Nasdaq Order Imbalance Snapshot

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Overview

Nasdaq Net Order Imbalance Snapshot (NOIS) is a direct data feed product offered by The Nasdaq Stock Market® .

For Net Order Imbalance (NOI) data for the full range of Nasdaq-listed issues, firms should process the NOIView, TotalView-ITCH, or TotalView-Aggregated data feeds.

NOIS provides only a snapshot of the Nasdaq net order imbalance data at selected time intervals for newswire providers. The snapshot times are as follows:

- **Nasdaq opening cross:** The NOIS dissemination time is two minutes prior to the Nasdaq Opening Cross event. For the standard Nasdaq Opening Cross, NOIS disseminates messages only for U.S. exchange-listed equities that show an imbalance shares amount equal to or more than 50,000 shares.
- **Nasdaq closing cross:** The NOIS dissemination times are 5 minutes prior to and 2 minutes prior to the Nasdaq Closing Cross event. For the Nasdaq Closing Cross, NOIS disseminates messages only for U.S. exchange-listed equities that show an imbalance shares amount equal to or more than 50,000 shares.
- **Nasdaq IPO cross:** NOIS messages are disseminated approximately 3 minutes and 13 minutes after the Trading Action – Quote resumption message is disseminated for the issue. NOIS will also be disseminated if the quotation window is extended for the IPO security. For the IPO cross, NOIS disseminates messages for Nasdaq-listed issues only that show an imbalance shares amount equal to or more than 50,000 shares.
- **Nasdaq halt cross:** Nasdaq will use the Halt Cross to release securities subject to a regulatory trading halt or single security trading pause. For the Halt Cross, NOIS messages will be disseminated approximately 3 minutes after the Trading Action – Quote resumption message is transmitted for the issue. NOIS will also be disseminated if the quotation window is extended for the halted or paused security. There is no share filter for

the halt cross. For the Halt Cross, NOIS disseminates messages for Nasdaq-listed issues only.

Architecture

The NOIS feed is made up of a series of sequenced messages. Each message is variable in length based on the message type and is composed of non-control ASCII bytes. The messages that make up the NOIS protocol are typically delivered using a higher level protocol that takes care of sequencing and delivery guarantees. Nasdaq offers the NOIS data feed in the MoldUDP protocol option only.

Data Types

All integer fields are bigendian (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

Message Formats

1.1 System Event Message

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

System Event Message				
Name	**Offset**	**Length**	**Value**	**Notes**
Timestamp	0	8	Integer	Time at which the directory message was generated. Refer to Data Types for field processing notes.
Message Type	8	1	Alpha	"S" = System Event Message
Event Code	9	1	Alpha	See System Event Codes below

Nasdaq supports the following event codes on a daily basis on the TotalView-ITCH data feed.

System Event Codes – Daily	
Code	**Explanation**
"O"	Start of Messages. Outside of time stamp messages, the start of day message is the first message sent in any trading day.
"S"	Start of System hours. This message indicates that NASDAQ is open and ready to start accepting orders.
"Q"	Start of Market hours. This message is intended to indicate that Market Hours orders are available for execution.
"M"	End of Market hours. This message is intended to indicate that Market Hours orders are no longer available for execution.
"E"	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
."C"	End of Messages. This is always the last message sent in any trading day.

1.2 Stock Related Messages

1.2.1 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.

Stock Directory

Name	Offset	Length	Type	Value/Description
Timestamp	0	8	Integer	Time at which the directory message was generated. Refer to Data Types for field processing notes.
Message Type	8	1	Alpha	"R" = Stock Directory Message
Symbol	9	8	Alpha	Denotes the security symbol for the issue in the NASDAQ execution system.
Market Category	19	1	Alpha	Indicates Listing market or listing market tier for the issue

Code	Definition
Nasdaq-Listed Instruments	
Q	Nasdaq Global Select Market℠
G	Nasdaq Global Market℠
S	Nasdaq Capital Market®
Non-Nasdaq-Listed Instruments	
N	New York Stock Exchange (NYSE)
A	NYSE Amex
P	NYSE Arca
Z	BATS Z Exchange
M	NYSE Texas
V	Investors' Exchange
F	Texas Exchange

RFU	18	1	Alpha	Reserved for future use
Round Lot Size	19	6	Integer	Indicates the number of shares that represent a round lot for the issue
Round Lots Only	25	1	Alpha	Indicates if Nasdaq system limits order entry for issue **Code** — **Definition** Y — Nasdaq system only accepts round lots N — Nasdaq system does not have any order size restrictions for this security. Odd and mixed lot orders are allowed.
Issue Classification	26	1	Alpha	Identifies the security class for the issues as assigned by Nasdaq. See Appendix for allowable values
Issue Sub Type	27	2	Alpha	Identifies the security sub-type for the issue as assigned by Nasdaq. See Appendix for allowable values.

1.2.2 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.

Stock Trading Action				
Name	**Offset**	**Length**	**Value**	**Notes**
Timestamp	0	8	Integer	Time at which the directory message was generated. Refer to Data Types for field processing notes.
Message Type	8	1	Alpha	"H" = Stock Trading Action
Symbol	9	8	Alpha	Denotes the security symbol for the issue in the NASDAQ execution system.
Trading State	17	1	Alpha	"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
Reason	18	1	Alpha	Trading Action reason

1.2.3 Net Order Imbalance Snapshot (NOIS) Message

NOIS Message				
Name	**Offset**	**Length**	**Value**	**Notes**
Timestamp	0	8	Integer	Time at which the NOII was generated. Refer to Data Types for field processing notes.
Message Type	8	1	Alpha	"I" = NOII Message
Imbalance Shares	9	9	Integer	Number of shares not paired at the Current Reference Price.
Imbalance Direction	18	1	Alpha	Indicates the market side of the imbalance "B" = buy imbalance "S" = sell imbalance "N" = no imbalance "O" = insufficient orders to calculate
Symbol	19	8	Alpha	Denotes the security symbol for which the NOII message is being generated
Near Price	27	10	Price	A hypothetical auction-clearing price for cross orders as well as continuous orders
Current Reference Price	37	10	Price	Indicates price at which the NOII shares are being calculated
Cross Type	47	1	Alpha	Denotes the type of Nasdaq cross for which the NOII message is being generated "O" = Open Cross "C" = Close Cross "H" = Intra-day Opening Cross for IPO and Halted/Paused securities

Support

For general product support and technical support for Nasdaq data feeds, please contact Clientsuccess@nasdaq.com.

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 Nasdaq Texas 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 Nasdaq Texas 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.

Documentation Revision Control Log

June 16, 2026: Nasdaq Net Order Imbalance Snapshot (NOIS) Version 2.20
Added additional market category value "F" to Stock Directory message to represent Texas Exchange.

June 23, 2025: Nasdaq Net Order Imbalance Snapshot (NOIS) Version 2.20
Added additional market category value "M" to Stock Directory message.

July 14, 2022: Nasdaq Net Order Imbalance Snapshot (NOIS) Version 2.20
Due to the launch of non-integer leverage factors, updated the Value/Description field of ETP Leverage Factor from section 1.2.1 page 7.

September 12, 2017: Nasdaq Net Order Imbalance Snapshot (NOIS) Version 2.20
Nasdaq added a new Market Category code in the Symbol Directory messages for the Investors' Exchange, LLC to distinguish IEX-listed issues. New market category code is "V".

December 22, 2015: Nasdaq Net Order Imbalance Snapshot (NOIS) Version 2.20
Released a new version of the NOIS documentation to support the following changes:

Added the Issue Classification and Issue Sub-type to the stock directory message to support the launch of Exchange Traded Managed Funds (ETMFs).

December 22, 2015: Nasdaq Net Order Imbalance Snapshot (NOIS) Version 2.10
Corrected the stock directory message to align with what is being disseminated from the data feed

March 9, 2015: Nasdaq Net Order Imbalance Snapshot (NOIS) Version 2.10
Added Stock Directory, along with associated Issue Classification, and Sub-type values to support future launch of Exchange Traded Managed Funds (ETMFs).

March 9, 2013: Nasdaq Net Order Imbalance Snapshot (NOIS) Version 2.10
Released a new version of the NOIS documentation to support the following changes:

Added the following Trading Action Reason Code for LULD to reflect when the National Best Bid is below the lower price band and/or the National Best Offer is above than the upper price band and the NMS Stock is not in a Limit State.

LUDS - Volatility Trading Pause – Straddle Condition

January 9, 2013: Nasdaq Net Order Imbalance Snapshot (NOIS) Version 2.10
Released a new version of the NOIS documentation to support the following changes:

Added the following Trading Action Reason Code:

- MWC0 - Market Wide Circuit Breaker Halt – Carry over from previous day

Removed the Trading State, "R", from the Stock Trading Action message.

November 6, 2012: Nasdaq Net Order Imbalance Snapshot (NOIS) Version 2.10
Released a new version of the NOIS documentation to support the following changes:

- Added the "P" value to the Trading State in the Stock Trading Message.
- Modified the values for the Trading Action Reason Codes. Added the following codes:

- LUDP - Volatility Trading Pause
- MWC1 - Market Wide Circuit Breaker Halt – Level 1
- MWC2 - Market Wide Circuit Breaker Halt – Level 2
- MWC3 - Market Wide Circuit Breaker Halt – Level 3
- MWCQ - Market Wide Circuit Breaker Resumption

- Removed the Trading Action values related to the Volatility Guard Program. Removed Trading State, "V". Eliminated Trading Action Reason Codes, V1 and V2.

April 6, 2011: Nasdaq Net Order Imbalance Snapshot (NOIS) Version 2.10
For Nasdaq Volatility Guard pilot program, Nasdaq added new Action and Reason codes for the Stock Trading Action message. New Action codes were V and R. New Reason codes were V1 and V2.

Please note that, due to the short duration of the Volatility Guard trading pause, no NOIS messages will be generated. Firms must use the Nasdaq TotalView-ITCH, Nasdaq TotalView-Aggregated or Nasdaq NOIView products for the Net Order Imbalance Indicator data related to Nasdaq Volatility Guard situations.

May 25, 2010: Nasdaq Net Order Imbalance Snapshot (NOIS) Version 2.10
Nasdaq added two new Trading Action Reason code values (T5 and T7) for single security trading pause situations.

Nasdaq also added note to indicate that it would follow the same NOIS dissemination rules for a single stock trading pause as it uses for a regulatory halt.

January 26, 2010: Nasdaq Net Order Imbalance Snapshot (NOIS) Version 2.10
Nasdaq releases the NOIS 2.10 specification in support of the equity symbology initiative. In NOIS 2.10, the symbol field was increased from 6 characters to 8 characters.

Nasdaq also updated the NOIS documentation to reflect that the Nasdaq Opening and Closing Crosses now include NYSE-, NYSE Amex-, and NYSE Arca-listed issues as well as Nasdaq-listed issues.

February 20, 2007: Nasdaq Net Order Imbalance Snapshot (NOIS) Version 2.00
Nasdaq releases the NOIS 2.00 specification document to the public.

For efficiency reasons, Nasdaq plans to move the NOIS product to a new system platform in the second quarter of 2007. In association with the platform change, Nasdaq will also modify the data formats to support 6-byte issue symbols as required under the new Nasdaq symbol plan. Please see Nasdaq Vendor Alert #2007-012 for the detailed customer migration plans.