

Market Data Solution Sheet



The financial markets in 2007 are facing an unprecedented number of market wrenching challenges. Two of the key challenges are the continued growth of algorithmic trading and the impending enactment of trading regulations in both the U.S. and EU.

Liquidity Fragmentation

Industry observers like The Tabb Group predict increased fragmentation of liquidity across U.S. venues as traders seek to comply with Reg NMS' Top-of-Book/Order Protection Rule (OPR). Fragmentation will further increase market data volume that has been doubling each year since 2002.

Some analysts now believe that market data volume will reach an aggregated one minute peak volume of 750,000 messages per second by the end of 2007. Observers believe that EU markets to face similar fragmentation issues post-MiFID. Algorithmic trading and the growth of dark pools further complicate compliance.

U.S. firms are reporting increasing rate of locked and crossed quotes due to hidden reserves. This further burdens firms' cost of trading and compliance as firms take care not to violate the OPR rule by trading at an inferior price and prove so respectively. To comply, firms will need access to real time quotes from all relevant centers, hence a market data system that has low-latency and supports direct exchange feeds.

Algorithmic trading is a key reason for why firms are re-architecting their trading systems from the front-office to the back-office. To enable the real-time speed and complexity of algorithmic trading, firms must automate processes and gain greater throughput and performance from their market data and trading systems. Additionally, the growth of alternative investments, regulations, and emerging markets are other key reasons.

The advent of regulations particularly Regulation NMS (Reg NMS) in the U.S., and the Markets in Financial Instruments Directive (MiFID) in the EU, require the majority of broker-dealers to seek best execution for their clients and to provide greater trade transparency by publishing their pre-trade quotes and post-trade prices. The projected impact of these regulations on firms with older market data systems is worrisome to say the least.

Why Market Data

As market data includes real time and historical price quotes, news and events, and internally generated data for trading, the market data system is the key focus of investment by firms. Firms are updating processes and market data systems that cannot:

- Access and process market data in real time that is projected to reach an aggregated one minute peak volume of 750,000 messages per second. Low latency and direct exchange feed support are the name of the game.
- Scale to manage and archive market data that has been doubling approximately every 10 months due to automatically generated pre-trade quotes and post-trade reporting. Adaptability and affordability are key.

Why Sun for Market Data

In preparation of these regulations that take effect in 2007, firms are developing new order routing and trading algorithms, increasing their IT spend on compliance, and accelerating the upgrade of their market data and trading platforms. Sun is closely aligned with all of the leading trading application and market data system vendors like Reuters and Wombat. In the case of Reuters, Sun and Reuters have been partners since the 1980s. Reuters Market Data System (RMDS) 6.0 on Solaris™ 10 is the latest instantiation of the partnership. And as Sun has recently announced support of the Intel processors, Sun and partners are focusing on providing a version for the Intel platform as fast as possible.

Low latency and optimized efficiencies

- **Performance:** Leading market data vendors Reuters and Wombat have demonstrated performance of millions of updates per second on Solaris 10. Sun and both Reuters and Wombat are working on publishing the latest benchmarks; the latest benchmark figures are available on sun.com/third-party/global. Firms may find recommended Reuters and Wombat configurations on Solaris 10 on sun.com/third-party/global.
- **Consolidation:** Solaris 10 supports containers that allow customers to consolidate multiple trading applications onto a single server, thereby reducing trading latency, increasing server utilization, and cutting, at least by half, the amount of space and power consumed by these applications. This is an attractive feature for firms looking further for cost reductions in-house or at 3rd party managed operations.

- **Optimization:** Solaris 10's unique DTrace tool allows firms to identify and remove performance bottlenecks in mission-critical trading applications. In today's environment where one millisecond can make a difference, DTrace enables firms to measurably shorten the trade lifecycle.

Scalability, compatibility, and cost/convenience

With Solaris 10 available on SPARC® and x86 processors, customers can expect the same proven performance, availability, and compatibility features on their choice of server. Sun is working to simplify access to the latest market data system on Solaris 10 on low cost x86 systems by creating Customer Ready Ship (CRS) configurations of leading market data systems pre-loaded on a single server. See sun.com for more information on these CRS versions.

Lower operating risk

Firms are looking beyond their walls, often looking across borders and oceans, for ways to increase profit and operating efficiency. Co-location, off-shoring and mergers and acquisitions are ways for firms to gain competitive advantages. Firms with trading systems that are open have the greatest chance of successfully executing these strategies. Just as importantly, such strategies may expose firms to greater operating risks—both man-made and natural. Sun enables firms to pursue these strategies with lower risk through support of standards like FIX and through the military grade security feature and full-featured identity management system found in Solaris 10 and Java™ CAPs respectively.

Why Market Data on Sun

Choice	Wombat Market Data System (MDS) or Reuters Market Data System (RMDS) 6.0
Low latency	Millions of updates per second. RMDS and MDS support a wide range of direct exchange feeds from all leading venues in the U.S., EU, and APAC
Low cost	Sun supports open source through its OpenSolaris initiative and x86 systems
Security	Sun offers Solaris 10 with built-in, military-grade security and the industry's leading Identity Management (IdM) system
Multi-platform support	Customers can choose between SPARC (RMDS only) and x86 platforms
Ease of support and lower cost of support	Solaris 10 offers binary compatibility unlike Linux which allows firms to upgrade their components on their schedule and at no risk for downtime due to system incompatibilities
Optimization and tuning	Containers and DTrace, only-in Solaris features, that support latency reduction by enabling server consolidation and application tuning