



High-Performance Trading: Application Optimization

Increase Capacity, Efficiency, and Regulatory Compliance of Trading Back-Office Systems

What You Will Learn

Increased speed and volume of trades in the automated front-office translate into an increased load on the back-office systems. By implementing the Cisco® Application Optimization Solution in the data center, firms can adapt faster and more efficiently to market volatility. In this overview you will learn how virtualization of computing resources enables a new operational mode—the right resource at the right time, regardless of its physical location.

Challenge

Capacity is one of the main challenges that financial firms face today in their data centers. How do you efficiently grow your capacity when the volume of trades and market data are growing exponentially? How do you plan for capacity when trading traffic spikes by 100 percent when news hit the wires? The traditional model was to grow systems in silos, dedicated to each Line of Business (LoB). Within a LoB, each new application demanded its dedicated servers and storage. When the application ran out of headroom, the solution was to buy a more powerful CPU, more storage, and more network bandwidth. But with increased market volatility, firms face another challenge: provisioning enough capacity to sustain market peaks, while 90 percent of the time only 2 percent of that capacity will be used. Firms need a solution that makes business sense, especially in a very cyclical business such as the investment business. Data center resources must be more flexible to meet the demands of a contracting or expanding business.

Application Optimization

The Cisco Application Optimization Solution provides a platform for rapid provisioning of compute resources in order to respond in real time to changes in the market.

At the same time, the solution provides best practices for efficient implementation of security and financial regulation controls. The solution also addresses the need for business continuity by offering a dual data center design in an active-active scenario.

The components of the Application Optimization Solution are:

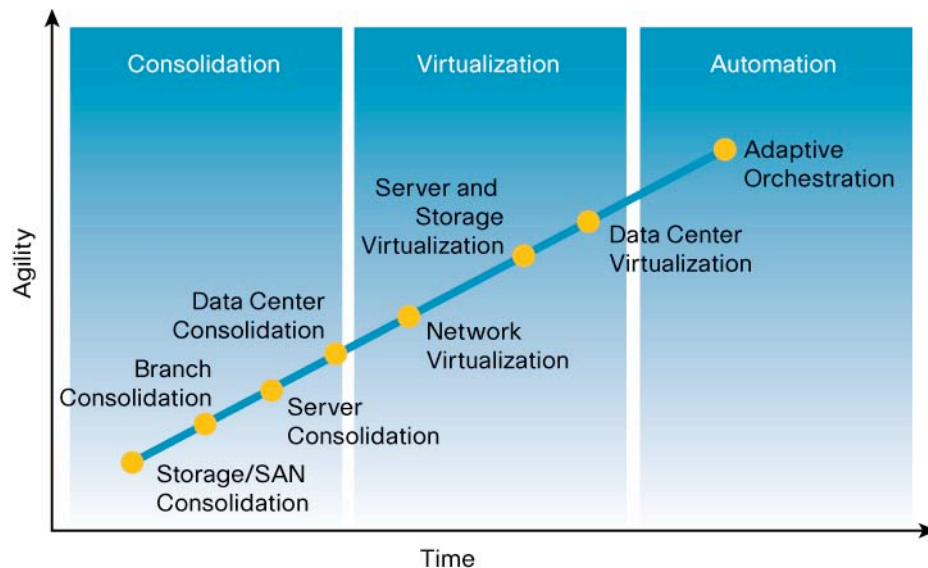
- Cisco Nexus 7000 Series Switches
- Cisco Nexus 5000 Series Switches
- Cisco Catalyst® 6500 Series Switches
- Cisco VFrame data center management software
- Cisco Global Site Selector (GSS)
- Cisco storage-area network (SAN) hardware
- Cisco Self-Defending Network elements: Cisco ASA adaptive security appliances, Cisco Security Monitoring, Analysis and Response System (MARS), Network Access Control (NAC), and Cisco Security Agent
- Gemstone Data Virtualization software
- VMWare Operating System virtualization software

In order to provide a complete solution, Cisco has partnered with GemStone Systems, an ISV who specializes in enterprise-level technologies such as distributed resource management, in-memory caching and disk persistence, scalable data distribution, high-performance computing operations, object management, and other areas that are at the core of building a highly reliable, mission-critical data infrastructure (<http://www.gemstone.com>).

Business Benefits

One of the major challenges of financial firms is to respond in real-time to variable capacity demands created by market volatility. Virtualization is the enabler of IT agility, with the end goal of automating provisioning, based on pre-defined policies.

Figure 1. Enabling IT Agility



The implications are many:

- **Improved efficiency:** Increase the utilization rate of existing resources, and reduce the total cost of operations.
- **Improved agility:** Respond effectively to sudden increase in volume; deploy new products faster.
- **Business continuity:** Trading applications can fail-over with minimal impact to an alternative location.

Intelligent Networking

Creating a resilient trading infrastructure requires an intelligent platform that can recognize a change in the environment and can re-orchestrate resources dynamically. This is an example of the Cisco Service-Oriented Network Architecture (SONA) in action.

Why Cisco?

The Cisco Application Optimization Solution is unique in its ability to help financial firms grow their data centers while preserving their investment in Cisco technology: Cisco VFrame software is compatible with the existing Cisco Catalyst 6500 Series Switches, as well as with the Nexus family of switches.

With the Nexus platform, Cisco is uniquely positioned to deliver the next-generation data center fabric for financial firms. This platform can scale to meet the exponential growth in volume and speed expected in financial markets.

Cisco provides a whole array of high-availability options: from network connectivity to application load balancing and continuous system operation, Cisco and its comprehensive ecosystem of partners can deliver unique features and solution compatibility.

For More Information

To learn more about how the Cisco Application Optimization Solution can benefit your organization, contact your account manager or visit <http://www.cisco.com/web/strategy/financial/markets.html>.

For more information on the Nexus platform, please visit <http://www.cisco.com/go/nexus>.



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