



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.

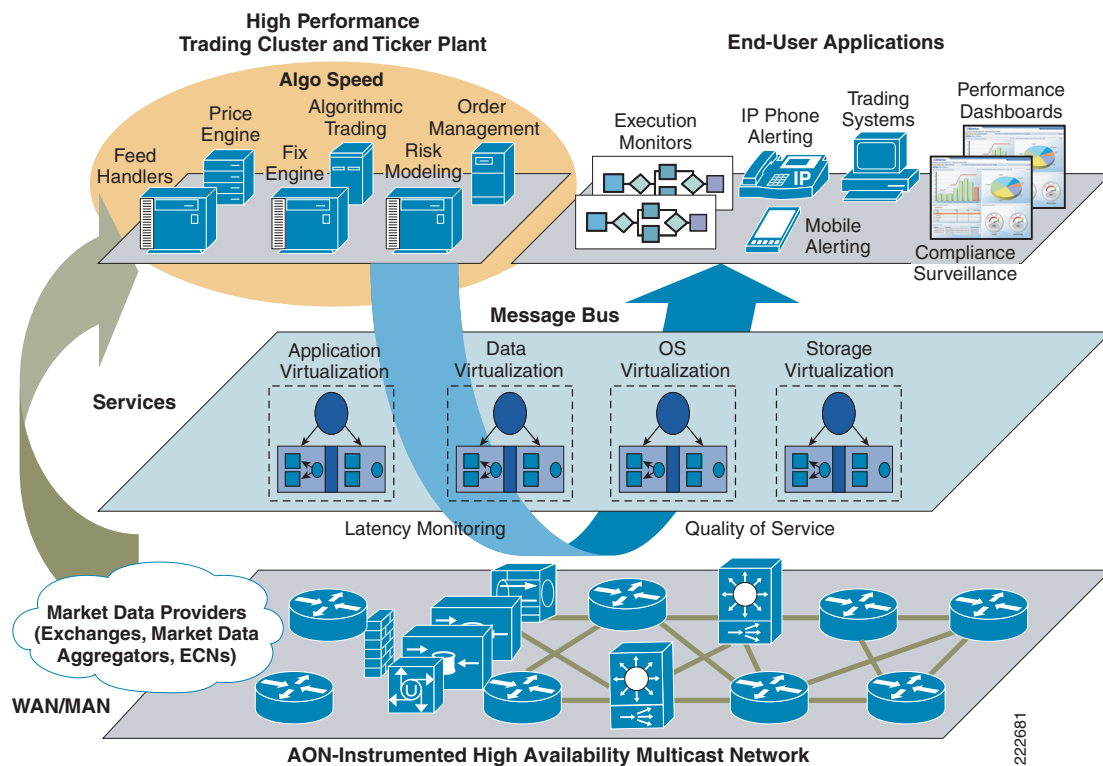
The Challenge

Automated trading has created a faster trading cycle, which in turn created more data. Regulation has created new sources of market data. Between 2007 and 2012, according to the TowerGroup report “Preparing for the Data Flood” global market data volume is expected to increase by 900 percent. 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.

Cisco’s High-Performance Trading: Algo Speed Solution

The Cisco High-Performance Trading (HPT) infrastructure is a scalable, low-latency architecture that helps 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 efficiently handle very high volumes at close to the level of one million messages per second. Cisco and its 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 features of HPT: Algo Speed are:

- **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, helping to ensure 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:** The solution detects microbursts in market data traffic, monitors Financial Information Exchange protocol, and identifies the source of the delay.

HPT: Algo Speed Solution Benefits

- Minimizes latency and increases capacity across the trading platform: In a system that delivers time-sensitive data, it is imperative to minimize end-to-end latency. 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 server CPUs to dedicate more capacity to the application, by offloading network 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 United States, the subpenny-pricing rule will also increase demands on the supporting infrastructure. MiFID will also lead to higher data volume because investment banks that internalize trades will be required to publish their pretrade quotes electronically. Acceleration of trading applications helps ensure best execution requirements and increases trading competitive advantage.
- Provides flexibility to support a service-oriented architecture: The Cisco 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 will help ensure industry inter-operability: Cisco is building key relationships across the HPT value chain. Independent software vendors such as IBM, Wombat, 29West, TIBCO, Reuters, Redhat, Novell, Tangosol/Oracle, Exigy, Active Financials, Gemstone, Gigaspaces, and Platform Computing are the first in a growing list. Cisco is working to create the broadest industry interoperability matrix with processor, server, and storage manufacturers such as Intel, AMD, HP, Sun, Dell, and EMC.

- Cisco Bandwidth Quality Manager (BQM)
- Cisco IP SLA
- Cisco AON Financial Services Monitoring Solution (FSMS)

Why Cisco?

Cisco is the industry leader in networking solutions. With its breadth of products and services covering the traditional network infrastructure, security, and unified communications, Cisco is uniquely positioned to deliver 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 interoperability matrix for processor (Intel, AMD, IBM), server (HP, Dell, IBM, Sun), and storage (EMC)
- World-class support (24-hour global support; depots in 122 countries)
- Global training, scalable advanced services, and 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>

The Cisco HPT: Algo Speed solution comprises:

- Cisco Server Fabric Switch (SFS) 7000 Series InfiniBand Server Switches, Datagram Acceleration Layer (DAL) software, and Cisco InfiniBand Host Channel Adapters (HCA)
- Cisco SFS 3012 Multifabric Server Switch (InfiniBand to Ethernet and Fibre Channel)
- Cisco SFS High-performance InfiniBand Subnet Manager
- Cisco Catalyst® 6500 Series and Catalyst 4948 Multilayer switches
- Wombat Feed Handlers
- Messaging Bus-29 West, TIBCO Rendezvous, and Reuters Market Data Distribution System (RMDS)
- Latency Monitoring

