Nasdaq Best Bid & Offer Products

Products Overview

Nasdaq's streaming protocols have been expanded to allow for the publishing of BBO products, including markets outside of Nasdaq. Those products/markets currently include:

- Nasdaq Best Bid & Offer (QBBO) is a data feed product offered by The Nasdaq Stock Market, LLC. QBBO provides the Nasdaq exchange's best bid and offer position for securities listed on the Nasdaq, New York Stock Exchange (NYSE), and other U.S. regional exchanges. For market data administration purposes, QBBO is part of the Nasdaq Basic entitlement.

- BX Best Bid & Offer (BX BBO) is a data feed product offered by The Nasdaq Stock Market, LLC. BX BBO provides the BX exchange's best bid and offer position for securities listed on the Nasdaq, New York Stock Exchange (NYSE), and other U.S. regional exchanges.

- PSX Best Bid & Offer (PSX BBO) is a data feed product offered by The Nasdaq Stock Market, LLC. PSX BBO provides the PSX exchange's best bid and offer position for securities listed on the Nasdaq, New York Stock Exchange (NYSE), and other U.S. regional exchanges.

- The Bruce Best Bid and Offer (MBBO) is a direct data feed product offered by The Bruce ATS, providing the platform's best bid and offer position for securities traded.

Market data distributors may use any of the above data feeds to feed dynamically updating stock tickers, portfolio trackers, trade alert programs, time and quote graphs, and other display systems.

Please note that the below specification only includes the BBO portion of a markets data product offerings. Please refer to the Last Sale specifications for information on Last Sale market data products.

Market data products with channelized distributions will have those channels persisted in the cloud offerings from Nasdaq.

Feed	Topic Name	Timing
BBO Core	QBBO-A-CORE-V2	Realtime
BBO Core	QBBO-B-CORE-V2	Realtime
BBO Core	QBBO-C-CORE-V2	Realtime
BBO Core	QBBO-A-CORE-V2-DELAYED	Delayed
BBO Core	QBBO-B-CORE-V2-DELAYED	Delayed
BBO Core	QBBO-C-CORE-V2-DELAYED	Delayed
BX BBO	QBBO-A-BX-V2	Realtime

BX BBO	QBBO-B-BX-V2	Realtime
BX BBO	QBBO-C-BX-V2	Realtime
PSX BBO	QBBO-A-PSX-V2	Realtime
PSX BBO	QBBO-B-PSX-V2	Realtime
PSX BBO	QBBO-C-PSX-V2	Realtime
Bruce BBO	QBBO-BRUCE-V2	Realtime

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 unsigned big-endian (network byte order) binary encoded numbers.

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

Timestamps reflects the Nasdaq system time at which the outbound message was generated. Nasdaq states time as the number of nanoseconds past midnight. The time zone is U.S. Eastern Time.

Timestamp for Bruce feeds reflect the system time when the outbound message was generated and are represented as the number of nanoseconds since the start of the unix epoch (January 1, 1970).

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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System Event Message

The System Event message is used to signal key market or data feed control events. BBO will support the System Event messages.

Details

<table>
<tr><th>Field</th><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>SOUP Sequence</td><td>SoupSequence</td><td>long</td><td>Auto-incrementing message sequence number.</td></tr>
<tr><td>Message Type</td><td>msgType</td><td>string</td><td>S = System Event</td></tr>
<tr><td>Tracking Number</td><td>trackingID</td><td>Int</td><td>Nasdaq internal tracking number.
Always 0 for Bruce.</td></tr>
<tr><td>`Time Stamp</td><td>timestamp</td><td>timestamp</td><td>Timestamp</td></tr>
<tr><td>Event Code</td><td>event</td><td>String</td><td>Denotes the type of event for which the message is being generated. See list below for allowable values.
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>O</td><td>Start of Transmissions: Denotes that BBO has started its daily transmission schedule</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.</td></tr>
<tr><td>C</td><td>End of Transmissions: Denotes that BBO has completed its daily transmission schedule.</td></tr>
</table>
</td></tr>
</table>

Schema


```
{
  "type" : "record",
  "name" : "SeqSystemEventMessage",
  "namespace" :
"com.nasdaq.datalink.streaming.bbo",
  "fields" : [ {
    "name" : "SoupSequence",
    "type" : "long"
  }, {
    "name" : "msgType",
    "type" : "string"
  }, {
    "name" : "trackingID",
```


Sample


```
{
"SoupSequence": 123,
"msgType": "S",
"trackingID": 0,
“timestamp”: 7238625218217,
“event”: O
}
```

```
    "type" : "int"
  }, {
    "name" : "timestamp",
    "type" : "long"
  }, {
    "name" : "event",
    "type" : "string"
  } ],
  "version" : "1"
}
```


Quotation Message

BBO will broadcast a real-time update every time that the exchange's best bid and offer quote is updated during the trading day.

Details

<table>
<tr><th>Field</th><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>SOUP Sequence</td><td>SoupSequence</td><td>long</td><td>Auto-incrementing message sequence number.</td></tr>
<tr><td>Message Type</td><td>msgType</td><td>string</td><td>Q = Quotation Message</td></tr>
<tr><td>Tracking Number</td><td>trackingID</td><td>Int</td><td>Nasdaq internal tracking number</td></tr>
<tr><td>Time Stamp</td><td>timestamp</td><td>timestamp</td><td>Nanos since midnight</td></tr>
<tr><td>Symbol</td><td>symbol</td><td>string</td><td>Denotes the security symbol for the issue in the Nasdaq execution system.</td></tr>
<tr><td>Security Class</td><td>market</td><td>string</td><td>Indicates the primary listing market for the stock. The allowable values are as follows:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>Q</td><td>The Nasdaq Stock Market</td></tr>
<tr><td>N</td><td>NYSE</td></tr>
<tr><td>A</td><td>NYSE American</td></tr>
<tr><td>P</td><td>NYSE Arca</td></tr>
<tr><td>M</td><td>NYSE Texas</td></tr>
<tr><td>Z</td><td>BATS</td></tr>
<tr><td>V</td><td>Investors' Exchange LLC</td></tr>
</table></td></tr>
<tr><td>Nasdaq Best Bid Price</td><td>bidPrice</td><td>double</td><td>Denotes the Nasdaq best bid price – the highest price for market buy order(s) in the Nasdaq system.</td></tr>
<tr><td>Nasdaq Best Bid Size</td><td>bidQuantity</td><td>int</td><td>Denotes the aggregated number of shares available for display within the Nasdaq market center system at the Nasdaq best bid price.</td></tr>
<tr><td>Nasdaq Best Offer Price</td><td>askPrice</td><td>double</td><td>Denotes the Nasdaq exchange's best offer price - the lowest price for market sell order(s) in the Nasdaq system.</td></tr>
<tr><td>Nasdaq Best Offer Size</td><td>askQuantity</td><td>int</td><td>Denotes the aggregated number of shares available for display within the Nasdaq market center system at the Nasdaq best offer price.</td></tr>
</table>

<table>
<tr><th>Schema</th><th>Sample</th></tr>
<tr><td>

```
{
 "type" : "record",
 "name" : "SeqQuoteMessage",
 "namespace" : "com.nasdaq.datalink.streaming.bbo",
 "fields" : [ {
  "name" : "SoupSequence",
  "type" : "long"
 }, {
  "name" : "msgType",
  "type" : "string"
 }, {
  "name" : "trackingID",
  "type" : "int"
 }, {
  "name" : "timestamp",
  "type" : "long"
 }, {
  "name" : "symbol",
  "type" : "string"
 }, {
  "name" : "market",
  "type" : "string"
 }, {
  "name" : "bidPrice",
  "type" : "double"
 }, {
  "name" : "bidQuantity",
  "type" : "int"
 }, {
  "name" : "askPrice",
  "type" : "double"
 }, {
  "name" : "askQuantity",
  "type" : "int"
 } ],
 "version" : "1"
}
```

</td><td>

```
{
"SoupSequence": 123,
"msgType": "Q",
"trackingID": 0,
“timestamp”: 7238625218217,
"symbol": "ZVZZT",
"market": "Q",
"bidPrice": 100.11,
"bidQuantity": 500,
"askPrice": 100.13,
"askQuantity": 200
}
```

</td></tr>
</table>

Retail Price Interest Indicator (PII)

Retail Price Interest Indicator is only available on BX BBO.

Details

Field	Name	Type	Description
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	N = Retail Interest message

Tracking Number	trackingID	Int	Nasdaq internal tracking number
Time Stamp	timestamp	timestamp	Timestamp
Stock	symbol	string	Denotes the security symbol for the issue in the Nasdaq execution system.
Interest Flag	interest	string	<table><tr><th>Code</th><th>Value</th></tr><tr><td>B</td><td>PI orders available on the buy side</td></tr><tr><td>S</td><td>PI orders available on the sell side</td></tr><tr><td>A</td><td>PI orders available on both sides (buy and sell)</td></tr><tr><td>N</td><td>No PI orders available</td></tr></table>

Schema

```
{
  "type" : "record",
  "name" : "SeqRetailInterestMessage",
  "namespace" : "com.nasdaq.datalink.streaming.bbo",
  "fields" : [ {
    "name" : "SoupSequence",
    "type" : "long"
  }, {
    "name" : "msgType",
    "type" : "string"
  }, {
    "name" : "trackingID",
    "type" : "int"
  }, {
    "name" : "timestamp",
    "type" : "long"
  }, {
    "name" : "symbol",
    "type" : "string"
  }, {
    "name" : "interest",
    "type" : "string"
  } ],
  "version" : "1"
}
```

Sample


```
{
"SoupSequence": 123,
"msgType": "N",
"trackingID": 0,
“timestamp”: 7238625218217,
"symbol": "ZVZZT",
"market": "Q",
"interest": "A"
}
```


IPO Quoting Period Update

Indicates the anticipated IPO quotation release time of a security.

IPO Quoting is only available on Nasdaq QBBO.

Details

Field	Name	Type	Description
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	K = IPO Quoting Period Update Message
Tracking Number	trackingID	Int	Nasdaq internal tracking number
Time Stamp	timestamp	timestamp	Timestamp
Stock	symbol	string	Denotes the security symbol for the issue in the Nasdaq execution system.
IPO Quotation Release Time	releaseTime	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 IPO Price will be set to 0
IPO Quotation Release Qualifier	releaseQualifier	string	**Code** – **Description** 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 used when Nasdaq Market Operations cancels or postpones the release of the IPO instrument.*
IPO Price	ipoPrice	double	Denotes the IPO price to be used for intraday net change calculations.

Schema


```
{
  "type" : "record",
  "name" : "SeqIPOQuotePeriodMessage",
  "namespace" : "com.nasdaq.datalink.streaming.bbo",
  "fields" : [ {
    "name" : "SoupSequence",
    "type" : "long"
  }, {
    "name" : "msgType",
    "type" : "string"
  }, {
    "name" : "trackingID",
    "type" : "int"
  }, {
    "name" : "timestamp",
    "type" : "long"
  }, {
```


Sample


```
{
"SoupSequence": 123,
"msgType": "K",
"trackingID": 0,
“timestamp”: 7238625218217,
"symbol": "ZVZZT",
"releaseTime": 36000,
"releaseQualifier": "A",
"ipoPrice": 15.00
}
```

```
    "name" : "symbol",
    "type" : "string"
  }, {
    "name" : "releaseTime",
    "type" : "int"
  }, {
    "name" : "releaseQualifier",
    "type" : "string"
  }, {
    "name" : "ipoPrice",
    "type" : "double"
  } ],
  "version" : "1"
}
```


Administrative Messages 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.

Only values “H” and “T” will be available on Bruce.

Details

Field	Name	Type	Description
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	H = Trading Action
Tracking Number	trackingID	Int	Nasdaq internal tracking number. Always 0 for Bruce.
Time Stamp	timestamp	timestamp	Timestamp
Issue Symbol	symbol	string	Nasdaq-assigned indicator for issue for which the trading action message is being generated. For details on Nasdaq symbology, please refer to Appendix B.

<table>
<tr><td>Security Class</td><td>securityClass</td><td>string</td><td>Indicates the primary listing market for the issue.
Allowable values are:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>Q</td><td>Nasdaq</td></tr>
<tr><td>N</td><td>NYSE</td></tr>
<tr><td>A</td><td>NYSE American</td></tr>
<tr><td>P</td><td>NYSE Arca</td></tr>
<tr><td>M</td><td>NYSE Texas</td></tr>
<tr><td>Z</td><td>BATS</td></tr>
<tr><td>V</td><td>Investors’ Exchange, LLC</td></tr>
</table>
Not available on Bruce.</td></tr>
<tr><td>Current Trading State</td><td>tradingState</td><td>string</td><td>Reflects the current trading state for the issue. The allowable values are:
<table>
<tr><th>Code</th><th>Value</th></tr>
<tr><td>H</td><td>Halt in effect (Cross all U.S. equity exchanges)</td></tr>
<tr><td>P</td><td>Paused across all U.S. Equity markets / SROs (Nasdaq-listed securities only)</td></tr>
<tr><td>Q</td><td>Quote only period in effect (Cross all U.S. equity changes)</td></tr>
<tr><td>T</td><td>Trading on Nasdaq Market</td></tr>
</table></td></tr>
<tr><td>Reason</td><td>reason</td><td>string</td><td>Reflects the Market Ops or Market Watch code for the trading state change. Refer to Appendix C for current code list.

Not available on Bruce.</td></tr>
</table>

<table>
<tr><th>Schema</th><th>Sample</th></tr>
<tr><td>

```
{
"type" : "record",
 "name" : "SeqTradingActionMessage",
 "namespace" : "com.nasdaq.datalink.streaming.bbo",
 "fields" : [ {
  "name" : "SoupSequence",
  "type" : "long"
 }, {
  "name" : "msgType",
  "type" : "string"
 }, {
  "name" : "trackingID",
  "type" : "int"
 }, {
  "name" : "timestamp",
  "type" : "long"
 }, {
  "name" : "symbol",
  "type" : "string"
 }, {
```

</td><td>

```
{
"SoupSequence": 123,
"msgType": "H",
"trackingID": 0,
“timestamp”: 7238625218217,
"symbol": "ZVZZT",
"securityClass": "Q",
"tradingState": "T",
"reason": "M1"
}
```

</td></tr>
</table>

```
    "name" : "securityClass",
    "type" : "string"
  }, {
    "name" : "tradingState",
    "type" : "string"
  }, {
    "name" : "reason",
    "type" : "string"
  } ],
  "version" : "1"
}
```


Stock Directory

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

Market data vendors 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

<table>
<tr><th>Field</th><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>SOUP Sequence</td><td>SoupSequence</td><td>long</td><td>Auto-incrementing message sequence number.</td></tr>
<tr><td>Message Type</td><td>msgType</td><td>string</td><td>R = Stock Directory Message</td></tr>
<tr><td>Tracking Number</td><td>trackingID</td><td>Int</td><td>Nasdaq internal tracking number.
Always 0 for Bruce.</td></tr>
<tr><td>Time Stamp</td><td>timestamp</td><td>timestamp</td><td>Timestamp</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>M</td><td>NYSE Texas</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>
</table>
Not available on Bruce.</td></tr>
</table>

<table>
<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><space></td><td>Company is in compliance, if Nasdaq-listed issue</td></tr>
</table>

Not available on Bruce.</td></tr>
<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 orders for this security.</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>
Not available on Bruce.</td></tr>
<tr><td>Issue Classification</td><td>issueClass</td><td>String</td><td>Identifies the security class for the issue as assigned by Nasdaq. See Appendix for allowable values.

Not available on Bruce.</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.
Not available on Bruce.</td></tr>
</table>

<table>
<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>shortThreshold</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>Not available on Bruce.</td></tr>
<tr><td>IPO Flag</td><td>ipo</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>Not available</td></tr></table>Not available on Bruce.</td></tr>
<tr><td>LULD Reference Price Tier</td><td>luldTier</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 applicable</td></tr></table>Not available on Bruce.</td></tr>
<tr><td>ETP Flag</td><td>etf</td><td>String</td><td>Indicates whether the security is an exchange traded product (ETP):<table><tr><th>Code</th><th>Definition</th></tr></table></td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td><table><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>Not available on Bruce.</td></tr>
<tr><td>ETP Leverage Factor</td><td>etfFactor</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.

Not available on Bruce.</td></tr>
<tr><td>Inverse Indicator</td><td>inverseETF</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></table>Example: An ETP Leverage Factor of 3 and an Inverse value of ‘Y’ indicates the ETP will decrease by a value of 3.

Not available on Bruce.</td></tr>
</table>

<table>
<tr><th>Schema</th><th>Sample</th></tr>
<tr><td><pre>{
 "type" : "record",
 "name" : "SeqDirectoryMessage",
 "namespace" : "com.nasdaq.datalink.streaming.bbo",
 "fields" : [{
  "name" : "SoupSequence",
  "type" : "long"
 }, {
  "name" : "msgType",
  "type" : "string"
 }, {</pre></td><td><pre>{
"SoupSequence": 123,
"msgType": "R",
"trackingID": 0,
“timestamp”: 7238625218217,
"symbol": "ZVZZT",
"marketCategory": "Q",
"fsi": "N",
"roundLotSize": 250,
"roundLotOnly": "N",
"issueClass": "L",</pre></td></tr>
</table>

```
    "name" : "trackingID",
    "type" : "int"
  }, {
    "name" : "timestamp",
    "type" : "long"
  }, {
    "name" : "symbol",
    "type" : "string"
  }, {
    "name" : "marketCategory",
    "type" : "string"
  }, {
    "name" : "fsi",
    "type" : "string"
  }, {
    "name" : "roundLotSize",
    "type" : "int"
  }, {
    "name" : "roundLotOnly",
    "type" : "string"
  }, {
    "name" : "issueClass",
    "type" : "string"
  }, {
    "name" : "issueSubtype",
    "type" : "string"
  }, {
    "name" : "authenticity",
    "type" : "string"
  }, {
    "name" : "shortThreshold",
    "type" : "string"
  }, {
    "name" : "ipo",
    "type" : "string"
  }, {
    "name" : "luldTier",
    "type" : "string"
  }, {
    "name" : "etf",
    "type" : "string"
  }, {
    "name" : "etfFactor",
    "type" : "int"
  }, {
    "name" : "inverseETF",
    "type" : "string"
  } ],
  "version" : "1"
}
```

```
"issueSubtype": "MF",
"authenticity": "T",
"shortThreshold": "N",
"ipo": "N",
"luldTier": "1",
"etf": "Y",
"etfFactor": 2,
"inverseETF": "N",
}
```

Regulation SHO Short Sale Price Test Restricted Indicator

In November 2010, 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 introduced 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	Type	Description
SOUP Sequence	soupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	Y = Short Sale Restriction Indicator
Tracking Number	trackingID	Int	Nasdaq internal tracking number. Always 0 for Bruce.
Time Stamp	timestamp	timestamp	Timestamp
Issue Symbol	symbol	string	Nasdaq-assigned indicator for issue for which the short sale restriction indicator message is being generated. For details on Nasdaq symbology, please refer to Appendix B.
Reg SHO Action	regSHOAction	string	Denotes the Reg SHO Short Sale Price Test Restriction status for the issue at the time of the message dissemination. Allowable values are: **Code** / **Definition** 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	Sample

{
"type" : "record",
"name" : "SeqRegSHORestrictionMessage",
"namespace" :
"com.nasdaq.datalink.streaming.bbo",
"fields" : [{
"name" : "SoupSequence",
	{
	"SoupSequence": 123,
	"msgType": "Y",
	"trackingID": 0,
	“timestamp”: 7238625218217,
	"symbol": " ZVZZT",
	"regSHOAction": "1"

"type" : "long"
}, {
"name" : "msgType",
"type" : "string"
}, {
"name" : "trackingID",
"type" : "int"
}, {
"name" : "timestamp",
"type" : "long"
}, {
"name" : "symbol",
"type" : "string"
}, {
"name" : "regSHOAction",
"type" : "string"
}],
"version" : "1"
}
	}

Market-Wide Circuit Breaker (MWCB) Message – Decline Level

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

MWCB Decline message is not included on Bruce BBO.

Details

Field	Name	Type	Description
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	V = Market wide circuit breaker Decline Level Message
Tracking Number	trackingID	Int	Nasdaq internal tracking number
Time Stamp	timestamp	timestamp	Timestamp
Level 1	level1	double	Denotes the MWCB Level 1 Value.
Level 2	level2	double	Denotes the MWCB Level 2 Value.
Level 3	level3	double	Denotes the MWCB Level 3 Value.

Schema	Sample

{
"type" : "record",
"name" : "SeqMWCBDeclineMessage",
"namespace" :
"com.nasdaq.datalink.streaming.bbo",
"fields" : [{
"name" : "SoupSequence",
"type" : "long"
	{
	"SoupSequence": 123,
	"msgType": "V",
	"trackingID": 0,
	“timestamp”: 7238625218217,
	"level1": 5998.77474873,
	"level2": 4225.6737573,
	"level3": 3567.35673

}, {
"name" : "msgType",
"type" : "string"
}, {
"name" : "trackingID",
"type" : "int"
}, {
"name" : "timestamp",
"type" : "long"
}, {
"name" : "level1",
"type" : "double"
}, {
"name" : "level2",
"type" : "double"
}, {
"name" : "level3",
"type" : "double"
}],
"version" : "1"
}
	}

Market-Wide Circuit Breaker (MWCB) Message – Status

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

MWCB Status is not available on Bruce BBO

Details

Field	Name	Type	Description
SOUP Sequence	SoupSequence	long	Auto-incrementing message sequence number.
Message Type	msgType	string	W = Market-Wide Circuit Breaker Status message
Tracking Number	trackingID	Int	Nasdaq internal tracking number
Time Stamp	timestamp	timestamp	Timestamp
Breached Level	breachlevel	string	Denotes the MWCB Level that was breached. “1” = Level 1 “2” = Level 2 “3” = Level 3

Schema	Sample

{
"type" : "record",
"name" : "SeqMWCBStatusMessage",
"namespace" : "com.nasdaq.datalink.streaming.bbo",
"fields" : [{
"name" : "SoupSequence",
	{
	"SoupSequence": 123,
	"msgType": "W",
	"trackingID": 0,
	“timestamp”: 7238625218217,
	"breachLevel": "1"

<table>
<tr><td>
"type" : "long"
}, {
"name" : "msgType",
"type" : "string"
}, {
"name" : "trackingID",
"type" : "int"
}, {
"name" : "timestamp",
"type" : "long"
}, {
"name" : "breachLevel",
"type" : "string"
}],
"version" : "1"
}
</td><td>}</td></tr>
</table>

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 marketplace.

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

Operational Halt message is not included on Bruce BBO.

Details

<table>
<tr><th>Field</th><th>Name</th><th>Type</th><th>Description</th></tr>
<tr><td>SOUP Sequence</td><td>SoupSequence</td><td>long</td><td>Auto-incrementing message sequence number.</td></tr>
<tr><td>Message Type</td><td>msgType</td><td></td><td>h = Operational Halt</td></tr>
<tr><td>Tracking Number</td><td>trackingID</td><td>Int</td><td>Nasdaq internal tracking number</td></tr>
<tr><td>Time Stamp</td><td>timestamp</td><td>timestamp</td><td>Timestamp</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 Code</td><td>marketCode</td><td>String</td><td><table><tr><th>Code</th><th>Value</th></tr><tr><td>Q</td><td>Nasdaq</td></tr><tr><td>B</td><td>BX</td></tr><tr><td>X</td><td>PSX</td></tr></table></td></tr>
<tr><td>Operational Halt Action</td><td>action</td><td>String</td><td><table><tr><th>Code</th><th>Value</th></tr><tr><td>H</td><td>Operationally Halted on the identified Market</td></tr><tr><td>T</td><td>Operational Halt has been lifted and Trading resumed</td></tr></table></td></tr>
</table>

Schema	Sample
{ "type" : "record", "name" : "SeqOperationalHaltMessage", "namespace" : "com.nasdaq.datalink.streaming.bbo", "fields" : [{ "name" : "SoupSequence", "type" : "long" }, { "name" : "msgType", "type" : "string" }, { "name" : "trackingID", "type" : "int" }, { "name" : "timestamp", "type" : "long" }, { "name" : "symbol", "type" : "string" }, { "name" : "marketCode", "type" : "string" }, { "name" : "action", "type" : "string" }], "version" : "1" }	{ "SoupSequence": 123, "msgType": "h", "trackingID": 0, “timestamp”: 7238625218217, "symbol": "ZVZZT", "marketCode": "Q", "action": "H" }

Appendix A – Stock Symbol Convention

For Nasdaq-listed issues, Nasdaq currently restricts its symbol length to a maximum of 8 characters. For common stock issuances, Nasdaq, BX and PSX 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 eg., XXXX.A. For subordinate securities, Nasdaq, BX, and PSX 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 Nasdaq Trader 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 B – 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, BX and BX abide by any regulatory trading halts and trading pauses instituted by the primary or listing market as appropriate.

For all issue types, Nasdaq, BX and/or BX may also halt trading for operational reasons. Nasdaq, BX and/or BX will send out a trading action message to inform its market participants when the trading status of an issue changes. For informational purposes, Nasdaq and BX also attempt to provide the reason for each trading action update. For bandwidth efficiency reasons, Nasdaq, BX and BX use 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 Affect
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	IPO Security Released for Quotation (Nasdaq Securities Only)
IPOE	IPO Security — Positioning Window Extension (Nasdaq Securities Only)
<space>	Reason Not Available

For the current list of regulatory halts, please refer to the Trading Halts page on the Nasdaq Trader website.

Appendix C - 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	Ordinary Share
P	Preferred Stock
Q	Other Securities
R	Right
S	Shares of Beneficial Interest
T	Convertible Debenture
U	Unit
V	Units/Benif Int
W	Warrant

Appendix D - Issue Sub-Type Values

CODES FOR ISSUE CLASSIFICATION VALUES	
Code	**Value**
A	Preferred Trust Securities
AI	Alpha Index ETNs
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 Gold Shares

EI	ETN-Equity Index-Linked Securities
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 Fund Shares
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 Rate Closing
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	Not Applicable

Version Log:

BBO Version 4.0 **July 16, 2025**

Bruce ATS made available on NDL.

BBO Version 4.0 **June 23, 2025**

Added listing market center value “M” to reflect the addition of NYSE Texas as a listing market.

BBO Version 4.0 **June 16, 2025**

Released new version to accommodate for fractional share changes effective February 2026. All NextShares Exchange Traded Managed Funds Issue Sub Types removed.