



FIX Consortium

FIX Antenna™ C++ Testing in High-Performance Solution Stack

EPAM's Capital Markets Competency Center, joined OnX Enterprise Solutions Ltd, a consortium of leading IT vendors, to create demonstrable high performance solution stacks to address common business requirements in financial trading. A series of tests were undertaken at Intel fasterLab facility in UK that demonstrate the value of commercial software (versus open source) and use of specialist technologies in a low latency infrastructure.

Goal of the consortium is to create transparent comparative performance statistics for key functions along the trading life cycles using business workloads - FIX being used on a number of legs of the typical trade life cycle.*

Platform used to run the tests

- > Intel® Xeon® processor X5698 (dual-core), clocked at 4.4 GHz with Solarflare SFN5122-F 10G NIC OpenOnload kernel bypass
- > Red Hat Enterprise Linux (RHEL 6.0)

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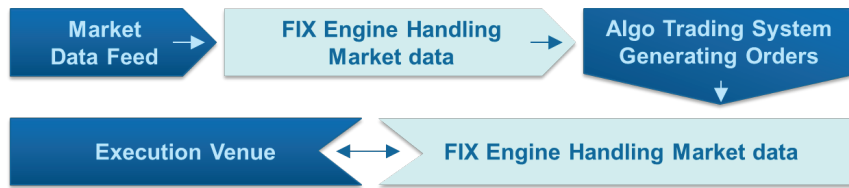
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Test Harness (simulated market data and execution venue)



The benchmark process was repeated as part of 3 different test cycles covering short to extended duration periods. Each set of benchmark cycles was repeated 3 times, in order to establish mean latency figures of the FIX engines.

The 3 intended test cycles were:

1. Burst test - where 50,000 market data messages per second were generated by the market data simulator for a period of 5 minutes.
2. Sustained test - where market data message rates were increased from 10,000 to 100,000 per second, by 10,000 every 4 minutes, for a total of 40 minutes.
3. Extended sustained test - where market data rates were increased from 10,000 to 50,000 per second, by 10,000 every 10 minutes, and then held at 50,000 for a total time of 4 hours."

The latency was measured as the time span between two correlated events on the wire: an inbound FIX market data message packet and the resulting outbound FIX order message packet.

The accurate time measurement was supported by Endace™ network monitor card.

B2BITS FIX Antenna™ C++ v2.11 Test Results

The "tick to trade" latency results for FIX Antenna™ C++ are presented in the table below. Tick-to-trade is measured as time between two correlated TCP packets on the wire: an incoming 'X' Incremental Market Data Refresh and an outgoing 'D' New Single order.

Percentile	FIX Antenna™ C++ v2.11 Latency, μ s	QuickFIX/C v1.13 Latency, μ s
50%	5.7	51.9
95%	5.9	57.9
98%	6.0	145.4
99%	6.1	175.5
100%	18.9	647.6

Latency of the workload completion over a 60 microsecond range (comparing open source vs. B2BITS FIX Antenna™ C++ engine)

