Success Story:

One of the World's Largest Internet Exchanges Achieves Real-Time Performance Transparency

Type of Company:
Non-profit, Membership-Based Internet Traffic Exchange

Specialty:
IP Interconnection and Peering Services

Accedian Solution:
1GigE and 10GigE Network Performance Elements

Large Internet Exchange, AMS-IX, Achieves Real-Time SLA Transparency with Customer Portal and Accedian Network Performance Elements

Established in the early 1990s, AMS-IX (Amsterdam Internet Exchange) is a neutral, non-profit, independent internet exchange based in Amsterdam, the Netherlands. Its customers include large internet service providers (ISPs), fixed and mobile operators, content providers, and other communications companies.

Since its inception, AMS-IX has a history of being forward-looking. At a time when cloud was not nearly as ubiquitous as it is now, especially for enterprise applications, the provider established itself as a performance-oriented exchange, putting significant effort into transparency and performance assurance. This included collecting and reporting end-to-end network key performance indicators (KPIs), using Ethernet OAM/Y.1731 to cover a combination of Ethernet, MPLS, and VPLS technologies used in exchanging traffic.

Those efforts paid off, leading the exchange to its industry-leading ability to publicly publish real-time service level agreement (SLA) stats on a web-based portal for its customers. This is possible because AMS-IX uses Accedian 1GigE and 10GigE network performance elements for both interconnect and monitoring wherever a service is delivered.

End-to-End Visibility Goals

AMS-IX recognized that SLA-backed interconnect services were becoming increasingly critical to their customers—especially direct connection and preferred-peering-to-cloud providers. They saw expansion and evolution of enterprise connectivity needs, with IT infrastructure being increasingly cloud-based—as it continues to be today, with direct connections and peering between enterprises and cloud providers becoming vital for access to critical applications, and for wider business performance as well.

The exchange therefore set out to establish and meet robust SLAs for its Internet Peering and Inter-IPX services, as well as prove SLA compliance with transparent reporting. That required establishing a system for collecting end-to-end network KPIs, and a customer portal where those insights would be delivered.

The Right Hardware Answer

After conducting an extensive research study into methods of measuring performance of an IP-based exchange network, AMS-IX developed a requirements list for the hardware solution it would choose:

- Measure service availability using Y.1731 OAM metrics –
  - Packet loss
  - One-way and two-way average delay
  - One-way and two-way average delay variation (jitter)
  - Frame loss
  - Uptime
  - SNMP support

- Expandability with 1GigE and 10GigE options.

- Precise clock synchronization between devices.

Following a review of vendor solutions, only Accedian's Network Performance Elements emerged as being able to fulfil all of these requirements—plus a couple of other distinct advantages:

- FPGA-based technology with microsecond precise, one-way monitoring that reports on latency, packet loss, and link capacity.

- Open integration with AMS-IX's existing data collection and reporting system.

Notably, Accedian's network performance elements are unique in their ability to monitor metrics in each direction, with microsecond accuracy. This is very important for AMS-IX, because exchange interconnects only cover short distances; therefore, measuring their performance in milliseconds would not be sufficient to differentiate specific connections, or detect at an early stage any issues affecting performance.

The real-time monitoring capabilities built into Accedian's Elements give AMS-IX in-depth visibility into how their network is performing, allowing them to be completely transparent with their customers. This level of visibility and control contributes significantly toward AMS-IX being an interconnection leader.

Achieving Real-Time SLA Transparency

After selecting Accedian network performance elements for service interconnect delivery and real-time monitoring, AMS-IX then built its own customer-facing dashboard to collect, graph, and present performance KPIs from the elements and make it publicly available. This information is displayed visually through a web portal, allowing users to select specific measurements and see how the network is performing to confirm SLAs are being met.

The AMS-IX live feed shows actual values from a single measurement selected by the user. Values are refreshed every 5 seconds, or 1 minute for frame loss. Users can easily switch between metrics.

AMS-IX customers can check real-time network performance stats, and confirm there SLAs are being met, using the web portal.

Next Steps

The investments AMS-IX made in performance assurance and reporting continue to pay off, as cloud services use increases and Internet Exchanges become more valuable. This trend also puts more pressure on the internet and its performance, necessitating the very type of accurate, granular performance monitoring and assurance AMS-IX was forward-looking enough to adopt, ahead of its time.

It is worth noting that, with the accelerated development of software-as-a-service (SaaS) options, the type of customer-facing web dashboard AMS-IX custom-built has been available off-the-shelf through options like Accedian's VisionMETRIX. Using it for transparent, real-time reporting to customers, as AMS-IX does, is still unique and outstanding for an Internet Exchange.

Accedian continues to support AMS-IX's network expansion, as the provider adds more Points-of-Presence (PoPs) in the greater Amsterdam area.

CASE STUDY