
- **Trade Messages:** To ensure that customers have complete information about Nasdaq order flow, TotalView-ITCH supports a trade message to reflect a match of a non-displayable order in the Nasdaq system. TotalView-ITCH also supports a separate trade message to reflect Nasdaq cross transactions.
- **Net Order Imbalance Data:** In the minutes leading up to the Nasdaq Opening and Closing Crosses as well as the Nasdaq Crosses for IPO or halted/paused securities, Nasdaq disseminates the indicative clearing price and net order imbalance on Nasdaq. Because the calculation includes non-displayable as well as displayable order types, the Net Order Imbalance Indicator (NOII) is the best predictor of the Nasdaq opening and closing prices available to the public.
- **Administrative messages:** Trading action messages are used to inform market participants when a security is halted/paused or released for trading. Symbol Directory messages provide basic security data such as the market tier and Financial Status Indicator. Market participant position message carries the Primary Market Maker status, Market Participant status and Market Maker mode fields used by some firms to comply with market regulations.

Publisher

Nasdaq Investment Intelligence equips investors with the tools to make informed decisions by providing innovative real-time and historical analytic products and intelligent solutions designed to tap new data sets and meet new industry challenges. Nasdaq Data Cloud Services via Quandl eliminates infrastructure and resource obstacles from collecting and storing large data sets, providing tools with industry adopted open standards to ingest and analyze market data and other financial information. To learn more about the company, technology solutions and career opportunities, visit us on LinkedIn, on Twitter @Nasdaq, or at www.nasdaq.com.

Data Types

All integer fields are big-endian (network byte order) binary encoded numbers. Unless otherwise noted, they are unsigned.

All alpha fields are ASCII fields which are left justified and padded on the right with spaces.

Prices are integer fields, supplied with an associated precision. When converted to a decimal format, prices are in fixed point format, where the precision defines the number of decimal places. For example, a field flagged as Price (4) has an implied 4 decimal places. The maximum value of price (4) in TotalView ITCH is 200,000.0000 (decimal, 77359400 hex).

Timestamps are represented as nanoseconds since midnight.

Delivery

Nasdaq Cloud Data Service (NCDS) provides a modern and efficient method of delivery for realtime exchange data and other financial information. Data is made available through a suite of APIs, allowing for effortless integration of data from disparate sources, and a dramatic reduction in time to market for customer-designed applications. The API is highly scalable, and robust enough to support the delivery of real-time exchange data.

This repository provides an SDK for developing applications to access the NCDS API. While the SDK is open source, connecting to the API does require credentials, which are provided by Nasdaq during an on-boarding process.

For more information please use the link- https://github.com/Nasdaq/CloudDataService

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Message Formats

The TotalView ITCH feed is composed of a series of messages that describe orders added to, removed from, and executed on Nasdaq as well as disseminate Cross and Stock Directory information.

System Event Message

The system event message type is used to signal a market or data feed handler event.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	"S" = System Event Message
Stock Locate	symbolLocate	int	Always 0
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.

<table>
<tr>
<td>Event Code</td>
<td>event</td>
<td>string</td>
<td>Nasdaq supports the following event codes on a daily basis on the TotalView-ITCH data feed.
<table>
<tr><th>Code</th><th>Explanation</th></tr>
<tr><td>“O”</td><td>Start of Messages. Outside of time stamp messages, the start of day message is the first message sent in any trading day</td></tr>
<tr><td>“S”</td><td>Start of System hours. This message indicates that NASDAQ is open and ready to start accepting orders</td></tr>
<tr><td>“Q”</td><td>Start of Market hours. This message is intended to indicate that Market Hours orders are available for execution</td></tr>
<tr><td>“M”</td><td>End of Market hours. This message is intended to indicate that Market Hours orders are no longer Available for execution</td></tr>
<tr><td>“E”</td><td>End of System hours. It indicates that Nasdaq is now closed and will not accept any new orders today.

It is still possible to receive Broken Trade messages and Order Delete messages after the End of Day</td></tr>
<tr><td>“C”</td><td>End of Messages. This is always the last message sent in any trading day.</td></tr>
</table>
</td>
</tr>
</table>

Schema

```
{
        "type" : "record",
        "name" : "SeqSystemEventMessage",
        "fields" : [ {
         "name" : "SoupPartition",
         "type" : "int"
        }, {
         "name" : "SoupSequence",
         "type" : "long"
        }, {
         "name" : "msgType",
         "type" : "string"
        }, {
         "name" : "symbolLocate",
         "type" : "int"
        }, {
         "name" : "uniqueTimestamp",
         "type" : "long"
        }, {
         "name" : "event",
         "type" : "string"
        }
```

]

}

Sample

```
{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "S",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
“event”: O
}
```

Stock Related Messages

Stock Directory

At the start of each trading day, Nasdaq disseminates stock directory messages for all active symbols in the Nasdaq execution system.

Market data redistributors should process this message to populate the Financial Status Indicator (required display field) and the Market Category (recommended display field) for Nasdaq listed issues.

Details:

Field	Name	Type	Value/Description
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	"R" = Stock Directory Message
Stock Locate	symbolLocate	int	Locate Code uniquely assigned to the security symbol for the day.
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight

<table>
<tr><td></td><td></td><td></td><td>See the <code>TrackingID</code> class in the <code>com.nasdaq.ncdsclient.internal.utils</code> package within the SDK.</td></tr>
<tr><td>Stock</td><td>symbol</td><td>string</td><td>Denotes the security symbol for the issue in the Nasdaq execution system.</td></tr>
<tr><td>Market Category</td><td>marketCategory</td><td>string</td><td>Indicates Listing market or listing market tier for the issue.
<table>
<tr><th>Code</th><th>Definition</th></tr>
<tr><td colspan="2">Nasdaq Listed Instruments</td></tr>
<tr><td>Q</td><td>Nasdaq Global Select Market℠</td></tr>
<tr><td>G</td><td>Nasdaq Global Market℠</td></tr>
<tr><td>S</td><td>Nasdaq Capital Market®</td></tr>
<tr><td colspan="2">Non-Nasdaq Listed Instruments</td></tr>
<tr><td>N</td><td>New York Stock Exchange (NYSE)</td></tr>
<tr><td>A</td><td>NYSE American</td></tr>
<tr><td>P</td><td>NYSE Arca</td></tr>
<tr><td>Z</td><td>BATS Z Exchange</td></tr>
<tr><td>V</td><td>Investors’ Exchange, LLC</td></tr>
<tr><td><space></td><td>Not available</td></tr>
<tr><td></td><td></td></tr>
</table></td></tr>
<tr><td>Financial Status Indicator</td><td>fsi</td><td>string</td><td>For Nasdaq listed issues, this field indicates when a firm is not in compliance with Nasdaq continued listing requirements.
<table>
<tr><th>Code</th><th>Definition</th></tr>
<tr><td colspan="2">Nasdaq Listed Instruments</td></tr>
<tr><td>D</td><td>Deficient</td></tr>
<tr><td>E</td><td>Delinquent</td></tr>
<tr><td>Q</td><td>Bankrupt</td></tr>
<tr><td>S</td><td>Suspended</td></tr>
<tr><td>G</td><td>Deficient and Bankrupt</td></tr>
<tr><td>H</td><td>Deficient and Delinquent</td></tr>
<tr><td>J</td><td>Delinquent and Bankrupt</td></tr>
<tr><td>K</td><td>Deficient, Delinquent and Bankrupt</td></tr>
<tr><td>C</td><td>Creations and/or Redemptions Suspended for Exchange Traded Product</td></tr>
<tr><td>N</td><td>Normal (Default): Issuer Is NOT Deficient, Delinquent, or Bankrupt</td></tr>
<tr><td colspan="2">Non-Nasdaq Listed Instruments</td></tr>
<tr><td><space></td><td>Not available. Firms should refer to SIAC feeds for code if needed</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Round Lot Size</td><td>roundLotSize</td><td>int</td><td>Denotes the number of shares that represent a round lot for the issue.</td></tr>
<tr><td>Round Lots Only</td><td>roundLotOnly</td><td>string</td><td>Indicates if Nasdaq system limits order entry for issue.
<table>
<tr><th>Code</th><th>Definition</th></tr>
<tr><td>Y</td><td>Nasdaq system only accepts round lots</td></tr>
<tr><td>N</td><td>Nasdaq system does not have any order size restrictions for this security. Odd and mixed lot orders are allowed.</td></tr>
</table></td></tr>
<tr><td>Issue Classification</td><td>issueClassification</td><td>string</td><td>Identifies the security class for the issue as assigned by Nasdaq. See Appendix for allowable values.</td></tr>
<tr><td>Issue Sub-Type</td><td>issueSubtype</td><td>string</td><td>Identifies the security sub-type for the issue as assigned by Nasdaq. See Appendix for allowable values.</td></tr>
<tr><td>Authenticity</td><td>authenticity</td><td>string</td><td>Denotes if an issue or quoting participant record is set up in Nasdaq systems in a live/production, test, or demo state. Please note that firms should only show live issues and quoting participants on public quotation displays.
<table>
<tr><th>Code</th><th>Definition</th></tr>
<tr><td>P</td><td>Live/Production</td></tr>
<tr><td>T</td><td>Test</td></tr>
</table></td></tr>
<tr><td>Short Sale Threshold Indicator</td><td>shortSaleThreshold</td><td>string</td><td>Indicates if a security is subject to mandatory close-out of short sales under SEC Rule 203(b)(3).
<table>
<tr><th>Code</th><th>Definition</th></tr>
<tr><td>Y</td><td>Issue is restricted under SEC Rule 203(b)(3)</td></tr>
<tr><td>N</td><td>Issue is not restricted</td></tr>
<tr><td><space></td><td>Threshold Indicator not available</td></tr>
</table></td></tr>
<tr><td>IPO Flag</td><td>ipoFlag</td><td>string</td><td>Indicates if the Nasdaq security is set up for IPO release. This field is intended to help Nasdaq market participant firms comply with FINRA Rule 5131(b).
<table>
<tr><th>Code</th><th>Definition</th></tr>
<tr><td colspan="2">Nasdaq-Listed Instruments</td></tr>
<tr><td>Y</td><td>Nasdaq listed instrument is set up as a new IPO security</td></tr>
<tr><td>N</td><td>Nasdaq listed instrument is not set up as a new IPO security</td></tr>
<tr><td colspan="2">Non-Nasdaq Listed Instruments</td></tr>
<tr><td><space></td><td>Notavailable</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>LULD Reference Price Tier</td><td>luldPriceTier</td><td>string</td><td>Indicates which Limit Up / Limit Down price band calculation parameter is to be used for the instrument. Refer to LULD Rule for details.
<table><tr><th>Code</th><th>Definition</th></tr><tr><td>1</td><td>Tier 1 NMS Stocks and select ETPs</td></tr><tr><td>2</td><td>Tier 2 NMS Stocks</td></tr><tr><td><space></td><td>Not available</td></tr></table></td></tr>
<tr><td>ETP Flag</td><td>etpFlag</td><td>string</td><td>Indicates whether the security is an exchange traded product (ETP).
<table><tr><th>Code</th><th>Definition</th></tr><tr><td>Y</td><td>Instrument is an ETP</td></tr><tr><td>N</td><td>Instrument is not an ETP</td></tr><tr><td><space></td><td>Not available</td></tr></table></td></tr>
<tr><td>ETP Leverage Factor</td><td>etpLeverageFactor</td><td>int</td><td>Tracks the integral relationship of the ETP to the underlying index.
Example: If the underlying Index increases by a value of 1 and the ETP’s Leverage factor is 3, indicates the ETF will increase/decrease (see Inverse) by 3.
Leverage Factor is rounded to the nearest integer below, e.g. leverage factor 1 would represent leverage factors of 1 to 1.99.
This field is used for LULD Tier I price band calculation purposes.

ETP Leverage Factor currently not supported for Non-Nasdaq listed ETP’s.</td></tr>
<tr><td>Inverse Indicator</td><td>inverse</td><td>string</td><td>Indicates the directional relationship between the ETP and Underlying index.
<table><tr><th>Code</th><th>Definition</th></tr><tr><td>Y</td><td>ETP is an inverse ETP</td></tr><tr><td>N</td><td>ETP is not an inverse ETP</td></tr><tr><td></td><td>Example: An ETP Leverage Factor of 3 and an Inverse value of ‘Y’ indicates the ETP will decrease by a value of 3.</td></tr></table></td></tr>
</table>

Schema


```
{
        "type" : "record",
        "name" : "SeqSymbolDirectoryMessage",
        "fields" : [ {
```

```
  "name" : "SoupPartition",
  "type" : "int"
}, {
  "name" : "SoupSequence",
  "type" : "long"
}, {
  "name" : "msgType",
  "type" : "string"
}, {
  "name" : "symbolLocate",
  "type" : "int"
}, {
  "name" : "uniqueTimestamp",
  "type" : "long"
}, {
  "name" : "symbol",
  "type" : "string"
}, {
  "name" : "marketCategory",
  "type" : "string"
}, {
  "name" : "fsi",
  "type" : "string"
}, {
  "name" : "roundLotSize",
  "type" : "int"
}, {
  "name" : "roundLotOnly",
  "type" : "string"
}, {
  "name" : "issueClassification",
  "type" : "string"
}, {
  "name" : "issueSubtype",
  "type" : "string"
}, {
  "name" : "authenticity",
  "type" : "string"
}, {
  "name" : "shortSaleThreshold",
  "type" : "string"
}, {
  "name" : "ipoFlag",
  "type" : "string"
```

}, {
  "name" : "luldPriceTier",
  "type" : "string"
}, {
  "name" : "etpFlag",
  "type" : "string"
}, {
  "name" : "etpLeverageFactor",
  "type" : "int"
}, {
  "name" : "inverse",
  "type" : "string"
}
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "R",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"symbol": "ZVZZT",
"marketCategory": "Q",
"fsi": "N",
"roundLotSize": 100,
"roundLotOnly": "N",
"issueClass": "L",
"issueSubtype": "MF",
"authenticity": "T",
"shortThreshold": "N",
"ipo": "N",
"luldTier": "1",
"etf": "Y",
"etfFactor": 2,
"inverseETF": "N",
}

Stock Trading Action

Nasdaq uses this administrative message to indicate the current trading status of a security to the trading community.

Prior to the start of system hours, Nasdaq will send out a Trading Action spin. In the spin, Nasdaq will send out a Stock Trading Action message with the "T" (Trading Resumption) for all Nasdaq- and other exchange-listed securities that are eligible for trading at the start of the system hours. If a security is absent from the pre-opening Trading Action spin, firms should assume that the security is being treated as halted in the Nasdaq platform at the start of the system hours. Please note that securities may be halted in the Nasdaq system for regulatory or operational reasons.

After the start of system hours, Nasdaq will use the Trading Action message to relay changes in trading status for an individual security. Messages will be sent when a stock is:

- Halted
- Paused*
- Released for quotation
- Released for trading

* The paused status will be disseminated for NASDAQ-listed securities only. Trading pauses on non-NASDAQ listed securities will be treated simply as a halt.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	"H" = Stock Trading Action Message.
Stock Locate	symbolLocate	int	Locate code identifying the security
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Stock	symbol	string	Stock symbol, right padded with spaces
Trading State	tradingState	string	Indicates the current trading state for the stock. Allowable values: "H" = Halted across all U.S. equity markets / SROs "P" = Paused across all U.S. equity markets / SROs (Nasdaq-listed securities only) "Q" = Quotation only period for cross-SRO halt or pause "T" = Trading on Nasdaq
Reserved	reserved	string	Reserved.
Reason	reason	string	Trading Action reason.

Schema

{
 "type" : "record",
 "name" : "SeqTradingActionMessage",
 "fields" : [{
  "name" : "SoupPartition",
  "type" : "int"
 }, {
  "name" : "SoupSequence",
  "type" : "long"
 }, {
  "name" : "msgType",
  "type" : "string"
 }, {
  "name" : "symbolLocate",
  "type" : "int"
 }, {
  "name" : "uniqueTimestamp",
  "type" : "long"
 }, {
  "name" : "symbol",
  "type" : "string"
 }, {
  "name" : "tradingState",
  "type" : "string"
 }, {
  "name" : "reserved",
  "type" : "string"
 }, {
  "name" : "reason",
  "type" : "string"
 }
 ]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "H",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"symbol": "ZVZZT",
"tradingState": "T",
“reserved”: “ “,
"reason": "M1"
}

Reg SHO Short Sale Price Test Restricted Indicator

In February 2011, the Securities and Exchange Commission (SEC) implemented changes to Rule 201 of the Regulation SHO (Reg SHO). For details, please refer to SEC Release Number 34-61595. In association with the Reg SHO rule change, Nasdaq will introduce the following Reg SHO Short Sale Price Test Restricted Indicator message format.

For Nasdaq-listed issues, Nasdaq supports a full pre-opening spin of Reg SHO Short Sale Price Test Restricted Indicator messages indicating the Rule 201 status for all active issues. Nasdaq also sends the Reg SHO Short Sale Price Test Restricted Indicator message in the event of an intraday status change.

For other exchange-listed issues, Nasdaq relays the Reg SHO Short Sale Price Test Restricted Indicator message when it receives an update from the primary listing exchange.

Nasdaq processes orders based on the most Reg SHO Restriction status value.

Details:

Field	Name	Value	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	"Y" = Reg SHO Short Sale Price Test Restricted Indicator
Locate Code	symbolLocate	int	Locate code identifying the security
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Stock	symbol	string	Stock symbol, right padded with spaces
Reg SHO Action	state	string	Denotes the Reg SHO Short Sale Price Test Restriction status for the issue at the time of the message dissemination. Allowable values are: "0" = No price test in place "1" = Reg SHO Short Sale Price Test Restriction in effect due to an intra-day price drop in security "2" = Reg SHO Short Sale Price Test Restriction remains in effect

Schema

{
"type" : "record",
"name" : "SeqRegSHOStateMessage",
"fields" : [{
"name" : "SoupPartition",

"type" : "int"
}, {
"name" : "SoupSequence",
"type" : "long"
}, {
"name" : "msgType",
"type" : "string"
}, {
"name" : "symbolLocate",
"type" : "int"
}, {
"name" : "uniqueTimestamp",
"type" : "long"
}, {
"name" : "symbol",
"type" : "string"
}, {
"name" : "state",
"type" : "string"
}
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "Y",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"symbol": " ZVZZT",
"state": "1"
}

Market Participant Position

At the start of each trading day, Nasdaq disseminates a spin of market participant position messages. The message provides the Primary Market Maker status, Market Maker mode and Market Participant state for each Nasdaq market participant firm registered in an issue. Market participant firms may use these fields to comply with certain marketplace rules.

Throughout the day, Nasdaq will send out this message only if Nasdaq Operations changes the status of a market participant firm in an issue.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.

Message Type	msgType	string	“L” = Market Participant Position message
Stock Locate	symbolLocate	int	Locate code identifying the security
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
MPID	mpid	string	Denotes the market participant identifier for which the position message is being generated
Stock	symbol	string	Stock symbol, right padded with spaces
Primary Market Maker	pmm	string	Indicates if the market participant firm qualifies as a Primary Market Maker in accordance with Nasdaq marketplace rules: “Y” = primary market maker “N” = non-primary market maker
Market Maker Mode	mmm	string	Indicates the quoting participant’s registration status in relation to SEC Rules 101 and 104 of Regulation M “N” = normal “P” = passive “S” = syndicate “R” = pre-syndicate “L” = penalty
Market Participant State	mps	string	Indicates the market participant’s current registration status in the issue “A” = Active “E” = Excused/Withdrawn “W” = Withdrawn “S” = Suspended “D” = Deleted

Schema


```
{
"type" : "record",
                    "name" : "SeqFirmPermissionsMessage",
                    "fields" : [ {
                     "name" : "SoupPartition",
                     "type" : "int"
                    }, {
                     "name" : "SoupSequence",
                     "type" : "long"
                    }, {
```

"name" : "msgType",
"type" : "string"
}, {
"name" : "symbolLocate",
"type" : "int"
}, {
"name" : "uniqueTimestamp",
"type" : "long"
}, {
"name" : "mpid",
"type" : "string"
}, {
"name" : "symbol",
"type" : "string"
}, {
"name" : "pmm",
"type" : "string"
}, {
"name" : "mmm",
"type" : "string"
}, {
"name" : "mps",
"type" : "string"
}
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "L",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
“mpid”: NDAQ
"symbol": " ZVZZT",
"pmm": "Y"
"mmm": "N"
"mps": "A"
}

Market-Wide Circuit Breaker (MWCB) Messaging

MWCB Decline Level Message

Informs data recipients what the daily MWCB breach points are set to for the current trading day.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.

SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	“V” = Market wide circuit breaker Decline Level Message.
Stock Locate	symbolLocate	int	Always set to 0
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Level 1	level1	long	Denotes the MWCB Level 1 Value.
Level 2	level2	long	Denotes the MWCB Level 2 Value.
Level 3	level3	long	Denotes the MWCB Level 3 Value.

Schema


```
{
        "type" : "record",
        "name" : " SeqMwcbLevelsMessage",
        "fields" : [ {
         "name" : "SoupPartition",
         "type" : "int"
        }, {
         "name" : "SoupSequence",
         "type" : "long"
        }, {
         "name" : "msgType",
         "type" : "string"
        }, {
         "name" : "symbolLocate",
         "type" : "int"
        }, {
         "name" : "uniqueTimestamp",
         "type" : "long"
        }, {
         "name" : "level1",
         "type" : "long"
        }, {
         "name" : "level2",
         "type" : "long"
        }, {
         "name" : "level3",
         "type" : "long"
        }
```

```
]
}
```

Sample

```
{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "V",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"level1": 356735673,
"level2": 599877474873,
"level3": 42256736573
}
```

MWCB Status Message

Informs data recipients when a MWCB has breached one of the established levels.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	“W” = Market-Wide Circuit Breaker Status message
Stock Locate	symbolLocate	int	Always set to 0
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Breached Level	breachedLevel	string	Denotes the MWCB Level that was breached. “1” = Level 1 “2” = Level 2 “3” = Level 3

Schema

```
{
    "type" : "record",
    "name" : " SeqMwcbStatusMessage",
    "fields" : [ {
      "name" : "SoupPartition",
      "type" : "int"
    }, {
      "name" : "SoupSequence",
      "type" : "long"
    }, {
      "name" : "msgType",
      "type" : "string"
```

}, {
"name" : "symbolLocate",
"type" : "int"
}, {
"name" : "uniqueTimestamp",
"type" : "long"
}, {
"name" : "breachedLevel",
"type" : "string"
}
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "W",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"level": 1,
}

IPO Quoting Period Update

Indicates the anticipated IPO quotation release time of a security.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.

SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	int	“K” = IPO Quoting Period Update Message
Stock Locate	symbolLocate	int	Always set to 0
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Stock	symbol	string	Stock symbol, right padded with spaces
IPO Quotation Release Time	quoteReleaseTime	int	Denotes the IPO release time, in seconds since midnight, for quotation to the nearest second. NOTE: If the quotation period is being canceled/postponed, we should state that: 1. IPO Quotation Time will be set to 0 2. 2. IPO Price will be set to 0
IPO Quotation Release Qualifier	quoteReleaseQuant	string	“A” = Anticipated Quotation Release Time: This value would be used when Nasdaq Market Operations initially enters the IPO instrument for release “C” = IPO Release Canceled/Postponed: This value would be sued when Nasdaq Market Operations cancels or postpones the release of the new IPO instrument
IPO Price	ipoPrice	int	Denotes the IPO Price to be used for intraday net change calculations Prices are given in decimal format with 6 whole number places followed by 4 decimal digits. The whole number portion is padded on the left with spaces; the decimal portion is padded on the right with zeroes. The decimal point is implied by position, it does not appear inside the price field

Schema


```
{
        "type" : "record",
        "name" : " SeqIpoQuotingPeriodMessage",
        "fields" : [ {
         "name" : "SoupPartition",
         "type" : "int"
        }, {
         "name" : "SoupSequence",
         "type" : "long"
        }, {
         "name" : "msgType",
         "type" : "string"
        }, {
         "name" : "symbolLocate",
```

"type" : "int"
}, {
"name" : "uniqueTimestamp",
"type" : "long"
}, {
"name" : "symbol",
"type" : "string"
}, {
"name" : "quoteReleaseTime",
"type" : "int"
}, {
"name" : "quoteReleaseQuant",
"type" : "string"
}, {
"name" : "ipoPrice",
"type" : "int"
}
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "K",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"symbol": "ZVZZT",
"quoteReleaseTime": 34509843560,
"quoteReleaseQuant": "A",
"ipoPrice": 15.00
}

Limit Up – Limit Down (LULD) Auction Collar

Indicates the auction collar thresholds within which a paused security can reopen following a LULD Trading Pause.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	“J” = LULD Auction Collar
Stock Locate	symbolLocate	int	Locate code identifying the security

Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Stock	symbol	string	Stock symbol, right padded with spaces
Auction Collar Reference Price	refPrice	int	Reference price used to set the Auction Collars
Upper Auction Collar Price	upperPrice	int	Indicates the price of the Upper Auction Collar Threshold
Lower Auction Collar Price	lowerPrice	int	Indicates the price of the Lower Auction Collar Threshold
Auction Collar Extension	extensions	int	Indicates the number of the extensions to the Reopening Auction

Schema


```
{
    "type" : "record",
    "name" : " SeqLULDReopenMessage",
    "fields" : [ {
      "name" : "SoupPartition",
      "type" : "int"
    }, {
      "name" : "SoupSequence",
      "type" : "long"
    }, {
      "name" : "msgType",
      "type" : "string"
    }, {
      "name" : "symbolLocate",
      "type" : "int"
    }, {
      "name" : "uniqueTimestamp",
      "type" : "long"
    }, {
      "name" : "symbol",
      "type" : "string"
    }, {
      "name" : "refPrice",
      "type" : "int"
    }, {
      "name" : "upperPrice",
      "type" : "int"
```

}, {
"name" : "lowerPrice",
"type" : "int"
}, {
"name" : "extensions",
"type" : "int"
}
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "J",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"symbol": "ZVZZT",
"refPrice": 15,
"upperPrice": 15,
"lowerPrice": 15,
"extensions": "2",
}

Operational Halt

The Exchange uses this message to indicate the current Operational Status of a security to the trading community. An Operational Halt means that there has been an interruption of service on the identified security impacting only the designated Market Center. These Halts differ from the “Stock Trading Action” message types since an Operational Halt is specific to the exchange for which it is declared, and does not interrupt the ability of the trading community to trade the identified instrument on any other market place.

Nasdaq uses this administrative message to indicate the current trading status of the three market centers operated by Nasdaq.

Details:

Field	Name	Type	Value/Description
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	“h” = Operational Halt
Stock Locate	symbolLocate	int	Locate code uniquely assigned to the security symbol for the day.

Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Stock	symbol	string	Denotes the security symbol for the issue in Nasdaq execution system
Market Code	marketCenter	string	“Q”: Nasdaq “B”: BX “X”: PSX
Operational Halt Action	action	string	“H”: Operationally Halted on the identified Market “T”: Operational Halt has been lifted and Trading resumed

Schema

```
{
        "type" : "record",
        "name" : " SeqMarketCenterActionMessage",
        "fields" : [ {
         "name" : "SoupPartition",
         "type" : "int"
        }, {
         "name" : "SoupSequence",
         "type" : "long"
        }, {
         "name" : "msgType",
         "type" : "string"
        }, {
         "name" : "symbolLocate",
         "type" : "int"
        }, {
         "name" : "uniqueTimestamp",
         "type" : "long"
        }, {
         "name" : "symbol",
         "type" : "string"
        }, {
         "name" : "marketCenter",
         "type" : "string"
        }, {
         "name" : "action",
         "type" : "string"
        }
```

]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "h",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"symbol": "ZVZZT",
"marketcenter": "Q",
"action": "H"
}

Add Order Message

An Add Order Message indicates that a new order has been accepted by the Nasdaq system and was added to the displayable book. The message includes a day‐unique Order Reference Number used by Nasdaq to track the order.

Nasdaq will support two variations of the Add Order message format.

Add Order – No MPID Attribution

This message will be generated for unattributed orders accepted by the Nasdaq system. (Note: If a firm wants to display a MPID for unattributed orders, Nasdaq recommends that it use the MPID of “NSDQ”.)

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	“A” = Add Order – No MPID Attribution Message.
Stock Locate	symbolLocate	int	Locate code identifying the security
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Order Reference Number	orderId	long	The unique reference number assigned to the new order at the time of receipt.
Buy/Sell Indicator	side	string	The type of order being added. “B” = Buy Order. “S” = Sell Order.

Shares	quantity	int	The total number of shares associated with the order being added to the book.
Stock	symbol	string	Stock symbol, right padded with spaces
Price	price	int	The display price of the new order. Refer to Data Types for field processing notes.

Schema


```
{
        "type" : "record",
        "name" : " SeqAddOrderMessage",
        "fields" : [ {
          "name" : "SoupPartition",
          "type" : "int"
        }, {
          "name" : "SoupSequence",
          "type" : "long"
        }, {
          "name" : "msgType",
          "type" : "string"
        }, {
          "name" : "symbolLocate",
          "type" : "int"
        }, {
          "name" : "uniqueTimestamp",
          "type" : "long"
        }, {
          "name" : "orderId",
          "type" : "long"
        }, {
          "name" : "side",
          "type" : "string"
        }, {
          "name" : "quantity",
          "type" : "int"
        }, {
          "name" : "symbol",
          "type" : "string"
        }, {
          "name" : "price",
          "type" : "int"
        }
       ]
       }
```


Sample

{

"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "A",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"orderId": "1234567",
"side": "B",
"quantity": "120"
"symbol": "ZVZZT",
"price": "120.11",
}

Add Order with MPID Attribution

This message will be generated for attributed orders and quotations accepted by the Nasdaq system.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	“F” = Add Order –With MPID Attribution Message.
Stock Locate	symbolLocate	int	Locate code identifying the security
Tracking Number + Timestamp	uniqueTimestam p	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Order Reference Number	orderId	long	The unique reference number assigned to the new order at the time of receipt.
Buy/Sell Indicator	side	string	The type of order being added. “B” = buy order. “S” = sell order
Shares	quantity	int	The total number of shares associated with the order being added to the book
Stock	symbol	string	Stock symbol, right padded with spaces
Price	price	int	The display price of the new order. Refer to Data Types for field processing notes.
Attribution	mpid	string	Nasdaq Market participant identifier associated with the entered order

Schema

```
{
        "type" : "record",
        "name" : " SeqAddAttributedOrderMessage",
        "fields" : [ {
```

"name" : "SoupPartition",
"type" : "int"
}, {
"name" : "SoupSequence",
"type" : "long"
}, {
"name" : "msgType",
"type" : "string"
}, {
"name" : "symbolLocate",
"type" : "int"
}, {
"name" : "uniqueTimestamp",
"type" : "long"
}, {
"name" : "orderId",
"type" : "long"
}, {
"name" : "side",
"type" : "string"
}, {
"name" : "quantity",
"type" : "int"
}, {
"name" : "symbol",
"type" : "string"
}, {
"name" : "price",
"type" : "int"
}, {
"name" : "mpid",
"type" : "string"
}
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "F",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"orderId": "1234567",
"side": "B",
"quantity": "120"
"symbol": "ZVZZT",

```
"price": "120.11",
"mpid": "NDAQ",
}
```

Modify Order Messages

Modify Order messages always include the Order Reference Number of the Add Order to which the update applies. To determine the current display shares for an order, ITCH subscribers must deduct the number of shares stated in the Modify message from the original number of shares stated in the Add Order message with the same reference number. Nasdaq may send multiple Modify Order messages for the same order reference number and the effects are cumulative. When the number of display shares for an order reaches zero, the order is dead and should be removed from the book.

Order Executed Message

This message is sent whenever an order on the book is executed in whole or in part. It is possible to receive several Order Executed Messages for the same order reference number if that order is executed in several parts. The multiple Order Executed Messages on the same order are cumulative.

By combining the executions from both types of Order Executed Messages and the Trade Message, it is possible to build a complete view of all non-cross executions that happen on Nasdaq. Cross execution information is available in one bulk print per symbol via the Cross Trade Message.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	"E" = Order Executed Message
Stock Locate	symbolLocate	int	Locate code identifying the security
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Order Reference Number	orderId	long	The unique reference number assigned to the new order at the time of receipt
Executed Shares	quantity	int	The number of shares executed
Match Number	matchId	long	The Nasdaq generated day unique Match Number of this execution. The Match Number is also referenced in the Trade Break Message

Schema

```
{
        "type" : "record",
```

"name" : " SeqOrderExecutedMessage",
"fields" : [{
  "name" : "SoupPartition",
  "type" : "int"
}, {
  "name" : "SoupSequence",
  "type" : "long"
}, {
  "name" : "msgType",
  "type" : "string"
}, {
  "name" : "symbolLocate",
  "type" : "int"
}, {
  "name" : "uniqueTimestamp",
  "type" : "long"
}, {
  "name" : "orderId",
  "type" : "long"
}, {
  "name" : "quantity",
  "type" : "int"
}, {
  "name" : "matchId",
  "type" : "long"
}
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "E",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"orderId": "1234567",
"quantity": "120"
"matchID": "12345678",
}

Order Executed With Price Message

This message is sent whenever an order on the book is executed in whole or in part at a price different from the initial display price. Since the execution price is different than the display price of the original Add Order, Nasdaq includes a price field within this execution message.

It is possible to receive multiple Order Executed and Order Executed With Price messages for the same order if that order is executed in several parts. The multiple Order Executed messages on the same order are cumulative.

These executions may be marked as non-printable. If the execution is marked as non-printed, it means that the shares will be included into a later bulk print (e.g., in the case of cross executions). If a firm is looking to use the data in time-and-sales displays or volume calculations, Nasdaq recommends that firms ignore messages marked as non- printable to prevent double counting.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	"C" = Order Executed with Price Message
Stock Locate	symbolLocate	int	Locate code identifying the security
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Order Reference Number	orderId	long	The unique reference number assigned to the new order at the time of receipt
Executed Shares	quantity	int	The number of shares executed
Match Number	matchId	long	The Nasdaq generated day unique Match Number of this execution. The Match Number is also referenced in the Trade Break Message
Printable	printable	string	Indicates if the execution should be reflected on time and sales displays and volume calculations "N" = Non-Printable "Y" = Printable
Execution Price	price	int	The Price at which the order execution occurred. Refer to Data Types for field processing notes

Schema


```
{
        "type" : "record",
        "name" : " SeqOrderExecutedWithPriceMessage",
        "fields" : [ {
         "name" : "SoupPartition",
         "type" : "int"
        }, {
         "name" : "SoupSequence",
         "type" : "long"
        }, {
         "name" : "msgType",
```

"type" : "string"
}, {
"name" : "symbolLocate",
"type" : "int"
}, {
"name" : "uniqueTimestamp",
"type" : "long"
}, {
"name" : "orderId",
"type" : "long"
}, {
"name" : "quantity",
"type" : "int"
}, {
"name" : "printable",
"type" : "string"
}, {
"name" : "price",
"type" : "int"
}
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "C",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"orderId": "1234567",
"quantity": "120"
"printable": "Y",
"price": "120",
}

Order Cancel Message

This message is sent whenever an order on the book is modified as a result of a partial cancellation.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	int	“X” = Order Cancel Message
Stock Locate	symbolLocate	int	Locate code identifying the security

Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Order Reference Number	orderId	long	The reference number of the order being canceled
Cancelled Shares	quantity	int	The number of shares being removed from the display size of the order as a result of a cancellation

Schema


```
{
    "type" : "record",
    "name" : " SeqOrderCancelMessage",
    "fields" : [ {
      "name" : "SoupPartition",
      "type" : "int"
    }, {
      "name" : "SoupSequence",
      "type" : "long"
    }, {
      "name" : "msgType",
      "type" : "string"
    }, {
      "name" : "symbolLocate",
      "type" : "int"
    }, {
      "name" : "uniqueTimestamp",
      "type" : "long"
    }, {
      "name" : "orderId",
      "type" : "long"
    }, {
      "name" : "quantity",
      "type" : "int"
    }
    ]
    }
```

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "X",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"orderId": "1234567",
"quantity": "120"
}

Order Delete Message

This message is sent whenever an order on the book is being cancelled. All remaining shares are no longer accessible so the order must be removed from the book.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	“D” = Order Delete Message
Stock Locate	symbolLocate	int	Locate code identifying the security
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Order Reference Number	orderId	long	The reference number of the order being canceled

Schema

{
"type" : "record",
"name" : " SeqOrderDeleteMessage",
"fields" : [{
"name" : "SoupPartition",
"type" : "int"
}, {
"name" : "SoupSequence",
"type" : "long"
}, {
"name" : "msgType",
"type" : "string"

}, {
"name" : "symbolLocate",
"type" : "int"
}, {
"name" : "uniqueTimestamp",
"type" : "long"
}, {
"name" : "orderId",
"type" : "long"
}
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "D",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"orderId": "1234567",
}

Order Replace Message

This message is sent whenever an order on the book has been cancel-replaced. All remaining shares from the original order are no longer accessible, and must be removed. The new order details are provided for the replacement, along with a new order reference number which will be used henceforth. Since the side, stock symbol and attribution (if any) cannot be changed by an Order Replace event, these fields are not included in the message. Firms should retain the side, stock symbol and MPID from the original Add Order message.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	“U” = Order Replace Message
Stock Locate	symbolLocate	int	Locate code identifying the security
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight

			See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Original Order Reference Number	orderId	long	The original order reference number of the order being replaced
New Order Reference Number	newOrderId	long	The new reference number for this order at time of replacement Please note that the Nasdaq system will use this new order reference number for all subsequent updates
Shares	quantity	int	The new total displayed quantity
Price	price	int	The new display price for the order Please refer to Data Types for field processing notes

Schema


```
{
    "type" : "record",
    "name" : " SeqReplaceOrderMessage",
    "fields" : [ {
     "name" : "SoupPartition",
     "type" : "int"
    }, {
     "name" : "SoupSequence",
     "type" : "long"
    }, {
     "name" : "msgType",
     "type" : "string"
    }, {
     "name" : "symbolLocate",
     "type" : "int"
    }, {
     "name" : "uniqueTimestamp",
     "type" : "long"
    }, {
     "name" : "orderId",
     "type" : "long"
    }, {
     "name" : "newOrderId",
     "type" : "long"
    }, {
     "name" : "quantity",
     "type" : "int"
```

}, {
"name" : "price",
"type" : "int"
}
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "U",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"orderId": "1234567",
"newOrderId": "5678912"
"quantity": "120"
}

Trade Messages

Trade Message (Non-Cross)

The Trade Message is designed to provide execution details for normal match events involving non-displayable order types. (Note: There is a separate message for Nasdaq cross events.)

Since no Add Order Message is generated when a non-displayed order is initially received, Nasdaq cannot use the Order Executed messages for all matches. Therefore this message indicates when a match occurs between non-displayable order types. A Trade Message is transmitted each time a non-displayable order is executed in whole or in part. It is possible to receive multiple Trade Messages for the same order if that order is executed in several parts. Trade Messages for the same order are cumulative.

Trade Messages should be included in Nasdaq time-and-sales displays as well as volume and other market statistics. Since Trade Messages do not affect the book, however, they may be ignored by firms just looking to build and track the Nasdaq execution system display.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	int	“P” = Trade Message
Stock Locate	symbolLocate	int	Locate code identifying the security
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight

			See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Order Reference Number	orderID	long	The unique reference number assigned to the order on the book being executed. Effective December 6, 2010, Nasdaq will populate the Order Reference Number field within the Trade (Non--- Cross) message as zero. For the binary versions of the TotalView---ITCH data feeds, the field will be null---filled bytes (which encodes sequence of zero)
Buy/Sell Indicator	side	string	The type of non-display order on the book being matched “B” = Buy Order “S” = Sell Order Effective 07/14/2014, this field will always be “B” regardless of the resting side
Shares	quantity	int	The number of shares being matched in this execution
Stock	symbol	string	Stock Symbol, right padded with spaces
Price	price	int	The match price of the order Please refer to Data Types for field processing notes
Match Number	matchId	long	The Nasdaq generated session unique Match Number for this trade The Match Number is referenced in the Trade Break Message

Schema

```
{
        "type" : "record",
        "name" : " SeqTradeMessage",
        "fields" : [ {
         "name" : "SoupPartition",
         "type" : "int"
        }, {
         "name" : "SoupSequence",
         "type" : "long"
        }, {
         "name" : "msgType",
         "type" : "string"
        }, {
         "name" : "symbolLocate",
         "type" : "int"
        }, {
         "name" : "uniqueTimestamp",
         "type" : "long"
        }, {
         "name" : "orderId",
```

"type" : "long"
}, {
"name" : "side",
"type" : "string"
}, {
"name" : "quantity",
"type" : "int"
}, {
"name" : "symbol",
"type" : "string"
}, {
"name" : "price",
"type" : "int"
}, {
"name" : "matchId",
"type" : "long"
}
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "P",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"orderId": "1234567",
"side": "S"
"quantity": "120"
"symbol": "ZVZZT",
"price": "120"
"matchId": "123456"
}

Cross Trade Message

Cross Trade message indicates that Nasdaq has completed its cross process for a specific security. Nasdaq sends out a Cross Trade message for all active issues in the system following the Opening, Closing and EMC cross events. Firms may use the Cross Trade message to determine when the cross for each security has been completed. (Note: For the halted / paused securities, firms should use the Trading Action message to determine when an issue has been released for trading.)

For most issues, the Cross Trade message will indicate the bulk volume associated with the cross event. If the order interest is insufficient to conduct a cross in a particular issue, however, the Cross Trade message may show the shares as zero.

To avoid double counting of cross volume, firms should not include transactions marked as non-printable in time-and-sales displays or market statistic calculations.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	"Q" = Cross Trade Message
Stock Locate	symbolLocate	int	Locate code identifying the security
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Shares	quantity	long	The number of shares matched in the Nasdaq Cross.
Stock	symbol	string	Stock symbol, right padded with spaces
Cross Price	price	int	The price at which the cross occurred. Refer to Data Types for field processing notes.
Match Number	matchId	long	The Nasdaq generated day-unique Match Number of this execution.
Cross Type	crossType	string	The Nasdaq cross session for which the message is being generated.

Schema

```
{
        "type" : "record",
        "name" : " SeqCrossTradeMessage",
        "fields" : [ {
         "name" : "SoupPartition",
         "type" : "int"
        }, {
         "name" : "SoupSequence",
         "type" : "long"
        }, {
         "name" : "msgType",
         "type" : "string"
        }, {
         "name" : "symbolLocate",
         "type" : "int"
        }, {
         "name" : "uniqueTimestamp",
         "type" : "long"
        }, {
         "name" : "quantity",
         "type" : "long"
```

}, {
"name" : "symbol",
"type" : "string"
}, {
"name" : "price",
"type" : "int"
}, {
"name" : "crossType",
"type" : "string"
}, { }
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "Q",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"quantity": "120"
"symbol": "ZVZZT",
"price": "120"
"crossType": "O"
}

Broken Trade / Order Execution Message

The Broken Trade Message is sent whenever an execution on Nasdaq is broken. An execution may be broken if it is found to be “clearly erroneous” pursuant to Nasdaq’s Clearly Erroneous Policy. A trade break is final; once a trade is broken, it cannot be reinstated.

Firms that use the ITCH feed to create time-and-sales displays or calculate market statistics should be prepared to process the broken trade message. If a firm is only using the ITCH feed to build a book, however, it may ignore these messages as they have no impact on the current book.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	“B” = Broken Trade Message.
Stock Locate	symbolLocate	int	Locate code identifying the security

Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Match Number	matchID	long	The Nasdaq Match Number of the execution that was broken. This refers to a Match Number from a previously transmitted Order Executed Message, Order Executed With Price Message, or Trade Message.

Schema


```
{
    "type" : "record",
    "name" : " SeqBrokenTradeMessage",
    "fields" : [ {
      "name" : "SoupPartition",
      "type" : "int"
    }, {
      "name" : "SoupSequence",
      "type" : "long"
    }, {
      "name" : "msgType",
      "type" : "string"
    }, {
      "name" : "symbolLocate",
      "type" : "int"
    }, {
      "name" : "uniqueTimestamp",
      "type" : "long"
    }, {
      "name" : "matchId",
      "type" : "long"
    }
   ]
   }
```

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "B",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"matchId": "123456"
}

Net Order Imbalance Indicator (NOII) Message

- Nasdaq begins disseminating Net Order Imbalance Indicators (NOII) at 9:25 a.m. for the Opening Cross and 3:50 p.m. for the Closing Cross.
- Between 9:25 and 9:28 a.m. and 3:50 and 3:55 p.m., Nasdaq disseminates the NOII information every 10 seconds.
- Between 9:28 and 9:30 a.m. and 3:55 and 4:00 p.m., Nasdaq disseminates the NOII information every second.
- For Nasdaq Halt, IPO and Pauses, NOII messages will be disseminated at 1 second intervals starting 1 second after quoting period starts/trading action is released.
- For more information, please see the FAQ on Opening and Closing Crosses.
- Nasdaq will also disseminate an Extended Trading Close (ETC) message from 4:00 p.m. to 4:05 p.m. at five second intervals.
- For more information, please see the FAQ on Extended Trading Close.

Details:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	“I” = NOII Message
Stock Locate	symbolLocate	int	Locate code identifying the security
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Paired Shares	quantity	long	The total number of shares that are eligible to be matched at the Current Reference Price.
Imbalance Shares	imbalance	long	The number of shares not paired at the Current Reference Price.

Imbalance Direction	imbalanceDir	string	The market side of the order imbalance. “B” = buy imbalance “S” = sell imbalance “N” = no imbalance “O” = Insufficient orders to calculate “P” = Paused
Stock	symbol	string	Stock symbol, right padded with spaces
Far Price	farPrice	int	A hypothetical auction-clearing price for cross orders only. Refer to Data Types for field processing notes.
Near Price	nearPrice	int	A hypothetical auction-clearing price for cross orders as well as continuous orders. Refer to Data Types for field.
Current Reference Price	refPrice	int	The price at which the NOII shares are being calculated. Refer to Data Types for field processing notes.
Cross Type	crossType	string	The type of Nasdaq cross for which the NOII message is being generated “O” = Nasdaq Opening Cross “C” = Nasdaq Closing Cross “H” = Cross for IPO and halted / paused securities “A” = Extended Trading Close
Price Variation Indicator	priceVarianceInd	string	This field indicates the absolute value of the percentage of deviation of the Near Indicative Clearing Price to the nearest Current Reference Price. “L” = Less than 1% “1” = 1 to 1.99% “2” = 2 to 2.99% “3” = 3 to 3.99% “4” = 4 to 4.99% “5” = 5 to 5.99% “6” = 6 to 6.99% “7” = 7 to 7.99% “8” = 8 to 8.99% “9” = 9 to 9.99% “A” = 10 to 19.99% “B” = 20 to 29.99% “C” = 30% or greater <Space> = Cannot be calculated

Schema


```
{
        "type" : "record",
        "name" : " SeqNOIIMessage",
        "fields" : [ {
         "name" : "SoupPartition",
         "type" : "int"
        }, {
```

"name" : "SoupSequence",
"type" : "long"
}, {
"name" : "msgType",
"type" : "string"
}, {
"name" : "symbolLocate",
"type" : "int"
}, {
"name" : "uniqueTimestamp",
"type" : "long"
}, {
"name" : "quantity",
"type" : "long"
}, {
"name" : "imbalance",
"type" : "long"
}, {
"name" : "imbalanceDir",
"type" : "string"
}, {
"name" : "symbol",
"type" : "string"
}, {
"name" : "farPrice",
"type" : "int"
}, {
"name" : "nearPrice",
"type" : "int"
}, {
"name" : "refPrice",
"type" : "int"
}, {
"name" : "crossType",
"type" : "string"
}, {
"name" : "priceVarianceInd",
"type" : "string"
}
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,

"msgType": "I",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
"quantity": "120"
"imbalance": "60"
"imbalanceDir": "B"
"symbol": "ZVZZT",
"farPrice": "120"
"nearPrice": "121"
"refPrice": "119"
"crossType": "O"
"priceVarianceInd": "L"
}

Retail Price Improvement Indicator (RPII)

Identifies a retail interest indication of the Bid, Ask or both the Bid and Ask for Nasdaq-listed securities.

Retail Interest Message:

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	Retail Interest message
Stock Locate	symbolLocate	int	Locate code identifying the security
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight

			See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Stock	symbol	string	Stock symbol, right padded with spaces
Interest Flag	interest	string	"B" = RPI orders available on the buy side "S" = RPI orders available on the sell side "A" = RPI orders available on both sides (buy and sell) "N" = No RPI orders available.

Direct Listing with Capital Raise Price Discovery Message

The following message is disseminated only for Direct Listing with Capital Raise (DLCR) securities. Nasdaq begins disseminating messages once per second as soon as the DLCR volatility test has successfully passed.

Field	Name	Type	Notes
SOUP Partition	SoupPartition	int	Message partition identifier. Ignore.
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	"O" = Direct Listing with Capital Raise Message
Stock Locate	symbolLocate	int	Locate code identifying the security
Tracking Number + Timestamp	uniqueTimestamp	long	Message Tracking number, compound key containing: • bytes 0-1 = Nasdaq internal tracking number • bytes 2-7 = Timestamp in nanoseconds from midnight See the `TrackingID` class in the `com.nasdaq.ncdsclient.internal.utils` package within the SDK.
Stock	symbol	string	Stock Symbol, right padded with spaces
Open Eligibility Status	state	string	Indicates if the security is eligible to be released for trading "N": Not Eligible "Y": Eligible
Minimum Allowable Price	minAllowablePrice	int	20% below Registration Statement Lower Price
Maximum Allowable Price	maxAllowablePrice	int	80% above Registration Statement Highest Price

Near Execution Price	nearExecPrice	int	The current reference price when the DLCR volatility test has successfully passed
Near Execution Time	nearExecTime	long	The time at which the near execution price was set
Lower Price Range Collar	lowerCollarPrice	int	Indicates the price of the Lower Auction Collar Threshold (10% below the Near Execution Price)
Upper Price Range Collar	upperCollarPrice	int	Indicates the price of the Upper Auction Collar Threshold (10% above the Near Execution Price)

Schema


```
{
        "type" : "record",
        "name" : " SeqOpenEligibilityMessage",
        "fields" : [ {
         "name" : "SoupPartition",
         "type" : "int"
        }, {
         "name" : "SoupSequence",
         "type" : "long"
        }, {
         "name" : "msgType",
         "type" : "string"
        }, {
         "name" : "symbolLocate",
         "type" : "int"
        }, {
         "name" : "uniqueTimestamp",
         "type" : "long"
        }, {
         "name" : "symbol",
         "type" : "string"
        }, {
         "name" : "state",
         "type" : "string"
        }, {
         "name" : "minAllowablePrice",
         "type" : "int"
        }, {
         "name" : "maxAllowablePrice",
         "type" : "int"
        }, {
         "name" : "nearExecPrice",
         "type" : "int"
        }, {
```

"name" : "nearExecTime",
"type" : "long"
}, {
"name" : " lowerCollarPrice",
"type" : "int"
}, {
"name" : "upperpricerangecollar",
"type" : "int"
}
]
}

Sample

{
"SoupPartition": 0,
"SoupSequence": 123,
"msgType": "I",
“symbolLocate”: 0,
"uniqueTimestamp": 7238625218217,
“symbol”: "ZVZZT"
"state": "Y"
"minAllowablePrice": "60"
"maxAllowablePrice": "70"
"nearExecPrice": "60",
"nearExecTime": "7238625218217"
"lowerCollarPrice": "45"
"upperpricerangecollar": "80"
}

Appendix A - Documentation and Revision Control Log

April 28, 2023 –

- Introduction of Direct Listing with Capital Raise Message and new Imbalance Direction of Paused to NOII Message

July 14, 2022 –

- Due to the launch of non-integer leverage factors, updated ETP Leverage Factor from Section "Stock related messages//Stock Directory" page 9.

January 5, 2022 –

- Added Documentation for Extended Trading Close.

Appendix B – Stock Symbol Convention

For Nasdaq-listed issues, Nasdaq currently restricts its symbol length to a maximum of 8 characters. For common stock issuances, Nasdaq, PSX and BX will only assign root symbols of 1 to 4 characters in length with possible fifth and or sixth character denoting a suffix. In certain instances, a dot "." delimiter may be applied to symbols after the root and between the suffix e.g., XXXX.A. For subordinate securities, Nasdaq and BX will assign a 5 character symbol for which the last character relays information about the issue class or issue type. For the current list of fifth and or six character symbol suffixes, please refer to Ticker Symbol Convention page on the NasdaqTrader website.

For NYSE, NYSE American and NYSE Arca-listed securities with subordinate issue types, please refer to Ticker Symbol Convention page on the Nasdaq Trader website.

Appendix C – Trading Action Reason Codes

For Nasdaq-listed issues, Nasdaq acts as the primary market and has the authority to institute a trading halt or trading pause in an issue due to news dissemination or regulatory reasons.

For CQS issues, Nasdaq abides by any regulatory trading halts and trading pauses instituted by the primary or listing market as appropriate.

For both issue types, Nasdaq may also halt trading for operational reasons.

Nasdaq will send out a trading action message to inform its market participants when the trading status of an issue changes. For informational purposes, Nasdaq also attempts to provide the reason for each trading action update. For bandwidth efficiency reasons, Nasdaq uses a 4-byte code for the reason on its outbound data feeds.

Reason Codes For Trading Halt Actions

Code	Value
T1	Halt News Pending
T2	Halt News Disseminated
T5	Single Security Trading Pause In Effect
T6	Regulatory Halt — Extraordinary Market Activity
T8	Halt ETF
T12	Trading Halted; For Information Requested by Listing Market
H4	Halt Non-Compliance
H9	Halt Filings Not Current
H10	Halt SEC Trading Suspension
H11	Halt Regulatory Concern
O1	Operations Halt; Contact Market Operations
LUDP	Volatility Trading Pause
LUDS	Volatility Trading Pause – Straddle Condition
MWC1	Market Wide Circuit Breaker Halt – Level 1
MWC2	Market Wide Circuit Breaker Halt – Level 2
MWC3	Market Wide Circuit Breaker Halt – Level 3
MWC0	Market Wide Circuit Breaker Halt – Carry over from previous day
IPO1	IPO Issue Not Yet Trading
M1	Corporate Action
M2	Quotation Not Available
Space	Reason Not Available

Reason Codes for Quotation/Trading Resumption Actions	
Code	**Value**
T3	News and Resumption Times
T7	Single Security Trading Pause / Quotation Only Period
R4	Qualifications Issues Reviewed/Resolved; Quotations/Trading to Resume
R9	Filing Requirements Satisfied/Resolved; Quotations/Trading To Resume
C3	Issuer News Not Forthcoming; Quotations/Trading To Resume
C4	Qualifications Halt ended Maintenance Requirements Met; Resume
C9	Qualifications Halt Concluded; Filings Met; Quotes/Trades To Resume
C11	Trade Halt Concluded By Other Regulatory Auth.; Quotes/Trades Resume
MWCQ	Market Wide Circuit Breaker Resumption
R1	New Issue Available
R2	Issue Available
IPOQ	IPOSecurity Released for Quotation (Nasdaq Securities Only)
IPOE	IPO Security — Positioning Window Extension (Nasdaq Securities Only)
Space	Reason Not Available
T3	News and Resumption Times
T7	Single Security Trading Pause / Quotation Only Period

Appendix D – Issue Classification Values

Identifies the security class for the issue as assigned by Nasdaq

Codes for Issue Classification Values	
Code	**Value**
A	American Depositary Share
B	Bond
C	Common Stock
F	Depository Receipt
I	144A
L	Limited Partnership
N	Notes
O	OrdinaryShare
P	PreferredStock
Q	Other Securities
R	Right
S	Shares of Beneficial Interest
T	Convertible Debenture
U	Unit
V	Units/Benif Int
W	Warrant

Appendix E – Issue Sub Type Values

Codes for Issue Classification Values

Code	Value
A	Preferred Trust Securities
AI	Alpha IndexETNs
B	Index Based Derivative
C	Common Shares
CB	Commodity Based Trust Shares
CF	Commodity Futures Trust Shares
CL	Commodity-Linked Securities
CM	Commodity Index Trust Shares
CO	Collateralized Mortgage Obligation
CT	Currency Trust Shares
CU	Commodity-Currency-Linked Securities
CW	Currency Warrants
D	Global Depositary Shares
E	ETF-Portfolio Depositary Receipt
EG	Equity GoldShares
EI	ETN-Equity Index-Linked Securities
EM	NextShares Exchange Traded Managed Fund*
EN	Exchange Traded Notes
EU	Equity Units
F	HOLDRS
FI	ETN-Fixed Income-Linked Securities
FL	ETN-Futures-Linked Securities
G	Global Shares
I	ETF-Index Fund Shares
IR	Interest Rate
IW	Index Warrant
IX	Index-Linked Exchangeable Notes
J	Corporate Backed Trust Security
L	Contingent Litigation Right

LL	Identifies securities of companies that are set up as a Limited Liability Company (LLC)
M	Equity-Based Derivative
MF	Managed FundShares
ML	ETN-Multi-Factor Index-Linked Securities
MT	Managed Trust Securities
N	NY Registry Shares
O	Open Ended Mutual Fund
P	Privately Held Security
PP	Poison Pill
PU	Partnership Units
Q	Closed-End Funds
R	Reg-S
RC	Commodity-Redeemable Commodity-Linked Securities
RF	ETN-Redeemable Futures-Linked Securities
RT	REIT
RU	Commodity-Redeemable Currency-Linked Securities
S	SEED
SC	Spot RateClosing
SI	Spot Rate Intraday
T	Tracking Stock
TC	Trust Certificates
TU	Trust Units
U	Portal
V	Contingent Value Right
W	Trust Issued Receipts
WC	World Currency Option
X	Trust
Y	Other
Z	NotApplicable

* NextShares Exchange Traded Managed Funds (ETMFs) launched in February 2016. NextShares prices are stated in proxy price on this feed. For more information, please refer to the NextShares Homepage.