



SERVICE PROVIDER

AMS-IX Readies for 100 Gigabit Ethernet with Brocade

EXECUTIVE SUMMARY

Challenge

Deliver superior performance and uptime to 500-plus service providers while providing a migration path to 100 Gigabit Ethernet (GbE)

Solution

- Brocade MLXe Core Routers with 100 GbE module
- Brocade 8x10 GbE blades

Results

- Increased business agility by doubling network capacity and enabling scalability to 100 GbE
- Upgraded network infrastructure with no downtime or impact to customers
- Improved performance and automated failover by eliminating outdated protocols
- Created a cost-effective upgrade path to 100 GbE that will not require a network overhaul

For AMS-IX (Amsterdam Internet Exchange), the network is its business. The Internet exchange point sells interconnectivity, providing IP interconnection and peering services for every type of IP traffic. In addition, AMS-IX hosts the first worldwide mobile peering points, the Global GPRS Roaming Exchange (GRX) and the Mobile Data Exchange (MDX), and the first interconnection of IPX networks (Inter-IPX).

The organization's nearly 500 members—carriers, ISPs, telcos, content providers, CDNs, hosting and application providers, and mobile networks—generate more than 10 petabytes (PB) of data per day. Since launching in 1994, AMS-IX has experienced a doubling of traffic every 12 to 18 months. The provider must manage this explosive growth in traffic and ensure that the network infrastructure remains stable for its members. Should this stability and reliability falter, the Internet also would falter.

With traffic volumes increasing, the original AMS-IX infrastructure, a dual-star network, had reached capacity. The organization realized that further upgrades on this model would provide only minimal improvement. AMS-IX needed to invest in a significant upgrade and in industry-leading, future-oriented technology that would allow it to increase port density across the network while developing a migration path to 100 Gigabit Ethernet (GbE) technology. AMS-IX selected a scalable, Multiprotocol Label Switching (MPLS) topology with cost-effective networking solutions from Brocade.

UNEQUIVOCAL PERFORMANCE LEADER

AMS-IX deployed Brocade® MLXe-32 routers with new, high-performance switch fabric modules, which enable virtualized data centers to support rising traffic demands and deliver cloud-based services using less infrastructure—thus improving operational efficiencies and reducing

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costs. Brocade MLXe routers fulfill AMS-IX's demand for capacity growth while providing a migration path to higher densities of 10 GbE and 100 GbE ports. AMS-IX also deployed 120 8x10 GbE blades, doubling the Brocade MLXe capacity threshold to 256 wire-speed 10 GbE ports in a single chassis.

"Brocade was the only provider that could build a bridge toward the higher-density 100 Gigabit Ethernet ports while leveraging the existing infrastructure," says Henk Steenman, Chief Technology Officer at AMS-IX. "This was a key factor in our decision-making process, as we did not want to invest in an environment for the short term and have to replace it at a great expense to move to 100 Gigabit Ethernet."

The deployment was completed seamlessly, without impacting AMS-IX customers. In addition, the new platforms doubled AMS-IX's 10 GbE port capacity overnight, ensuring more stability, more capacity, and ease of mind to managers who know that failover is fully automated.

"Brocade was able to deliver an infrastructure that could accommodate a combination of three key factors: performance, extremely high scalability, and reliability," Steenman says. "We are in the enviable position of being able to meet projected demand for the next 24 months and offer 100 Gigabit Ethernet without undergoing a major network overhaul."

Before introducing the 100 GbE ports as a production service to its members, AMS-IX first tested 100 GbE with live Internet traffic from Limelight Networks, a leading

content delivery network for entertainment, technology, and government organizations. The two providers viewed 100 GbE as the next stage for their networks, and as a high-quality, non-blocking interconnectivity and peering service for their members and customers.

"We tested up to 98 gigabits per second [Gbps] of Internet traffic without any problems," notes Denver Maddux, Vice President of Network Engineering at Limelight Networks. "We require peering connections that assure the best-possible blend of performance and reliability, and we are pleased that AMS-IX—thanks to Brocade—has again set the benchmark for how peering models should be addressed."

AMS-IX also tested 100 GbE with SURFnet to ensure the interoperability between different networking platforms. SURFnet successfully tested the longest 100 Gbps connection (1650 kilometers between Amsterdam and Geneva) deployed to date.

AMS-IX Network Engineer Martin Pels says, "The joint trial has given us the opportunity to test the use of long-distance 100 Gigabit Ethernet links for connecting remote customers to the exchange. It also has given us valuable input into the use of 100 Gigabit Ethernet together with DWDM transmission equipment—which proved to be useful when we deployed 100 Gigabit Ethernet in our network core."

AMS-IX upgraded to 100 GbE modules, gaining unmatched performance and scalability with 32 wire-speed 100 GbE ports in a single Brocade MLXe-32 router.

WHY BROCADE

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— Henk Steenman, Chief Technology Officer at AMS-IX

BUILDING FOR THE FUTURE

AMS-IX must provide its members with a platform and services that will help them build and grow their businesses. The Internet exchange point is now well-equipped to provide the services its members need.

"We are able to leverage higher throughput rates and wire-speed performance, which enables us to deliver advanced services to our members at an attractive price point," says Steenman. "In an age when consumers are demanding high-quality media content from wherever they may be, this infrastructure is pivotal to our success for the foreseeable future, and Brocade is more than meeting our stringent demands for industry-leading performance at cost-effective prices."

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