Linköping University

SPB-based campus network simplifies set-up and user support and offers secure flexibility at considerably reduced cost.

> "Our new campus network is incredibly simple to configure and manage. We can now fully meet user expectations and provide them with additional services. With ALE, we have a partner who helps us succeed."
>
> David Byers, Head of IT office, Linköping University

Linköping University (LiU) in southern Sweden conducts interdisciplinary research and offers innovative educational programmes, often with a vocational focus. The university is spread over four campuses in three cities. Its 35,900 students and 4,300 employees are all supported by one IT team.

CHALLENGES

Linköping University's network no longer met its requirements. The standard three-tier architecture with a routed core could not offer the speed, resilience and flexibility expected today. Set-up, configuration and network management were complex and time-consuming, the equipment was old and slow, and the vendor was not very supportive.

ACTION

In order to standardise and stabilise the network, meet user expectations and reduce costs, LiU decided to implement a modern network solution from Alcatel-Lucent Enterprise (ALE). The project started with the implementation of the access layer in 2015, followed by the core switches and a Shortest Path Bridge (SPB)-based campus solution connecting all four sites. Finally, the data centre (DC) networks in Linköping and Norrköping were replaced and integrated into the SPB fabric, enabling the support of virtual clients and of servers outside the DC. A new network management system (NMS) was also implemented.

After careful evaluation, Linköping University decided to use Shortest Path Bridging for their new campus network which offered simplified management, largely automated switch configuration, and considerable cost savings. The existing architecture, which included hand-built tunnels and direct physical connections for L2 connectivity, was phased-out and replaced with SPB in 2017.

The physical and logical network architectures are now completely separated. Users can connect using any device, anywhere, anytime, by just connecting to any network socket, and they are automatically connected to the right part of the network (containment). This frees up time and resources so that the IT team can provide more focus and additional services to their customers.

PRODUCTS AND SERVICES

Alcatel-Lucent OmniSwitch® 6350, 6360 6450, 6560, 6860 (Access Edge)
Alcatel-Lucent OmniSwitch® 6900 (Core, Data Centre), 6465 (Industrial)
Alcatel-Lucent OmniVista® 2500 Network Management System
Shortest Path Bridging (SBP)

RESULTS

Technical Benefits
- All switches (core, access, data centre) use the same operating system
- SPB reduces network complexity
- Easier, largely automated configuration
- Increased network resilience
- NMS simplifies network administration, maintenance and updates
- Easy and secure plug-in for different devices/operating systems

Financial Benefits
- Both capital expenditures (CAPEX) and operating expenditures (OPEX) were reduced at the same time
- Cost per network port decreased by 80%
- 5-year contract enables reliable planning for investments and operating costs
- Updates and new features are installed once and immediately available throughout the entire network. No IT resources or travel needed for roll-out.
- Released from routine work, IT staff can provide value-added services

User Experience Benefits
- Internal users can move to another place and still have exactly the same access
- Guests can connect using their devices
- Tailored network environments can be built with very little effort. For example, special-purpose IoT networks with L2 connectivity across campus and off-campus locations
- Resilient and secure network access can be provided to external partners, tenants in LiU buildings, and service providers
- IT team can focus more time on value-adding and interesting tasks and services

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Customer Story

MARKET: EDUCATION	COUNTRY: SWEDEN	COMPANY:
DEAL IMPLEMENTED: SINCE 2015	NUMBER OF USERS: 40,000	LINKÖPING UNIVERSITY