



High Performance Trading—Algo Speed

At-A-Glance

Enabling automated trading applications to communicate faster and handle high volumes of market data in a predictable and reliable manner.

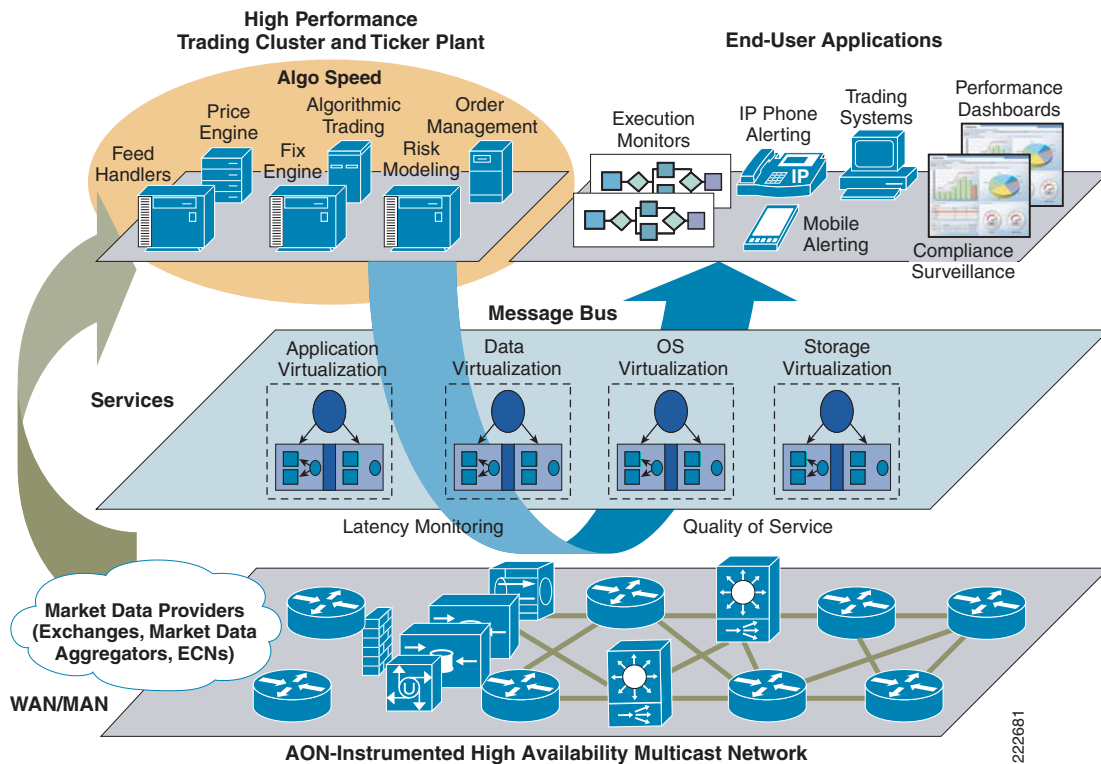
The Challenge

Automated trading creates a faster trading cycle, which in turn creates more data. Regulation creates new sources of market data. Global market data volume is expected to increase by 900% from 2007 to 2012 (source Tower Group report “Preparing for the Data Flood”). This is a huge strain on the information infrastructure of financial firms. This exponential growth in market data cannot be matched by a linear approach in upgrading the supporting infrastructure.

The Solution: High Performance Trading—Algo Speed

The Cisco High Performance Trading (HPT) infrastructure is a scaleable, low latency architecture that enables firms to handle the exponentially increasing volumes of market data and trades. High performance means low latency (in the millisecond range), high predictability and the ability to handle very high volumes efficiently (close to 1 million msg/sec). Cisco and its ecosystem of partners are offering an integrated set of technologies to help financial firms accelerate the introduction of the next generation trading platform.

Figure 1 Trading Floor Architecture—Algo Speed



The main Algo Speed features are:

- Acceleration of trading applications
- More efficient use of server capacity: servers have more CPU “headroom” to process applications instead of network traffic.
- Predictability—The variation in application messaging delay is reduced, ensuring consistent data input into algorithmic trading engines.
- Reliability—High Availability features in Cisco switches enable the design of robust networks, proven by large deployments in critical environments.
- Manageability—End-to-end management across multiple switching fabrics.
- Visibility—Microbursts detection in market data traffic; FIX protocol monitoring; identification of the source of the delay.

Solution Benefits

Minimizes latency and increases capacity in each component of the trading platform

It is imperative that end-to-end latency be minimized when delivering time-sensitive data. As the data traverses the different components of a trading platform—including market data delivery, order routing, and execution, the HPT infrastructure addresses the requirements by providing a lowest-latency interconnect at each component. At the same time, it allows servers CPUs to dedicate more capacity to the application, by offloading networking traffic processing to the switching fabric.

Helps prepare for new regulations

Regulatory changes such as Reg NMS and MiFID will generate more quote, order, and cancel/replace messages as equity firms adapt to more-electronic business processes. In the US, the sub-penny pricing rule will also increase demands on the supporting infrastructure. MiFID, is expected to lead to higher data volume as well, since investment banks that internalize trades will be required to publish their pre-trade quotes electronically. Acceleration of trading applications ensures best execution requirements and increases trading competitive advantage.

Provides flexibility to support a service-oriented architecture based on industry-standard protocols

Cisco's HPT—Algo Speed solution adheres to industry standard protocols. An application environment that supports these industry protocols will truly benefit from the open architecture, as it becomes part of a service-oriented architecture strategy for the adaptive enterprise. This shortens the time to market for new financial products, providing a competitive edge.

Cisco's Ecosystem of partners ensures industry inter-operability

Cisco is building key relationships across the HPT value chain. ISVs such as IBM, Wombat, 29West, Tibco, Reuters, Redhat, Novell, Tangosol/Oracle, Exigy, Active Financials, Gemstone, Gigaspaces, Platform Computing are the first in a growing list. Cisco is working towards creating the broadest industry inter-operability matrix with processor, server and storage manufacturers such as Intel, AMD, HP, Sun, Dell, and EMC.

Solution Components

- Cisco Server Fabric Switch SFS 7000 InfiniBand server switch, Datagram Acceleration Layer (DAL) software, and Host Channel Adapter (HCA)
- Cisco SFS 3012 multi-fabric switch (InfiniBand to Ethernet and Fibre Channel)
- Subnet Manager—Multi-fabric management platform for the SFS
- Cisco Catalyst 6500 and Catalyst 4948 Multilayer switches
- Wombat Feed Handlers
- Messaging bus—29 West, Tibco Rendezvous, Reuters Market Data Distribution System (RMDS)
- Latency Monitoring
 - Cisco Bandwidth Quality Manager (BQM)
 - Cisco IP SLA
 - Cisco AON Financial Services Monitoring Solution (FSMS)

Why Cisco?

With its breadth of products and services covering the domains of the traditional network infrastructure, to security and unified communications, Cisco is uniquely positioned to enable the delivery of a high performance trading platform:

- Enterprise-class products, broadest portfolio of products from a market leader
- Robust solution, validated by third party testing facility
- Comprehensive ecosystem: key relationships across the low latency value chain (Intel/AMD, IBM, Wombat, Tibco, Reuters, RHAT, SuSE)
- Broadest industry inter-operability matrix for Processor (Intel, AMD, IBM), Server (HP, Dell, IBM, Sun), Storage (EMC)
- World class support (24 x 7 x 365 global support; Depots in 122 countries)
- Global training, scalable advanced services, robust escalations

For More Information

For a more detailed discussion of the High Performance Trading Architecture, please go to:

http://www.cisco.com/web/strategy/docs/finance/trading_floor_architecture.pdf

<http://www.cisco.com/go/financialmarkets>