

A CASE STUDY IN SECURITY AND AUTOMATION

Modernizing Infrastructure for a Global Life Science Giant



THE PROJECT

Overhauling the Infrastructure of a Global Life Science Giant

Proconex partnered with the world's largest pharmaceutical manufacturing company to upgrade the infrastructure of its expansive, 26,000 sq. ft. facility in Malvern, Pennsylvania. This facility, which handles life science processing, needed to comply with regulatory agencies worldwide.

This case study details four critical areas of the project, including cybersecurity, system uptime and availability, backup and disaster recovery, and simplified system administration.

Once this site was completed, the standard architecture and solutions were deployed to all their global manufacturing sites. This greatly improved supportability and management.

THE CHALLENGE

Aged Infrastructure and Cybersecurity Concerns

The facility's automation network suffered numerous issues, including outdated switches and neglected network traffic management. This project aimed to segment the network for better traffic management, tackle an aging infrastructure, and bolster cybersecurity measures. Furthermore, it supported a global initiative to enhance the infrastructure's reliability, supportability, and supply chain backup and restore solutions.

Learn how Proconex helped this healthcare giant overcome critical infrastructure issues through:

- Cybersecurity
- System Uptime and Availability
- Backup and Disaster Recovery
- Simplified System Administration

FOCUS AREA #1

Cybersecurity:

Strengthening Third Party or Remote Access Management and Network Security

THE ISSUE

The need for external access to the automation network for support and maintenance tasks raised the risk of unauthorized access and network misuse.

THE SOLUTION

Proconex implemented secure network entry points for trusted vendor connections. Additional measures include removing networking bridging, implementing specific firewall rules, and introducing a new method of remote access and file transfer. Proconex also prohibited the use of application admin accounts for specific server access and defined a more controlled strategy for vendor access to the most secure system layers.

FOCUS AREA #2

System Uptime and Availability:

Network Segmentation & Optimizing Virtualized Infrastructure Solutions

THE ISSUE

The facility had challenges with its physical automation network servers, including server failures, lack of centralized management, the need for downtime during physical firmware updates, and long hardware lead times. A single common network for both servers and field devices also led to a broadcast storm which brought down the entire system.

THE SOLUTION

Network segmentation was implemented to isolate field devices from server management communications, consolidate applications onto separate segments based on purpose, and provide dedicated networks for thin client access and backup solutions. The physical host servers were installed in two different buildings and designed to ensure system uptime even with the loss of an entire building.

Proconex implemented a virtualization solution that ran the automation infrastructure servers utilizing both VMWare and Hyper-V virtualization platforms to maximize system redundancy.

FOCUS AREA #3

Backup and Disaster Recovery:

Ensuring Reliable Data Protection Methods

THE ISSUE

There was a lack of adequate backup and disaster recovery methods for the company's servers, plus no reliable methods for server image and data backup or restore points.

THE SOLUTION

After qualifying several Backup and Recovery solutions, Proconex implemented the Acronis Backup and Recovery Solution, including historical and configuration data backups, Acronis Backup Emerson templates for DeltaV, and custom Acronis Backup Scripts for SCADA. Disk backups were implemented, redundant NAS units were used, and critical data was stored off-site for disaster recovery.

FOCUS AREA #4

Simplified System Administration:

Streamlining Maintenance Tasks

THE ISSUE

The facility's system administration activities needed to be completely overhauled and simplified.

THE SOLUTION

Proconex improved and standardized the system administration approach across platforms by utilizing the virtual infrastructure for easier monitoring and diagnosing issues and collaborating more closely with the IT department to align automation and corporate IT processes. This included implementing a domain trust structure which provides single sign-on for operators in the OT space without impacting system security.

IN SUMMARY

Unleashing the Benefits of a Secure and Modernized Automation Network

The benefits of implementing a modernized automation network included enhanced protection against cyber-attacks and broadcast storms, automatic and verifiable backup and restore solutions, improved uptime, and simplified administration. Overall, Proconex's solution delivered enhanced security, reliable backups, improved uptime, and simplified administration.

- Enhanced protection against cyber attacks
- Automatic and verifiable backup and restore solutions
- Improved uptime through virtual infrastructure
- Simplified administrative management
- Network management that isolates the effects of broadcast storms
- Leveraging IT capabilities and expertise

ABOUT PROCONEX

Proconex provides a complete portfolio of Process Automation Control Systems, Valves and Control Devices, and related technologies and services to a range of customers—in the Life Sciences, Chemical, Power, Refining, Oil & Gas, Food & Beverage, Paper, Metals, and other industries, as well as commercial enterprises and campus facilities. With three strategically located offices, Proconex maintains a deep dedication to its 300+ employees, a sharp focus on safety and quality, and the drive to deliver. The Proconex family of companies includes Atlantic Valve Services and Valspec.

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PROCONEX.IO
610.495.1835