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NASDAQ OMX® / UNDERSTANDING THE NASDAQ CLOSING CROSS / **APRIL 26, 2011**

THE NASDAQ CROSSING NETWORK

- The NASDAQ Opening and Closing Crosses are price discovery facilities that cross orders at a single price. The crosses enable market participants to execute on-open and on-close interest and provide **unparalleled transparency**.
- The crosses generate opening and closing prices that are **widely used** by industry professionals including Russell Investments, Standard & Poor's and Dow Jones.
- NASDAQ Official Opening Price (NOOP) and NASDAQ Official Closing Price (NOCP) are disseminated promptly after 9:30 and 4:00, with Trade Modifiers that allow the industry to see **immediately** what occurred in a cross.
- On June 25, 2010, the last Russell reconstitution, NASDAQ executed 1.04 billion shares representing \$11.2 billion in under 0.855 seconds.

NASDAQ CROSSING NETWORK FUNCTIONALITY

Order Types

- **On-Open:** Specifically request an execution at the opening price. Can be limit-on-open or market-on-open. Accepted beginning at 7:00 a.m., ET.
- **On-Close:** Specifically request an execution at the closing price. Can be limit-on-close or market-on-close. Accepted beginning at 7:00 a.m., ET.
- **Imbalance-Only Orders (IO):** Priced orders that provide liquidity to offset on-open (on-close) orders during a cross. IO orders must be priced (limit); no market IO orders. Buy orders execute at or below the bid. Sell orders execute at or above the offer. IO orders are re-priced to the best bid/ask on the NASDAQ book prior to the execution of the cross.

NASDAQ CROSSING NETWORK FUNCTIONALITY

Mechanics of the Crosses

- On-Open orders may be submitted until 9:28 a.m. and On-Close orders may be submitted until 3:50 p.m.
- IO orders are accepted beginning at 7:00 a.m. After 9:28 a.m./3:50 p.m., users will not be able to update IO orders for the Opening Cross but new IOs can still be entered until the actual cross.
- The cross orders interact with other cross orders and with orders already on the NASDAQ book. For the Opening Cross, this includes pre-market orders and orders that become live at the open.
- Market On-Open and Market On-Close orders have greatest priority. Imbalance orders only execute if an order imbalance exists and the cross occurs at or worse than the NASDAQ BBO.
- The Circuit breaker built into the NASDAQ Crossing process constrains price movement. Circuit breakers are rarely reached.

NASDAQ CROSSING NETWORK NET ORDER IMBALANCE INDICATOR

Leading up to the crosses, NASDAQ disseminates information about order imbalances in the open/close book, along with indicative open/close prices

- Imbalance information is disseminated every five seconds prior to the Opening and Closing Crosses
- Dissemination begins two minutes prior to the open and 10 minutes prior to the close
 - **Near Clearing Price:** The crossing price at which orders in the NASDAQ opening/closing book and continuous book would clear against each other.
 - **Far Clearing Price:** The crossing price at which orders in the NASDAQ opening/closing book would clear against each other.
 - **Current Reference Price:** A price within the NASDAQ Inside at which paired shares are maximized, the imbalance is minimized and the distance from the bid-ask midpoint is minimized, in that order.
 - **Number of Paired Shares:** The number of opening/closing shares that NASDAQ is able to pair off at the current reference price.
 - **Imbalance Shares:** The number of opening/closing shares that would remain unexecuted at the current reference price.
 - **Imbalance Side:** The side of the imbalance: B= buy-side imbalance, S= Sell-side imbalance, N = no imbalance, O= no marketable on-open or on-close orders.

NOII INDICATOR WINDOW

NASDAQ Net Order Imbalance Indicator (NOII)

Monday, February 08, 2007

GO

Open/Close
NOII Data



View 50 by
Highest Imbalance



View 50 by Highest
Price Variance



View Saved
Portfolio



View IPO/Initial
Imbalances



Save Portfolio



Time	Symbol	Paired Shares	Imbalance Shares	Imbalance Side	Current Reference Price	Near Indicative Clearing Price	Far Indicative Price	No Indicative Price	Price Variance Indicator	Opening Cross Volume	NOOP
09:29:49	AAPL	206,665	0	N	\$83.91	\$83.91	\$83.91		0 - 0.99%	220,562	\$84.00
09:29:49	AMZN	39,922	1,251	S	\$38.31	\$38.30	\$38.30		1 - 1.99%	41,173	\$38.30
09:29:49	EBAY	159,785	6,210	B	\$31.35	\$31.39	\$31.39		0 - 0.99%	164,870	\$31.38
09:29:49	YHOO	143,450	2,424	S	\$30.14	\$30.12	\$30.11		1 - 1.99%	145,874	\$30.11
09:29:49	ORCL	240,970	0	N	\$16.15	\$16.15	\$16.15		0 - 0.99%	231,834	\$16.13
09:29:49	MSFT	143,450	2,424	S	\$30.14	\$30.12	\$30.11		1 - 1.99%	145,874	\$30.11
09:29:49	INTC	39,922	1,251	S	\$38.31	\$33.30	\$38.30		1 - 1.99%	41,173	\$38.30
09:29:49	SBUX	143,450	3,424	S	\$30.14	\$30.12	\$30.11		1 - 1.99%	145,874	\$30.11
09:29:49	DELL	240,970	0	N	\$16.15	\$16.15	\$16.15		0 - 0.99%	231,834	\$16.13

THE NASDAQ CLOSING CROSS

- Market-On-Close orders have greatest priority.
- Limit-On-Close orders, Imbalance Orders and orders on the book in the continuous market have price/time priority.
 - Orders at the same price will execute in time priority.
 - IO orders are priced at the best buy or sell order on the NASDAQ book assuming the limit price of the order is equal to or better than the inside price.
 - If the best sell order on NASDAQ's book is \$11
 - IO order #1 is entered at 3:55 p.m. to sell at a price of \$1.
 - IO order #2 is entered at 2:00 p.m. to sell at a price of \$10.
 - Both IO orders are re-priced to \$11 and IO order #2 has time priority.
 - If the best buy order on NASDAQ's book is \$10.10
 - The \$10.10 order to buy was put on the book at 3:40 p.m.
 - An IO order to buy was entered at 3:55 p.m. for \$20.
 - The IO order to buy is re-priced to \$10.10 but the order on the book has priority.
- Imbalance orders only execute if an order imbalance exists and the cross occurs at or worse than the NASDAQ BBO.

NDX SPECIAL REBALANCE

NASDAQ OMX has announced that the NASDAQ-100 Index (NASDAQ: NDX) will undergo a Special Rebalance effective prior to market open on Monday, May 2, 2011, to bring the weights of the Index Securities closer in line with their actual market capitalizations.

- The NASDAQ-100 Special Rebalance will result in a market event on **Friday, April 29, 2011** similar to the annual Russell Reconstitution.
- NASDAQ OMX Global Index Group will use the NASDAQ Official Closing Prices of the Index Securities as determined by the NASDAQ Closing Cross on April 29th for the Special Rebalance.
- There will be no system changes during the April 29th Closing Cross; the Closing Cross will follow the standard timeline.

Eastern Time	
7:00 a.m.	NASDAQ begins accepting On-Close and Imbalance-Only orders.
3:50 p.m.	<ul style="list-style-type: none">• NASDAQ stops accepting entry, cancellation or modification of On-Close orders.• Imbalance-Only orders may be entered but not canceled.• Dissemination of NOII information begins.
4:00 p.m.	Closing process begins

- As happens during the Closing Cross on any other trading day, imbalance information about the April 29th Closing Cross will be provided via the Net Order Imbalance Indicator.

PRICING FOR CROSSING NETWORK TRANSACTIONS

Pricing is effective in each cross for all eligible securities. All cross volume is included in firms' volume for pricing tiers.*

- **Opening Cross**
 - \$10,000 monthly cap per firm
 - \$0.0005 per share for on-open and orders on the book
 - FREE for imbalance orders and extended hours orders

- **Closing Cross**
 - No monthly cap
 - \$0.0010 per share for on-close
 - FREE for imbalance orders and orders on the book

*See NASDAQ [Pricing Schedule](#) for Details

QUESTIONS AND ADDITIONAL INFORMATION

Contact Information:

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Additional information available via the following link:

- <https://indexes.nasdaqomx.com/data.aspx?IndexSymbol=NDX>
 - NDX Special Rebalance Presentation
 - NDX Special Rebalance Press Release
 - NDX Special Rebalance FAQ
 - NDX Special Rebalance Shares

Market-Wide Call for NDX Special Rebalance Closing Cross:

- Friday, April 29, 2011, 3:00 p.m., ET, lasting approx. two hours
 - Dial In: +1 866 765 5864
 - Conference ID: 60434203
 - Leader: David Lawn