TotalView ITCH FAQs

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Overview

Nasdaq TotalView offers the most complete market orderbook with full depth across all Nasdaq-, NYSE-, and regional-listed securities for a complete view of the markets. To give participants an even greater ability to find trading opportunities, TotalView incorporates Opening and Closing Auction data to show supply and demand leading up to the Cross.

Below are some common technical questions regarding Nasdaq TotalView to help ensure you are receiving the full benefit of the TotalView feed. For any additional questions, contact datasales@nasdaq.com

GLIMPSE (Re-Request & Retransmission Requests)

Q: Are there any recommendations or best practices to follow for recovery of missing packets on TotalView ITCH?

A: A complimentary product to TotalView ITCH is Nasdaq GLIMPSE. GLIMPSE is a point-to-point data feed connection that provides customers with the current state of the execution system with full market participant attribution. GLIMPSE also uses the same data formats as TotalView ITCH.

GLIMPSE is a more efficient recovery mechanism for Depth data as it does not require a complete re-transmission of all data points prior to the system message gap. The GLIMPSE service responds with the order book pre-constructed, and messages can be appended to it rather than having to rebuild the complete order book.

Q: Is there a re-transmission rate limit on the TotalView ITCH feed?

A: There is no limit, but the UDP TotalView ITCH re-requestor is a shared resource, so we suggest that customers use GLIMPSE to prevent impact to other customers.

Q: What is the daily start time of GLIMPSE and when are the Stock Directory messages disseminated?

A: GLIMPSE is available at the same time the data is available on TotalView ITCH. Stock directory messages are available on a snapshot basis whenever requested.

Q: What is the peak packet rate capacity and what is the packet density at peak message rates?

A: TotalView ITCH peak packet density depends on the messages being transmitted. The smaller the message, the more messages can be added to fill the mold packet. Please refer to the Bandwidth Report for more information.

TotalView FPGA

Q: Will the TotalView ITCH FPGA packet size be the same to the TotalView ITCH software version?

A: No, for the TotalView ITCH software version, packet size varies by channel. Given the nature of TotalView ITCH FPGA, the packet sizes may be significantly larger during peak market periods. Nasdaq advises all TotalView ITCH FPGA clients to be prepared to handle packets up to 1,500 bytes in length.

Miscellaneous

Q: Where can we find multicast addresses?

A: You can find a full list of addresses via UDP/IP Addresses – U.S. Equity Market Data Feeds.

Q: How do you read binary files from TotalView ITCH?

A: Information on how to read these files can be found via binaryfile.

Additionally, you can also refer How to parse binary ITCH file (Python Example).

Q: How should TotalView ITCH order be sorted?

A: Nasdaq exchanges are price/display/time driven so the book should be ordered as such.

Q: For a particular exchange - during Operational Halts on that exchange - will we receive a Stock Trading Action Message along with an Operational Halt for the exchange? On halt/resume?

A: Operational halts and Trading states are independent of each other. Each message is sent for a different reason. If a security is operationally halted, an operational halt will be sent. Whereas, if a regulatory halt is declared on the same instrument a Stock Trading Action message will be sent.

Q: When an Operational Halt Message is received, will all the existing orders on the book be cancelled, and will we receive cancels for the existing messages?

A: Resting orders will not be automatically cancelled upon the triggering of an operational halt. Subsequent action, depending on the nature of the halt, may be taken where orders will be cancelled prior to resuming trading.

Q: How are reserve orders handled?

A: Reserve orders are handled as two separate orders, one displayed and one non-displayed. If there is an execution against the displayed order that causes its size to decrease below 100 shares, another displayed order will be entered at the quantity specified, while the size of the non-displayed order will be reduced by the same amount. The new displayed order will receive a new timestamp, but the non-displayed and the original displayed order will not.

Q: How do I find the Nasdaq Official Closing Price (NOCP) for an ETP with no closing cross?

A: When there is no closing cross for an ETP, we utilize a time-weighted average of the prevailing end of day quotes (TWAM) to determine the NOCP. Nasdaq sets the NOCP using TWAM for Nasdaq listed ETPs if two conditions are met. First, there is no closing cross for that ETP and secondly there is a valid TWAM price. Our research has shown that TWAM NOCP will be more reflective of the valuation of the ETP than using the last transaction price.

Please see the below documents for more information:

When an ETF Doesn't Close?

Closing Price for ETPs

Q: Why am I seeing a very large ask price as compared to other orders? Is this a marketable order? Should these be filtered out?

A: The order you are seeing is referred to as a "stub quote," which is a real order. A stub quote is an offer to buy or sell a stock at a price far away from the prevailing market that it is not intended to be executed.

Filtering depends on the use case. If inclusion of stub quotes causes confusion with users, distributors may elect to not display them.

Q: Can the same Match Number be assigned to more than one transaction? E.g., if an aggressing order executes against, say, three passive orders, would those passive orders all have the same Match Number?

A: There is one match number per execution, and cross executions will also have different match ids.

Historical ITCH

Q: Does ITCH 2.0 (all data prior to Aug 2007) provide trading status?

A: No, ITCH 2.0 does not include the stock trading action message, thus does not include the trading status information, whereas now the latest version (5.0) includes the stock trading action message and in turn the trading status information.