

NYSE EURONEXT

Ciena builds world's first 100G network with NYSE Euronext to deliver huge competitive advantage



What Our Customers Are Saying

"The Ciena solution is vitally important to NYSE Euronext because this is what gives us a key component of our competitive edge in terms of latency and getting data to and from customers as fast as possible. This is the foundation of the building and without the Ciena solution, we don't have a data center facility capable of giving us and our customers the edge over competitors."

Andrew Bach
Senior Vice President,
Communications
NYSE Euronext

In the financial sector, executing trades milliseconds, and even microseconds, ahead of the competition can mean the difference between making or losing huge sums of money. In fact, the cost per millisecond of additional delay on most financial institutions' networks usually runs in the millions of dollars. New York Stock Exchange (NYSE) Euronext, the world's most diverse exchange market group, is using the first-ever 100G network—based on Ciena technology—to build an advanced, high-performance data center network capable of delivering a clear competitive advantage to NYSE Euronext's customers.

Challenges

NYSE Euronext is one of the world's largest and most diverse exchange groups. Through its exchanges, NYSE Euronext handles nearly 40 percent of the world's cash equity trading. In addition to its traditional New York exchange, NYSE Euronext hosts other exchanges in the U.S. and Europe while continuing to open new exchanges and partner with existing exchanges in emerging markets.

“NYSE Euronext is expanding rapidly, but the market itself has become a lot more active and that’s driven up demand on bandwidth dramatically,” says Andrew Bach, Senior Vice President of Network Services at NYSE Euronext. “Over our financial information network infrastructure, we were starting to consume 10G waves like they were candies.”

Latency, or the delay users experience moving information from one place to another, is one critical issue facing NYSE Euronext and the wider financial community. Organizations like NYSE Euronext aim to reduce latency because the cost of delay in the financial sector is becoming increasingly pivotal. For example, 10 milliseconds of latency can lead to an estimated 10 percent drop in a company’s revenues.¹

NYSE Euronext’s aggressive expansion strategy and continued mission to deliver information to customers as fast as possible have challenged the company’s IT infrastructure to maintain and exceed its already high levels of customer service. As a result, the business is developing an innovative, leading-edge networking strategy built around the world’s most powerful 100G networking technology from Ciena.

Solution

NYSE Euronext’s strategy for managing increasing demand and supporting market expansion is to develop two substantial data center facilities in the U.S. and Europe, starting with one in the greater New York area and one just outside London. The New York site is approximately 400,000 square feet, equivalent to four football fields. NYSE Euronext is using Ciena’s 4200 RS to provide connectivity between the data center, customers, and a wide variety of financial information and trading applications.

The Ciena technology is the first in the world capable of delivering a true 100G data stream over a single wavelength, enabling a single pair of fibers to carry more than 8 Tb/s of traffic (more than 800 10 Gb/s services). NYSE Technologies, a unit of NYSE Euronext, manages the Secure Financial Transaction Infrastructure® (SFTI®) network, the company’s global communications network, which is also being expanded to increase capacity dramatically and reduce latency between the new data centers and customers around the world. NYSE Euronext has calculated that the Ciena network delivers latencies as low as 5.2 microseconds per kilometer. Initially, the 4200 RS is being used to support a growing demand for bandwidth in the greater New York and London metropolitan areas. The platform will be rolled out to the company’s other data center locations as they go live.

As part of its new network strategy, NYSE Euronext also is consolidating a number of legacy data centers it now manages, following acquisitions of several exchanges during the last few years. One of the key aspects of the new data centers—and a new service offering from NYSE Euronext—is enabling customers to colocate their networking equipment near NYSE Euronext’s servers, and therefore much closer to NYSE Euronext services. Customers prefer to be as close to the data center as possible to minimize latency and improve overall network performance. This proximity will help NYSE Euronext generate a significant additional revenue stream.

“The two critical drivers for NYSE Euronext in building a network infrastructure capable of meeting customer demand and market expansion, are capacity and latency. That’s why we chose Ciena,” says Bach. “What we’re developing is way ahead of any exchange in the world and we wanted a partner that could take on the challenge of being at the

¹Reference: TABB Group



Summary

Challenges

- Increasing opportunity to complete transactions before competitors, even if only by milliseconds
- Supporting a business strategy to grow trading volumes globally
- Delivering market-leading financial networking services

Solution

- The world’s fastest financial information network
- Ciena’s single-wavelength 100G technology
- Ciena’s ActivSpan 4200 RS 17-slot Advanced Services Platform

Benefits

- World’s first 100G, high-performance, low-latency data center network
- Provides a competitive advantage: faster information exchange for NYSE Euronext and its customers
- New revenue streams and opportunities offer customers new and improved services
- Ten-fold reduction in data center space and management time versus other solutions

leading edge of fiber optic technology. Ciena was the only vendor able to deliver 100G capability, and within the aggressive timeframe we required. Our partnership with Ciena is not to buy a couple of boxes, but a long-term alliance that we view in terms of decades.”

The Ciena technology is a key part of a wider data center solution implementation led by NYSE Euronext and EMC®, a Ciena BizConnect partner. NYSE Euronext also chose to work with Ciena because Ciena is one of the few network vendors with products that integrate easily with other technologies such as EMC’s Smarts® data center analysis and management tools.

Benefits

Ciena’s technology has enabled NYSE Euronext to develop one of the world’s most powerful network infrastructures. Bach explains, “Competition in this environment is a race to zero. Whichever market can get to zero latency first, wins. We’re bringing in orders from our customers and the difference between winning and losing an order is measured in fractions of a millisecond ... and thanks to the capability of the Ciena solution, we’re winning this business.”

The Ciena solution means that NYSE Euronext can provide its customers with large, high-capacity access to the customers’ own equipment, which is located in the NYSE Euronext data centers. These customers are bringing in huge volumes of data from markets around the world to determine the best dealing position or which orders to submit to NYSE Euronext. For example, NYSE Euronext’s equity exchange transactions every day are valued at around \$154 billion, or approximately 40 percent of the entire world’s cash equity activity.

Ciena’s technology helps build an infrastructure that is also easier to manage, costs less, and requires less space in the data center. NYSE Euronext compared the floor space needed to accommodate the Ciena solution versus other solutions, for which carriers need equipment space and extra power. The result was 10:1 in favor of Ciena. “With other solutions, where you try to build the network through some sort of assemblage of carrier circuits, the equipment needed starts to add up to thousands of square feet instead of a couple of racks of Ciena equipment,” says Bach.

An additional benefit of the Ciena solution is turning NYSE Euronext’s huge investment in its new network infrastructure into a revenue-generating opportunity. Because the end result is an easy-to-manage network, NYSE Euronext can offer customers a range of additional data communication services such as colocation.

Ciena may from time to time make changes to the products or specifications contained herein without notice.
© 2011 Ciena © Corporation. All rights reserved. SS026 1.2011

About NYSE Euronext

NYSE Euronext (NYSE) is a leading global operator of financial markets and provider of innovative trading technologies. The company’s exchanges in Europe and the United States trade equities, futures, options, fixed-income and exchange-traded products. With more than 8,000 listed issues, NYSE Euronext’s equities markets—the New York Stock Exchange, NYSE Euronext, NYSE Amex, NYSE Alternext, and NYSE Arca—represent nearly 40 percent of the world’s equities trading, the most liquidity of any global exchange group. NYSE Euronext also operates NYSE Liffe, the leading European derivatives business and the world’s second-largest derivatives business by value of trading. The company offers comprehensive commercial technology, connectivity and market data products and services through NYSE Technologies. NYSE Euronext is in the S&P 500 index, and is the only exchange operator in the S&P 100 index and Fortune 500. For more information, please visit: <http://www.nyx.com>



Specialists in unlocking
network potential to help you
change the way you compete.

1201 Winterson Road
Linthicum, MD 21090
1.800.207.3714 (US and Canada)
1.410.865.8671 (outside US and Canada)
+44.20.7012.5555 (international)
www.ciena.com