

High-Speed Wired and Wireless Network for Stainless Steel Processor BUTTING

CASE STUDY

THE BUTTING GROUP

- 1,900 employees
- Manufacturing/stainless steel processing
- www.butting.com

CLIENT'S OBJECTIVE:

Modernization of the network infrastructure to secure business-critical processes in the future

SOLUTION:

Migration to a new high-speed network with components from the manufacturer Extreme Networks focused on network, wireless LAN, and security

NETWORK COMPONENTS USED:

- ExtremeSwitching
 - 2x S3 Switches
 - 8x C5 Switches
 - 80x A- and B-Series Switches
- ExtremeWireless
 - 170x Wireless Access Points
- ExtremeManagement
 - Extreme Management Center
- ExtremeControl
 - Extreme Access Control

'Made in Germany' is a synonym around the world for high-quality craftsmanship and reliability. BUTTING, a German manufacturer with a long tradition of craftsmanship and quality was founded as a coppersmith in 1777. Today, the BUTTING Group, with an annual turnover of 480 million euros and 1,900 employees, is one of the world's leading manufacturers of high quality stainless steel products, including pipes and tubing, ready-to-install components, and containers.

The Challenge: Build a Scalable Network that Will Grow with the Business

Production at BUTTING has raised sharply over the last 20 years, more than doubling the number of employees, and significantly expanding factory premises and number of buildings—with the Knesebeck, Germany site alone at 490,000 square meters. To meet the growing production demands, BUTTING required a future-oriented network that was as trust-worthy and efficient as the company itself.

The new network infrastructure would have to support BUTTING's critical need for:

- Increased bandwidth driven by growth in the business
- Fast, reliable and pervasive Wi-Fi with guest access
- A transport control system in the warehouses and the external sites
- A new Digital European Cordless Telecommunications (DECT) network

The restructuring was set to take place with as little downtime and impact to the business as possible, so BUTTING turned to its own IT staff, Extreme Networks, and BUTTING's long-standing IT partner, Communication Systems GmbH. According to BUTTING, the decision to implement an Extreme Networks solution was based on its impressive performance, future-proof scalability, and ability to easily connect additional buildings.

The Solution: Design and Implement a Robust Software-Driven Network without Impacting Current Production

Following a detailed design and preparation phase, work commenced on the partial rewiring with fiberglass and copper, laying and relaying of fiber optic LWL cables, installation of 170 wireless access points (mainly connected via fiberglass), and the wiring of 100 DECT antennas ensured comprehensive DECT telephony. This laid the groundwork for extensive Wi-Fi access across the whole site.



Wiring for the new 10-gigabit backbone was implemented using a completely redesigned core with two high-end switches from the ExtremeSwitching S-Series. This high-end switching platform offers switching, routing and security functions for all areas of application in the LAN, from the data center and core to access. With two core switches in a distributed architecture, as well as a high level of scalability with a backplane capacity of over six terabit/s and a throughput of 80/160 Gbit/s per slot, the S-Series is a future-proof solution for BUTTING. The two modular core components in the two data centers were combined into one logical unit using Virtual Switch Bonding (VSB). Each device initially features 16-port 10Gbit/s SFP+ and 48-port 10/100/1000TX. Expansions are possible using two free module slots and the systems are prepared for future bandwidth increases in the range 40/100Gbit/s.

A distribution level was introduced to connect the access areas. Two 24-port SFP switches each in the network nodes of both data centers and in two further central network nodes were installed. These were linked into a logical unit using stacking and connected to both core components via 2*10Gbit/s. The A- and B-Series switching systems in the access areas were connected via 2*1Gbit/s to the nearest distribution switch.

All links can be used actively via the link aggregation protocol and the use of VSB for the core components. Redundant connections were created, and no protocols, such as the Spanning Tree, are required. The hardware in the core and in the distribution also features a redundant design to act as a safeguard.

To connect the LWL network cards in the PCs to the machine control systems in the production area, ExtremeSwitching A-Series switches with 24-port LWL connections are used in the distribution levels, while in the office areas ExtremeSwitching B-Series switches were installed with Power over Ethernet (PoE) support for IP telephony.

For the ExtremeWireless solution, two Extreme Networks controllers are used. Each of the two controllers can manage up to 250 access points and - in the event of failure - take on the access points of the failed controller. Both controllers can be used actively and thus the installed access points can be distributed between the controllers. Especially with regard to the transport control system, this also produces a maximum redundancy for the Wi-Fi area.

To ensure the utmost security requirements and define rules for the access of individual devices, guest access to the Wi-Fi was implemented – just like the internal access by the employees – through the Extreme Access Control software solution. Guests obtain temporary access to the Wi-Fi through a voucher portal. For external service providers, separate VLAN networks were introduced in combination with SafeNet tokens for authentication. As a further security measure, the existing firewall was replaced by a more powerful, redundant version.

The central management was implemented with the aid of the end-to-end network management software, called Extreme Management Center, enabling networks to be administered and monitored more efficiently and effectively. A characteristic feature of Extreme Management Center is the granularity that enables the IT to look behind ports and VLANs through to individual users, applications and protocols - regardless of how many movements or changes are made in the network environment.

The implementation phase was completed in just about seven months. To prevent production operations from being put at risk, the old and the new networks were linked up and used in parallel during the migration for a transitional period.



The Business Outcome: A Modern and Secure Network that Operates at the Speed of Business

With the network technology from Extreme Networks, BUTTING now enjoys a modern, secure, and highly available network enabling the following results:

- **Fast and efficient communications between buildings.** BUTTING now enjoys extensive Wi-Fi connectivity across its manufacturing sites capable of supporting current and future bandwidth needs in the range 40/100Gbit/s.
- **Increased transparency, security, control and compliance of the entire network.** BUTTING's IT staff's use of Extreme Networks Management Center provides them with a



centralized view of the network for improved management and compliance with ISO 27001 certification, revision safety, and security audits that uphold international compliance specifications.

"We were particularly impressed by the modular portfolio of Extreme Networks, which we can also use to expand our network in the future without any problems and adapt it to suit all upcoming requirements. The central management also increases security and significantly facilitates administration for our IT team," says Heinrich Buchholz, head of the IT department at BUTTING. "In addition to that, I would like to highlight the professional assistance by Com-Sys. Our joint thorough preparation of the project and the good collaboration during the implementation phase have made a significant contribution to the smooth implementation."

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