



Voltaire, HP, Intel and Reuters Solution for Trading

With Reuters RMDS Software, HP C-class Blades and ProLiant Server and Storage Hardware, Voltaire Grid Director™ Switches and Software, and Intel Processors

Overview

The Voltaire, HP, Intel and Reuters solution on HP ProLiant rack mounted and BladeSystem C-class servers is a specialized deployment of RMDS, in combination with high performance hardware, networking and services that delivers the ultimate system for trading applications. Today, stock exchanges, banks and hedge fund companies often rely on 1 Gb Ethernet to do their trading. This can cost millions of dollars in missed trading revenue because they can't process the transactions fast enough. This solution done in partnership between HP, Voltaire, Reuters and Intel provides these organizations with a faster, reliable way to conduct trades. To date, the combined solution has shown 48-50% performance and latency improvements over Ethernet.

The solution consists of hardware provided, integrated, tested and supported by HP for Reuters Market Data System software (RMDS). The power of the Reuters, HP, Voltaire and Intel partnership involved in this solution is that customers receive a proven solution with state of the art technology giving them a trading system with the lowest latency and highest throughput in the industry.

“The combination of the Reuters Market Data System, Voltaire InfiniBand solutions and HP platforms solves many of the latency problems our customers face with growing market data and trading volumes. Algo trading firms that use this combination can make more trades in less time, directly improving their organization's revenue.”

Michael Parlapiano, EVP, Global Head of Information Management Solutions, Reuters

Hewlett-Packard ProLiant Rack Mounted and BladeSystem C-class Servers

Financial services firms can gain a competitive edge by reducing costs and reducing risk – all while complying with government and industry regulations. A modular HP BladeSystem infrastructure provides a competitive advantage by allowing customers to build superior infrastructure for improving operational efficiency, responding better to changing regulatory requirements, and supporting revenue-generating service delivery. An HP BladeSystem supports the seamless integration of server, storage, and network components, so when customer needs to be able to scale the solution, the ability to deliver services grows in step. Additionally, the financial services firm can choose the right options to meet its needs, with security and reliability delivered across a variety of Linux, Windows, and custom applications. Plus, intense compute demands for sophisticated applications with high performance clusters is supported.

SOLUTION FEATURES

Provides trading applications:

- ▶ **Complete solution optimized for high throughput, low latency and high efficiency**
 - Throughput up to 20 Gbps
 - Latency less than 1 millisecond end to end (expected US Equities Projections 2007)
 - Network efficiency 80+% offering the highest price/performance advantages
- ▶ **State of the art technology integrating multi-protocol storage and network I/O into a unified, easily managed system**
- ▶ **Ideal environment for electronic trading applications**
- ▶ **Ability to scale without impacting latency**
- ▶ **Ability to add on options in hardware and software without impacting business**
 - Reuters Tick Capture Engine
 - Application Blades or Rack Mounted Servers
 - DACS Station/RMS
 - RMDS WAN capability

SOLUTION BENEFITS

- ▶ **Ultra low transaction latency - 48% improvement over Ethernet**
- ▶ **Saves installation and configuration time**
 - expert configuration for best performance
- ▶ **State of the art technology with application refresh**
- ▶ **Proven performance improvements**
- ▶ **Hardware solution provided, integrated and tested by Hewlett-Packard**

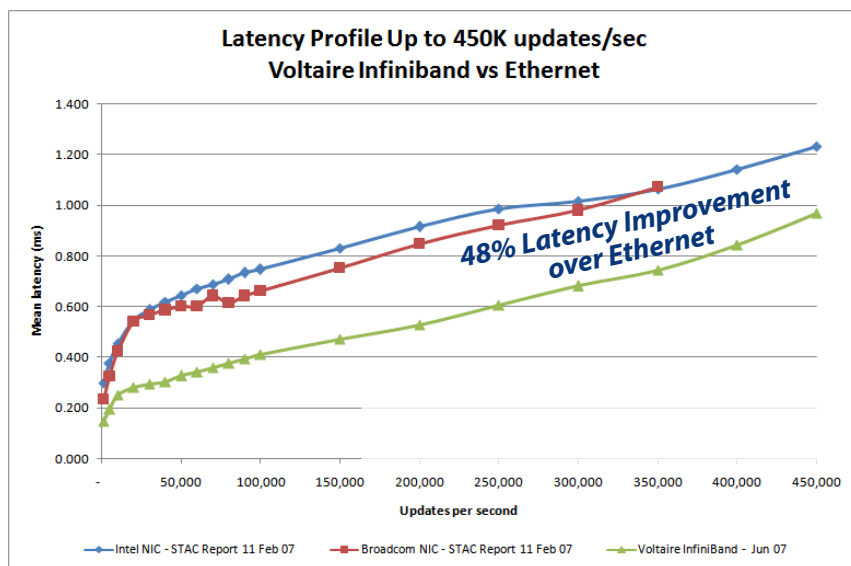


A financially sound decision

An HP BladeSystem solution enables you to improve service quality while reducing operational costs and mitigating risk. HP's scalable offering helps financial services firms improve their competitive advantage and increase profitability while they improve operational efficiency. Plus, the customer gets the peace of mind that comes from adapting to changes in information security, privacy, and regulatory reporting requirements. The net result — with an HP BladeSystem infrastructure, financial services firms are in a better position to leverage change to create new business opportunities, and get ahead of the pack.

Voltaire Grid Director™ High Performance, Low Latency Switching

Through years of development, hundreds of installations and focus on 10 – 20 Gbps InfiniBand technology, Voltaire is the expert in InfiniBand and RDMA technologies. Voltaire has developed a unique software module specifically for RMDS acceleration. With this software module and Voltaire's Grid Director family of high performance switches, the highest throughput and the lowest latency results have been obtained running Reuters RMDS. To date the solution has shown a 48% lower latency than Ethernet, allowing banks and hedge fund institutions to increase trading revenue through execution timing advantages and ability to handle increased trading volumes.



Compares the latency results to those obtained using Ethernet. Two Ethernet comparisons are made, each using a different HP network interface card, since previous investigations have shown that each card has a different latency/throughput profile.

Intel

The Intel® Core™2 Duo dual and quad core processors deliver the real opportunity for a radical change in financial markets applications and architectures. Massively reduced latency, through sub-millisecond transaction times and bulk market data delivery is delivered via computational power not previously possible. Intel has invested significant resources and developed strong industry relationships to bring these new technology processors to market, and is now doing the same in supporting specific capabilities to benefit the financial markets industry - making technology relevant to business.

This radical change in performance is available from the industry's first quad-core standard high volume server processor, that not only delivers breakthrough performance, but also an accompanying increase in energy efficiency and computing capabilities per watt.

Intel Corporation, a world leader in silicon innovation, develops technologies, products and initiatives to continually advance how people work and live. The Quad-Core Intel® Xeon® processor 5300 series redefines high-volume server architecture, and delivers the features that IT managers want: performance, energy-efficiency, lower total cost of ownership, reliability, and headroom for growth. Intel is working with the financial services industry to deliver low latency solutions to the capital markets industry.

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