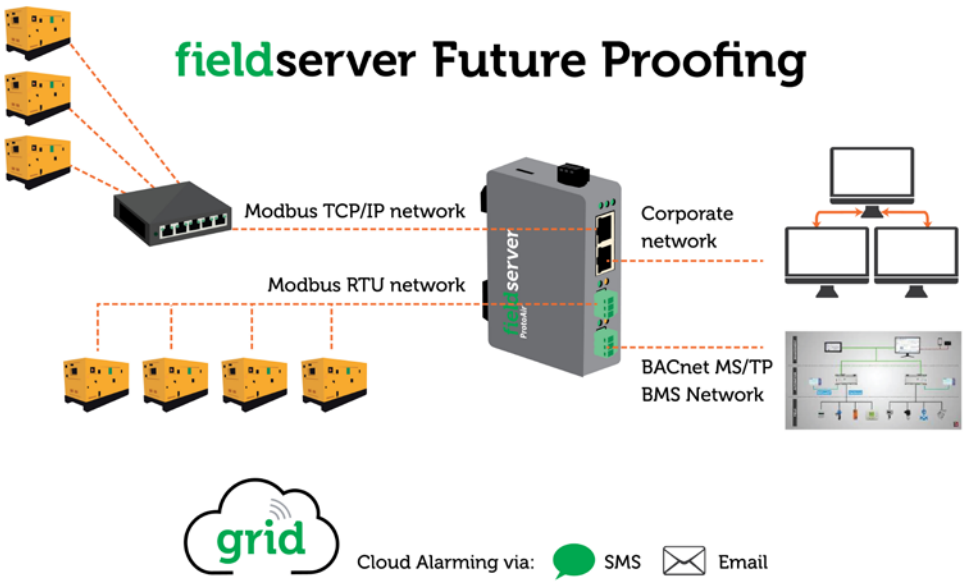
Future-Proofing a Building Automation System (BAS)

How a leading cargo airline simplified its mix bag of devices and data streams with MSA FieldServer's Dual Ethernet QuickServer Gateway.



System integrators have a tough enough job without having to figure out how to transform a disparate network of devices and data streams (each with their own diverse protocols and physical connections) into something both manageable and scalable.

Yet that's exactly what a very busy air freight organization needed.

Here's how we leverage our industry-leading IIoT (industrial internet of things) solution to deliver world-class functionality – without expensive, time-consuming, or elaborate implementation of multiple devices.

Challenge

Because the air cargo industry is inundated with literally millions of packages that must get from Point A to Point B in a hurry, there's no time for downtime – including a building automation system (BAS) that loses connections or fails to deliver correct readings.

According to one of the company's senior technicians, managing their network security was becoming more and more difficult simply because of the sheer number and types of different manufacturers.

They said, "Network and data security are getting more focus because there are more and more prohibitions about connecting to internal corporate networks. So, with more types of devices from different manufacturers to deal with, we needed a solution that was just as concerned with security as functionality."

Insights

Naturally, the company needed to find a way to take a highly diverse, multi-manufacturer network of equipment with varying physical layers and protocols and transform it into a single BACnet-based BAS.

Specifically, they needed a single product or product family to simplify both IP network connections approvals and ongoing maintenance. So, they turned to MSA FieldServer with this simple ask: **Give us reliable and secure monitoring of critical equipment.**

The proverbial devil, however, was in the details. Provide a sophisticated, single device solution that can...

- Connect a Modbus TCP/IP network and Modbus RTU network
- Securely pass the data to a BACnet MS/TP network
- Provide remote IP access to the device

And do it all without placing the Modbus TCP/IP equipment nodes on the corporate network.

Solution

We wanted to give them fast integration without network-based implementation so we offered them a sample unit of one of our newest FieldServer devices, the MSA Dual Ethernet 3000 Series QuickServer.

They tested it and it passed the test with flying colors. In fact, one HVAC team member called it “the newest and best FieldServer so far”; which is exactly how we had designed it.

For them, no other solution could do what QuickServer did, which was to satisfy their ask. How? By simply and easily bringing diverse devices and data streams together in one place while also successfully accommodating the carrier’s rigorous corporate network policies.

Because QuickServer is designed for easy implementation their integration team was able to perform this very specific set up:

- Using a small unmanaged switch on the Modbus TCP/IP side isolated from the BACnet network
- Installing a Modbus RTU network to connect an automatic transfer switch and diesel backup generator
- Wiring the second serial port to the BACnet MS/TP network for the BAS
- Pooling the data from all Modbus nodes (UPS, ATS, and Genset) and displaying it under a single BACnet device

Results

MSA FieldServer’s IIoT system gateway, the Dual Ethernet 3000 Series QuickServer, helped a leading cargo carrier bring their diverse data streams together in one place with a cost-effective, secure integration that did not necessitate putting unwanted Modbus TCP/IP equipment nodes on the corporate network.

Following testing and implementation, system integrators told us that ours was “the real multiport gateway they’d been waiting for. Today, QuickServer supports five protocols for the company, including Modbus RTU, Modbus TCP/IP, BACnet IP, BACnet MS/TP, and SNMP.

“They communicate on a very sophisticated modular UPS, a diesel generation, and a transfer switch – all from different manufacturers,” explains MSA FieldServer Product Manager Richard Theron. “With the FieldServer solution, data now passes from all three devices to the BAS with a single connection to the corporate network. FieldServer gave the company the remote access they wanted, all while keeping other manufacturer’s devices isolated. This is exactly why we developed an enhanced version of our gateway: to lower security risks and eliminate many of the common integration barriers posed by IT departments.”

Find out how we can put a solution like this to work for you. MSA FieldServer solutions, including QuickServer, can help you streamline building and industrial automation. For more information about connected solutions and protocol gateways specifically designed with network and data security in mind, contact us.

Results by the numbers*

1. **Device solution that simplifies both maintenance and connection approvals to the Modbus nodes.**
2. **Short weeks from the start of planning through testing to full implementation.**
3. **Benefits from a single device: less trunk load, lower device count, easier access to relevant data.**

**These results should not be considered a guarantee. They are specific to this organization and their particular application.*