

Notice to Participating Organizations

December 6th, 2013

2013-043

TMX QUANTUM XA™ on TSX

TMX is pleased to announce details related to the upgrade of the Toronto Stock Exchange (TSX) trading technology to the TMX Quantum XA platform.

The new technology was successfully implemented on TMX Select in July 2013. With the rollout of the TMX Quantum XA platform on TSX, the dramatically enhanced performance and improved processing efficiencies experienced on TMX Select will be extended to Canada's primary Exchange.

The TSX upgrade does not include any changes to trading functionality or market data content.

Parties connecting directly to the TSX trading engine are required to establish new order entry sessions and route orders to a specific Destination IP and PORT by symbol:

- Symbols A Through D - Single Destination IP and PORT
- Symbols E through L - Single Destination IP and PORT
- Symbols M through S - Single Destination IP and PORT
- Symbols T through Z - Single Destination IP and PORT

As with TMX Select, users are required to upgrade to XA STAMP 7.03 and FIX 4.3 order entry protocols, as per specifications published in June 2012.

At this time, access to TSX Venture Exchange and Alpha Exchange will continue through existing order entry connections. The migration of TSX Venture Exchange to Quantum XA is planned to commence in Q3 2014, while plans for the migration of Alpha Exchange are yet to be determined. Further details will be provided at a later date.

Gateway Testing Environment (GTE)

- The test environment will be made available February 14, 2014
- In order to secure new order entry sessions in GTE, please contact TMX Market Operations at vendor_services@tmx.com.
- For those who have already completed application certification in GTE as part of the TMX Select XA migration, nothing further will be required. All others with direct order entry connection to TSX are required to complete the TMX Quantum XA certification process. However, we strongly recommend that all market participants validate their code against our testing environment.

Production Connectivity Validation (Technical Launch)

- Production Order Entry sessions will be made available commencing the week of April 28th, 2014. This will allow for validation of client internal firewall changes and session authentication in a controlled fashion.
- TMX Market Operations will provide more details in the coming months with respect to destination IPs.

Staged Production Roll-Out

Symbols trading on TSX will be migrated onto TMX Quantum XA over three phases commencing Monday, June 2nd, 2014. The following symbols/symbol groups will be migrated to TMX Quantum XA on the following dates:

- Monday, June 2nd - all symbols beginning with the Letters D, J, Q and Y
- Monday, June 9th - all remaining symbols beginning with the Letters A through L
- Monday, June 16th - all remaining symbols beginning with the letters M through Z
- Monday, June 23rd - contingency date

New order entry session bundles are required to access TSX on TMX Quantum XA. During the migration, orders for symbols that have yet to migrate are to be routed via existing connections.

- Customers using STAMP order entry protocol will use the STAMP 7.03 protocol to route orders to TSX on TMX Quantum XA.
- Customers using FIX for order entry must send orders for symbols that have migrated to TMX Quantum XA using FIX 4.3 protocol. Orders for symbols that have yet to migrate are to be routed via the existing sessions and FIX 4.2 protocol.

Handling of Open Orders

Based on customer feedback, we will be purging all open orders as part of the migration. The orders will be removed as part of the batch process on Friday evenings preceding each migration dates. In order to accommodate re-entering of the GTC and GTD orders, the production environment will be available on the respective Saturdays. Note that orders cancelled as part of the Friday's End of Day batch (including all expired orders) will be reflected on the Saturday's Reconciliation feed. Monday's Order Status/Order Book will be reflective of Saturday's order entry session. We will provide a complete schedule indicating the weekend pre-open times in a subsequent notice.

Market Data Feeds

There will be no functional changes to the existing market data feeds. However, additional stream IDs will be included on the binary feeds (TQL1 and TQL2). Further details will be provided in a follow-up notice.

Customers Impacted

Customers with a direct connection to TSX with a certified order entry application will be impacted by the TMX Quantum XA upgrade. This includes, but is not limited to:

- Service Bureau vendors
- Participating Organizations, Members, or Subscribers with in-house proprietary systems
- Software providers
- DMA customers supporting direct connections

Customers that access TSX through a service bureau or third party access vendor are encouraged to reach out to their vendor contacts to discuss what, if any, changes may be required.

Documentation

Specifications applicable to TMX Quantum XA are available through the TMX Equity Markets Documentation Portal at <http://tmx.com/en/login.html>.

For further information please contact our Account Management Team.

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About TMX Group (TSX-X)

TMX Group's key subsidiaries operate cash and derivative markets and clearinghouses for multiple asset classes including equities, fixed income and energy. Toronto Stock Exchange, TSX Venture Exchange, TMX Select, Alpha Group, The Canadian Depository for Securities, Montreal Exchange, Canadian Derivatives Clearing Corporation, Natural Gas Exchange, BOX Options Exchange, Shorcan, Shorcan Energy Brokers, Equicom and other TMX Group companies provide listing markets, trading markets, clearing facilities, depository services, data products and other services to the global financial community. TMX Group is headquartered in Toronto and operates offices across Canada (Montreal, Calgary and Vancouver), in key U.S. markets (New York, Houston, Boston and Chicago) as well as in London, Beijing and Sydney. For more information about TMX Group, visit our website at www.tmx.com. Follow TMX Group on Twitter at <http://twitter.com/tmxgroup>.

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