

Summary of Independent Performance Testing for FIX Antenna C++

Executive Summary

Straight Through Processing (STP) performance tests for FIX were conducted between the 10th and 14th of June 2002 by Sun Microsystems personnel at their UK laboratories.

The results demonstrated the possibility of achieving extremely high performance solutions on cost-effective hardware and OS platforms. It can be seen from the report that FIX Antenna attained performance levels on entry-level hardware that no other solution can achieve on 'big iron'. In the benchmark tests a SUN Cobalt RAQ 550 with the 2.4 Linux kernel installed and using FIX Antenna C++ achieved a throughput of over 13,900 messages per second for a single session and over 6,000 messages a second whilst concurrently running 200 sessions.

As the adoption levels of FIX have increased there has been pressure on the vendor community to provide cheaper and faster solutions. Stat-Arb trading and automated execution together with the availability of multiple ECN and sell side destinations has increased the demand for better performance to support quotes and market data.

This level of performance provided by FIX Antenna C++ gives the advantages of: a) cost reductions through achieving performance levels on low-end hardware that previously could only be achieved via multiple instances of both software and hardware; b) the ability to reach electronic markets before competitors.

FIX Antenna™ C++ is not a low-end solution. It provides all the resilience and features required of an industry leading product, and recently topped the European FIX User Survey with an overall score of 4.7 / 5 and a rating of 5 / 5 for "Support Satisfaction".

Configuration**Hardware**

SUN Cobalt RAQ 550

1.2 Ghz Processor speed

1.0 Gigabyte Hard Disk

Operating System

Linux Redhat 7.2

Network

2GB Ethernet

FIX Antenna C++

The following parameters were set in the FIX Antenna™ C++ properties file:

- The heartbeat interval for all tests was set at 30 seconds,
- The number of threads used was a maximum of twenty,
- All outgoing messages were persisted at the originator.

Performance Test 1 Throughput

The throughput test is used to determine the mean number of messages that a single instance of FIX Antenna™ C++ sends to another single instance of FIX Antenna™ C++ per second.

The throughput value is calculated from the time the first message is received to the time the final message is received at the acceptor. The throughput is calculated for a set of 20,000 "application level" messages for each session. The variables within this test are the number of simultaneous sessions established between the buy side and sell side (initiator and acceptor).

Scenario

Two instances of FIX Antenna C++ are created on different cobalt servers. The initiator sends messages to the acceptor. The message "New Order" is pre-stored on the local drive of the initiator in flat file format. The discrete steps within the test are:

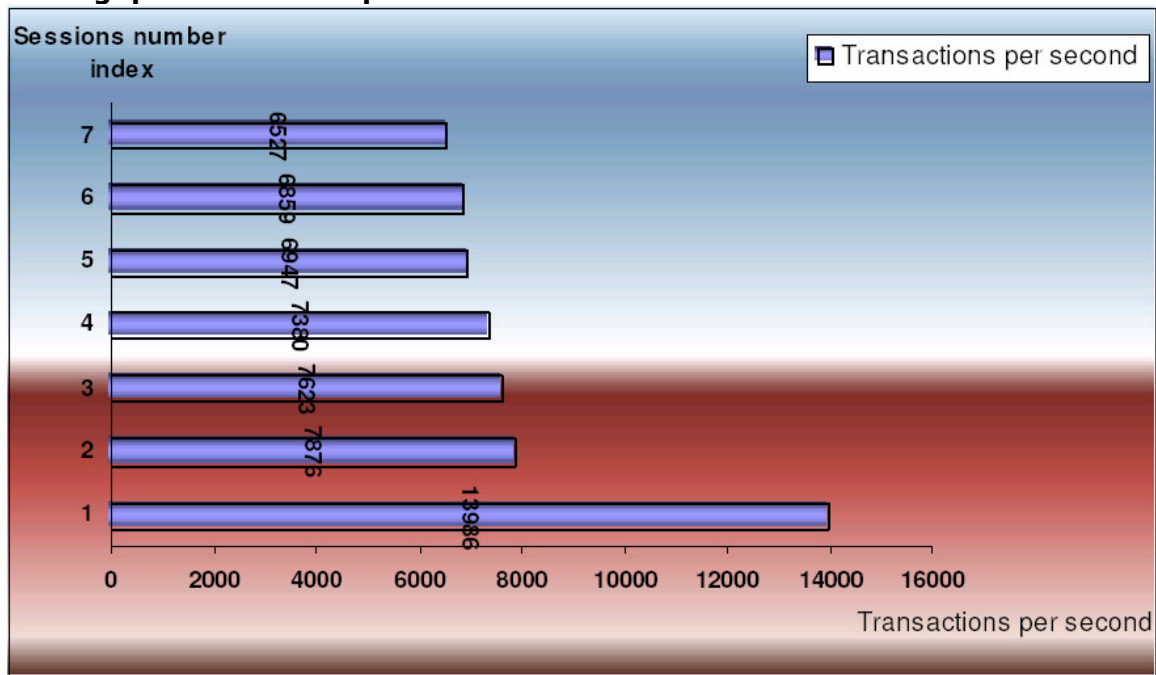
1. First Engine creates N acceptors (sessions that wait for incoming session creation requests)
2. Second Engine creates N initiators (session creation requests)
3. First Engine (the initiator) sends messages.
4. Second Engine (the acceptor) receives messages, parses each message and also records the time at which the first message is received and parsed (t1) and the time at which the last message is received and parsed (t2)
5. The number of messages per second is calculated as $20,000 * N / (t2 - t1)$
6. The mean number of messages per second is the arithmetic mean throughput for all the tests conducted

Test 1 result summary

Throughput Results Table

Chart Index	Number of Sessions	Mean Messages / second
1	1	13,986
2	2	7,876
3	5	7,623
4	10	7,380
5	50	6,947
6	100	6,859
7	200	6,527

Throughput Results Graph



About B2BITS Ltd.

(www.btobits.com) is a leading provider of FIX Engines and FIX Testing Services. We are committed to helping fulfill the original vision of FIX as a standard for *all* market participants and have gained a reputation for being both innovative and proactive in meeting the challenges that face market participants. We are privately owned and have offices in the United Kingdom and the USA.

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Since its inception in 1982, a singular vision -- The Network Is The Computer[tm] -- has propelled Sun Microsystems, Inc. (Nasdaq: SUNW) to its position as a leading provider of industrial-strength hardware, software and services that power the Internet and allow companies worldwide to take their businesses to the nth degree. Sun can be found in more than 170 countries and on the World Wide Web at <http://sun.com> .