

Case Study

Enterprise LAN

Biotech Company Builds 100G
Backbone Campus with
Ultra-High-Speed Wi-Fi 7 Network

A leading UK biotech company partnered with FS to transform its large campus network by deploying a 100G backbone, optimizing Wi-Fi 6/7 and implementing EVPN-VXLAN for high-speed and scalable connectivity.

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Country

United Kingdom

Industry

Technology

Network Type

Large Campus Wireless Network

Solutions

Enterprise LAN

“I'm very pleased with how efficiently everything was handled, and I appreciate your help in getting it all sorted. It's been a pleasure doing business with you on both the UK and US orders.”

Company representative

Highlights

- Boosted Wi-Fi 6/7 performance through the 2.5G and 10G PoE++ ports on the S5870-48MX6BC-U switch.
- Enabled large-scale data transmission between storage nodes with 64 100G ports of the N8550-64C switch.
- Improved network virtualization with EVPN-VXLAN by supporting multi-tenant isolation and flexible scalability.
- Simplified operations and enhanced O&M efficiency with synchronised upgrades by the unified PicOS® system.
- Reduced manual configuration and accelerated Overlay setup with AmpCon-Campus SDN controller.

Key Stats

- Saved 50% on hardware, licenses, and maintenance costs compared to other brand solution.
- 100G backbone network based on Spine-Leaf architecture for large-scale campus coverage.
- 80 AP-N716 Wi-Fi 7 support 12,000 wireless terminal devices with 160 Mbps per user.
- Quick procurement and ample stock ensured all equipment was delivered within 60 days.



Overview

The customer is a leading UK-listed biotechnology company specializing in T-cell receptor (TCR)-based immunotherapies for cancer, infectious diseases, and autoimmune conditions. With operations across the UK, Europe, Ireland and the US, the current network infrastructure supports over 2,000 employees. At the forefront of developing innovative therapies, the company leverages its advanced TCR technology platform to drive progress in the field.

Challenges

As the customer expanded operations across the UK and the US, their existing Cisco network infrastructure struggled to meet the growing demands for advanced protocols like BGP and MLAG. They also required a scalable solution to implement a distributed EVPN-VXLAN architecture for future growth, alongside a reliable wireless network solution capable of delivering superior Wi-Fi 6/7 performance.

Given budget limitations, the customer was in search of a more cost-effective alternative to Cisco that would still deliver the required performance and scalability over the long term. Alongside network requirements, they placed significant importance on securing reliable technical support and an extended warranty, to ensure smooth, uninterrupted operations and safeguard against potential network downtime.

Solutions

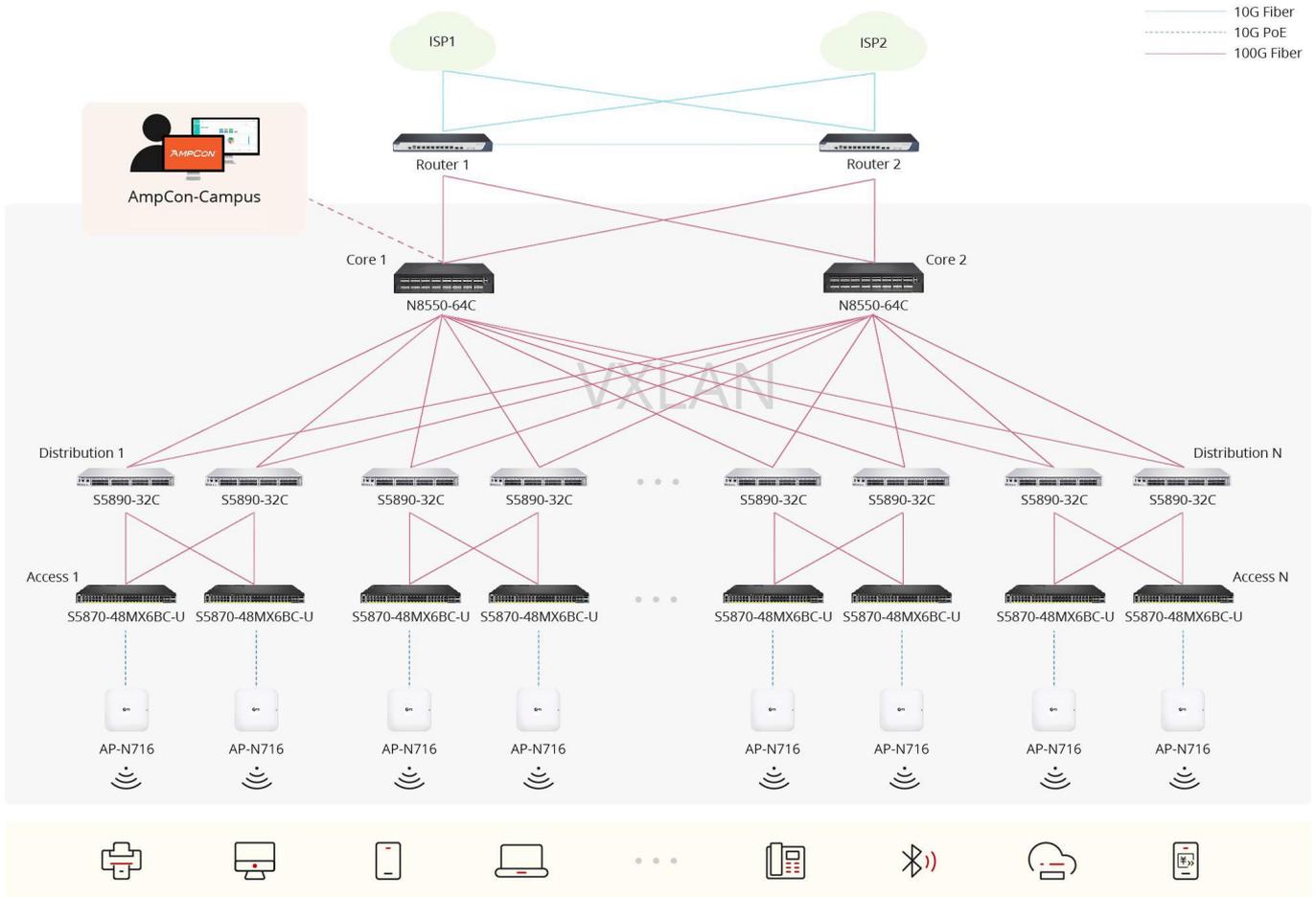
After several video meetings, FS and the customer collaborated to design a tailored network solution that directly addressed the existing operational challenges. The solution prioritised performance, scalability, and cost-effectiveness, ensuring it would not only meet current needs but also support future expansion.

The core network is designed with N8550-64C switches as the backbone of the infrastructure. Using MLAG (Multi-Chassis Link Aggregation), the switches provide enhanced redundancy and seamless high-bandwidth connectivity. By supporting key protocols such as OSPF, BGP, and ECMP, the design establishes a robust and scalable underlay network that guarantees efficient and resilient data routing for optimised performance.

In the service network, the business server cluster runs on OpenStack with Neutron to establish a VXLAN-based network. The N8550-32C switches are deployed to enable this virtualized architecture, delivering high-performance, scalable connectivity. This configuration ensures efficient service communication and seamless network isolation within the cluster.

The S5870-48MX6BC-U switches serve as PoE leaf switches in the office network, providing network access for Wi-Fi 7 APs. Using VLAN and VXLAN, they create a fully interconnected network with enhanced security and manageability through network segmentation. Powered by Trident 3 chips, the S5870 series offers high-performance forwarding and low latency, meeting the needs of multi-tenant environments.

To ensure ongoing reliability, FS offered a standard warranty for hardware and software products with a fixed coverage period, along with extended warranty options to suit varying needs. Customers also benefited from comprehensive 5-year free technical support and optional services like remote assistance, providing long-term peace of mind and flexibility. Explore the FS PicOS® solution to learn how it can elevate network performance and meet customized requirements.



Results

The customer gained a high-performance and efficient network through FS's custom-designed Picos® campus solution. With Wi-Fi 6/7 optimisation, they created a stable large wireless network, enhancing both user experience and service quality. The scalable 100G backbone enables high-speed data transfer and can be upgraded to 200G or 400G links in the future.

The solution provided cost-effective benefits by leveraging automating network management. With unified PicOS® system and AmpCon-Campus SDN controller, the solution reduced complexity and operational overhead. The EVPN-VXLAN architecture ensured flexible, efficient data routing, supporting seamless scalability and simplified network operations.

Product List

Product	ID	FS P/N	Description
100G PicOS® Switches	206401	N8550-64C	N8550-64C, 64-Port Ethernet L3 Data Center Switch , 64 x 100Gb QSFP28, PicOS®, Support MLAG, Broadcom Chip, Front-to-Back Airflow
100G PicOS® Switches	248183	N5890-32C	S5890-32C, 32-Port Ethernet L3 Switch, 32 x 100Gb QSFP28, Picoso, Support MLAG, Broadcom Chip, Front-to-Back Airflow
2.5G PicOS® Switches	206655	S5870-48MX6BC-U	S5870-48MX6BC-U, 48-Port Ethernet L3 PoE++ Switch, 36 x 2.5Gb PoE++ Ports, 12 x 10Gb PoE++ Ports @2100W, with 4 x 25Gb SFP28 and 2 x 100Gb QSFP28 Uplinks, PicOS®, Redundant AC PSUs, C2P Airflow, Support MLAG, Broadcom Chip
Wi-Fi 7	320689	AP-N716	AP-N716, Wi-Fi 7 802.11be 9300 Mbps Indoor Access Point, Seamless Roaming & 2 x 2 MU-MIMO Three Radios, PicOS® Manageable via AmpCon-Campus (Without PoE Injector)
100G OSFP28/SFP-DD	48354	QSFP-SR4-100G	Cisco QSFP-100G-SR4-S Compatible 100GBASE-SR4 QSFP28 850nm 100m DOM MPO-12/UPC MMF Optical Transceiver Module, Breakout to 4 x 25G-SR
10G SFP+	11552	SFP-10GSR-85	Cisco SFP-10G-SR Compatible 10GBASE-SR SFP+ 850nm 300m DOM Duplex LC/UPC MMF Optical Transceiver Module



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