ING Bank Romania upgrades critical data centre infrastructure with Arista Networks

Challenge

ING Bank Romania needed to upgrade its legacy data centre three-layer network to a more advanced leaf and spine architecture to improve performance and reliability and support key automation and security initiatives.

Solutions

• Arista spine / leaf switches for high performance, low latency and scale

• Secured MACSEC interconnection

• Arista Software Driven Cloud Networking delivering standard based SDN innovation

• Deep support for VMware NSX based network and storage technologies

Results

• Improved performance and lower latency across a highly resilient network architecture

• High visibility and telemetry along with powerful automation processes

• Seamless migration processes with credible future roadmap to meet expected growth

To meet growing demand for its financial services, ING Bank Romania decided to upgrade its primary data centre to a new leaf and spine, non-blocking network architecture along with Software Defined Networking elements to ensure high availability and improve reliability and performance with more automation to streamline its operations.

Project Background

ING Bank Romania is part of ING Group, an international financial institution of Dutch origin providing banking, insurance and asset management services for individual clients, companies and institutions in over 40 countries globally.

ING Bank was the first international financial institution to open a branch in Romania since 1989, nowadays holding a solid position in the local market. Launched in 1994 as a niche provider for Corporate and Investment Banking, ING Bank Romania has grown at a sustained pace and today is a universal bank offering a full range of products and services to all customer categories in the country.

Challenge

ING Bank Romania is one of the leading financial services organisations as well as one of Romania's most widely used online banking services. To support this growth, the Bank has invested heavily in information technology and maintains two data centres that were starting to reach capacity.

As a modern banking organisation, a strategic decision was made to upgrade its current data centres from a legacy three tier network architecture to a new solution to support a more agile and scalable infrastructure. The upgrade would move to a new leaf and spine network to improve application performance and support more automation. As a 24/7 operation, the upgrade would need to offer seamless continuity of services while providing a solid foundation to support continued growth.

Solution

The IT department created a detailed tender process that evaluated over a dozen different technologies across networking, storage and virtualisation elements. Key criteria included a high degree of compatibility between the different data centre elements to provide flexibility and to ensure that vital security controls and automation processes could be successfully implemented and easily managed.

As Dan Cocosila, Manager Security and Core Infrastructure Services at ING Romania explains, "We eventually decided upon an Arista based leaf and spine network supported by VMware for application, network and storage virtualisation as together they offered the best combination of performance and reliability within a significantly simpler design. We also worked with a local Arista partner, UCS, to ensure we always had support on hand here in Romania. It was evident from speaking with all vendors that there was a clear roadmap for each technology that aligned with our own future direction."

The core of the network is built around Arista's Universal Leaf and IP Storage Networks that are specifically designed for next generation IP storage, Content Delivery, leaf and spine networks and Data Centre Interconnect.

The Arista fixed configuration switches combine dynamic buffering for lossless forwarding with high density and comprehensive L2 and L3 features with VXLAN encapsulation. With up to 48 wire-speed 10GbE ports, along with 6 100GbE QSFP each is capable of 2.16Tbps capacity while maintaining latency of under 3us. Highly available spine layer based on three 7160 switches each equipped with 32 100GE ports and together providing 49.2Tbps throughput with latency of under 2us.

To complement these core leaf/spine switches, the Bank deployed further switches of a different Arista series offering a 1RU platform and providing a secured MACSEC interconnection between two data centres.

The solution is part of the Arista Software Driven Cloud Networking (SDCN) that offers scalable MLAG for L2, ECMP for Layer 3 along with standards-based network-wide control, automation and analytics with deep containerisation and virtualisation support.

On top of this network layer, the Bank deployed VMware including NSX based Micro-segmentation that helps it to reduce its attack surface by creating secure zones within the data centres that allows it to isolate workloads from one another for enhanced security for applications built on VMs, containers, or bare metal servers.
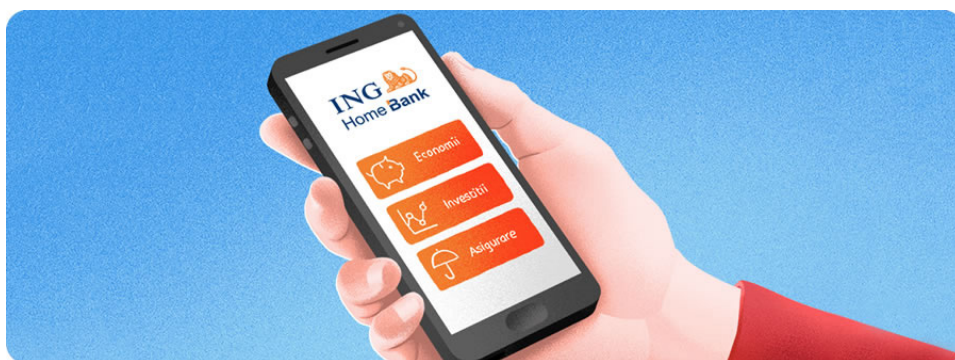
Conclusion

To ensure seamless switch over, the Bank deployed the new network and virtualisation architecture including a replicated application cluster in a third data centre during a high intensity project that spanned roughly 6 weeks. The Bank ran all three data centres in parallel to carry out extensive testing before switching over to the new primary data centre cluster. The IT team then began a similar upgrade process at the secondary data centre to achieve a fully active/active disaster recover position before decommissioning the legacy data centre site.

"Arista is an open technology, and this was an important consideration for us," explains Cocosila. "The combination of NSX and Arista CloudVision has given us improved visibility of the network and allowed us to start building our own automation process from day one."

With the new data centre up and running, Cocosila considers the project a major success. "The migration to a non-blocking architecture was seen as a strategic, yet high-risk project by top management. Its successful completion has substantially improved performance with reduced latency and everything across our infrastructure is now fully redundant," he says, "We are also able to investigate and resolve any issues much faster and have a clear roadmap for future improvements."

"At a personal level, we found it very easy to collaborate with the Arista technical team who proved invaluable during the upgrade. Due to the urgency of the project, implementation had to commence without a prior POC. We felt 100% confident and well supported by the local team throughout the entire process," Cocosila concludes.

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