Exa Networks selects Arista for critical network upgrade to overcome bandwidth, space and power challenges to deliver innovative communication services to UK schools

Highlights

Challenge
Faced with growing demand for bandwidth and limited space, EXA Networks decided to move to a higher throughput yet flexible Arista network architecture.

Arista Solutions
- Arista 7280R Series Switches
- Arista EOS®
- CloudVision

Results
- Increased core network bandwidth with flexible provisioning and scale
- Higher density solution with lower power consumption to avoid site move
- Lower latency, higher reliability and room to scale to a 100Gbps capable network design

Exa Networks is a pioneer in delivering internet connectivity for schools at a compelling price point with award winning levels of service. With growing demand for bandwidth due to the increased use of video and other internet resources, Exa began a project to upgrade its space limited data centres and network away from MPLS based technology to a more flexible approach. With Arista, EXA has been able to create a network that can scale to 10 times its current capacity while reducing its data centre footprint and power consumption.

exa networks
advanced business internet

Project Background

Since founding in 2003, Exa Networks has grown with the simple aim to be the UK's best business and education Internet Service Provider (ISP). With years of experience and a customer community that includes over 10% of the UK primary and secondary schools, EXA has experienced strong growth and has been recognised as a finalist or winners at the Internet Service Providers Association (ISPA) awards for nine consecutive years including honours for Best Business Customer Service, Best Broadband and Best Dial Up.

Challenge

Behind the glitzy award ceremonies, EXA has deep technical and management expertise including adherence to ISO 9001 and ISO 27001 standards. However, it is in the depth and breadth of its network capabilities and services designed for education that makes its biggest statement.

"Over the last decade, schools have really embraced internet based resources and this has led to a huge demand for bandwidth and the services to help keep staff and pupils safe while online," explains Thomas Mangin, technical director and co-founder of Exa Networks, "Talking to our customers, it's clear that this trend is likely to grow with more video in the classroom and access to remote learning and collaborations tools."

EXA has countrywide meshed networks and a range of products including entry level 24 Mbps ADSL and leased Lines up to 10 Gbps offering an uncontended connection for larger sites. The most recent addition is its DarkLight service offering a future proofed connection, with symmetrical speeds that can be upgraded without additional construction at any time, from 100 Mbps to 10 Gbps with lower costs than other ultrafast services along with the 99.9% availability Service Level Agreement.

Many of Exa current services run on an MPLS network but as Mangin explains, "The longer term vision is to move away from MPLS which is costly and switch our customers over to services like DarLight that are more cost effective and better able to scale to their requirements."

With more customers and a growing network, EXA was starting to reach the limits of available space at its main point-of-presence in Telehouse East and North in London. Relocation would have been a major hurdle, incurring significant CAPEX costs plus a likely jump in energy consumption costs.

With these factors and demand for bandwidth increasing, Mangin and his team began evaluating the EXA infrastructure with a view to upgrading it to meet the challenge. The core Juniper switches within its network had served Exa well for the last 5 years but would not scale up to the 100Gbps capacities that the expected demand would likely require, "Our key requirements were for raw throughput, an ability to scale in line with demand and absolute reliability – with a good balance in terms of cost per port," he explains.

Solution

As a deeply technical organisation that runs a diverse infrastructure including Juniper and Cisco networking architecture along with UNIX, Linux and Microsoft Windows system; the EXA network team began an evaluation of a number of potential solutions. Based on a combination of price and performance, EXA selected Arista 7280R switches offering a high density 1RU design with 48 10G ports along with 6 100G uplinks. For added flexibility the unit offers a combination of 40G and 100G interfaces with Quad 10GbE or 25GbE mode support for seamless migrations.

EXA deployed Arista switches to five key data centre sites in a high availability active pair; a process that was speeded up by Arista CloudVision® to deliver initial and ongoing zero touch provisioning, configuration management and network-wide change management, including automated upgrades, network snapshots and rollback.

Conclusion

The ongoing implementation uses a multi-phased approach and overnight works meant zero downtime for EXA customers. The new Arista based network has delivered against expectations at performance level while CloudVision's suite of analytics engines allows EXA to simplify and centralise configuration management.

Yet the most crucial change is less visible, "We have effectively added enough capacity to comfortably scale to 10 times our current levels while retaining our investment in our core network which gives our customers more flexibility," says Mangin, "The performance of the Arista switches has exceeded our expectation and as the higher density design has allowed us to reduce our rack space and energy consumption."

Santa Clara—Corporate Headquarters
5453 Great America Parkway,
Santa Clara, CA 95054

Phone: +1-408-547-5500
Fax: +1-408-538-8920
Email: info@arista.com

Ireland—International Headquarters
3130 Atlantic Avenue
Westpark Business Campus
Shannon, Co. Clare
Ireland

Vancouver—R&D Office
9200 Glenlyon Pkwy, Unit 300
Burnaby, British Columbia
Canada V5J 5J8

San Francisco—R&D and Sales Office 1390
Market Street, Suite 800
San Francisco, CA 94102

India—R&D Office
Global Tech Park, Tower A & B, 11th Floor
Marathahalli Outer Ring Road
Devarabeesanahalli Village, Varthur Hobli
Bangalore, India 560103

Singapore—APAC Administrative Office
9 Temasek Boulevard
#29-01, Suntec Tower Two
Singapore 038989

Nashua—R&D Office
10 Tara Boulevard
Nashua, NH 03062