Nasdaq Closing Cross

Frequently Asked Questions

Almost 10% of Nasdaq's average daily volume occurs in the closing auction. Providing true price and size discovery, the closing auction determines benchmark pricing for index funds and other investment strategies. To understand the inner workings, here's what market participants are asking.

What are the cutoff times for Nasdaq On-Close orders?

Key Times	Key Actions
Prior to 3:50 p.m. ET	Nasdaq begins accepting Market-On-Close (MOC), Limit-On-Close (LOC), and Imbalance-Only (IO) orders.
3:50 p.m. ET	Early dissemination of closing information begins. ▪ Nasdaq continues accepting MOC, LOC and IO orders, but they may not be canceled or modified.
3:55 p.m. ET	Dissemination of closing information begins. ▪ Nasdaq stops accepting MOC orders. ▪ LOC orders may be entered until 3:58 p.m. ET, but may not be canceled or modified after posting on the order book ▪ IO orders may be entered until 4:00 p.m. ET
3:58 p.m. ET	Nasdaq stops accepting entry of LOC orders.
4:00 p.m. ET	Closing process begins.

How does Nasdaq determine the closing Price?

At 4:00 p.m. ET, Nasdaq calculates the price that will maximize the number of shares matched based on on-close orders (MOC, LOC, IO) and continuous market orders and execute the cross at a single price called the Nasdaq Official Close Price (NOCP).

What are the key data points that everyone should be aware of?

Nasdaq begins disseminating the Net Order Imbalance Indicator (NOII) at 3:50 p.m. ET. Between 3:50 p.m. ET and 3:55 p.m. ET, the information is disseminated every 10 seconds and includes these data points:

▪ **Number of Paired Shares:** The number of on-close shares that Nasdaq is able to pair off at the current reference price.

▪ **Imbalance Side:** Indicates the direction of the Imbalance.

▪ **Imbalance Quantity:** The number of closing shares

▪ **Current Reference Price:** The price within the Nasdaq Best Bid and Offer (BBO) at which paired shares are maximized. The imbalance is minimized and the distance from the midpoint is minimized, in that order.

Between 3:55 p.m. ET and 4:00 p.m. ET, Nasdaq will disseminate the NOII every second and will include the following additional data points:

▪ **Near Indicative Clearing Price**: The crossing price that will maximize the number of shares matched based on on-close orders (MOC, LOC, IO) and continuous market orders. Effectively, this is the price at which the closing cross would occur at that moment in time

▪ **Far Indicative Clearing Price:** The crossing price that will maximize the number of shares matched based on closing interest only (MOC, LOC, IO). This calculation excludes continuous market orders.

How can Auction Imbalances be offset?

There are three methods for offsetting imbalances.

1. **Limit-On-Close Orders (LOC)** are orders designed to encourage greater participation and interaction opportunities within the Nasdaq Closing Cross process and support stability in the price discovery process.

- An LOC order entered between 3:55 p.m. ET to 3:58 p.m. ET will be accepted at its limit price, unless its limit price is more aggressive than either the 3:50 p.m. ET or 3:55 p.m. ET Reference Prices, in which case the LOC order will be re-priced to the more aggressive of the two Reference Prices.

2. **Continuous Market Orders** are available for entry until the closing cross commences. At that time, they will be included in the auction and will be available for execution with price standing.

3. **Imbalance-Only Orders (IO)** are liquidity-providing orders that stabilize the crossing price.

   - IO orders to buy (or sell) that are priced more aggressively than the 4:00 p.m. ET Nasdaq bid (or ask) will be adjusted to the Nasdaq bid (or ask) prior to the execution of the cross.

What are the primary differences between an IO and an LOC?

IO	LOC
- Price is determined by the Nasdaq BBO at the time of the cross	- LOCs are accepted until 3:58 p.m. ET and have price standing in the auction
- Price for potential participation in the auction is not determined until the auction process begins	- LOC orders entered at prices more aggressive than either the 3:50 p.m. ET or 3:55 p.m. ET
- Provide liquidity and offset auction imbalances	- Reference Prices are subject to repricing to the more aggressive of the two Reference Prices.
	- Provide price stability in offsetting auction imbalances

In the example below, there are 1,000 shares that can be offset by either an IO or an LOC.

1. 3:56 p.m. ET Customer #1 enters a sell 1,000 shares IO @ $9.95

2. 3:57 p.m. ET Customer #2 enters a sell 1,000 shares LOC @ $10.10

3. 3:57:30 p.m. ET Customer #3 enters a sell 1,000 shares LOC @ $10.00

At 4 p.m., the Nasdaq BBO is $10.00 x $10.15.

- The IO is priced @ $10.15 and does not receive a fill
- Customer #2 does not receive a fill
- Customer #3 executes at $10.00

Each order would have paired off the auction in its entirety. However, the LOC orders improved the auction as they were willing to offset the imbalance at better prices, something an IO cannot accomplish due to the fact it gets re-priced to the 4:00 p.m. ET Nasdaq BBO. This scenario demonstrates the value of LOCs as providing improved price discovery and stability in the Nasdaq auction

Let's continue the conversation on the Nasdaq Closing Cross. Contact sales and support at:

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Example

3:50 p.m QBBO: $9.99 x $10.00	3:55 p.m QBBO: $10.10 x $10.15	3:56 p.m. - 3:59 p.m QBBO: $10.00 x $10.15	4:00 p.m QBBO: $10.00 x $10.15
NOII: Paired Shares: 4,000 Imbalance side: B Imbalance shares: 500 Current ref px: $10.00 Near: $0 Far: $0	Buy 500 shares MOC received NOII: Paired Shares: 4,000 Imbalance side: B Imbalance shares: 1,000 Current ref px: $10.15 Near: $10.25 Far: $10.50	1. Sell 1,000 shares IO received at $9.95 2. Sell 1,000 shares LOC received at $10.10 3. Sell 1,000 shares LOC received at $10.00 NOII: Paired Shares: 5,000 Imbalance shares: 0 Imbalance side: N Current ref px: $10.00 Near: $10.00 Far: $10.00	NOII: Paired Shares: 5,000 Imbalance shares: 0 Imbalance side: N Auction Trades @ $10.00