Plant operator sets the standard for secure remote services

Summary

- Inteva, a global automotive supplier, needed a simple and flexible way to provide remote service to customers around the world
- The solution needed to be both secure and IT-friendly
- By installing the FL mGuard security device, Inteva ensured a secure connection for its customers and improved its customer service

Customer profile: Inteva Products

For Inteva Products, a high level of plant availability and uninterrupted deliverability is critically important. The automotive supplier produces sun roofs and other automotive products for OEMs. Due to tight delivery schedules, Inteva cannot afford any plant downtime. To restrict downtime, the production plants have been administered and serviced online remotely for several years.

Challenge: From modem to TCP/IP

Facilities, including final test stands with increasingly complex software programs, always require fast data connections. As a result, the age of modems in remote services is coming to an end. For the past five years, Inteva Products has implemented its remote service as a TCP/IP connection via DSL. In addition to higher data throughput, this method establishes a faster connection with more stability. A broadband data connection is now the standard, frequently linking an entire group of control computers to a single plant. Transmitting monitor images, updating software and executing database inquiries are becoming increasingly data-intensive.

A test stand of global automotive supplier Inteva Products at its Gifhorn/Wolfsburg factory in Germany: The production network is sealed off to prevent uncontrolled external connections. For a remote service deployment, each IP/VPN connection must first be actively switched on by a key switch. The corporate IT can see at all times who has conducted what activity on which device.

As today's production plants are more strongly networked than ever before, a greater security risk exists for unprotected TCP/IP Internet connections. For example, a virus attack on such a network could cause significant damage. "We've taken precautions to ensure security in production, and stipulate a secure VPN connection for remote service with every contractor. In addition, we use an industrial firewall to meticulously seal off any access from the remaining network," said Stephan Stottmeister, IS System Manager at Inteva Products.
Solution: Secure VPN technology

The automotive supplier has had a positive experience with mGuard, the remote service connectivity solution from Innominate. Innominate, a Phoenix Contact Company, is a German security specialist and leading provider of Industrial Ethernet security and secure remote maintenance for machines and industrial plants.

The use of VPN (virtual private network) technology ensures the security of the remote service connection. VPNs allow secure “tunnels” to be formed in the public transmission network. This technology offers several distinct advantages. The tunnels cannot be viewed or listened to from the outside, and all network packets are encrypted. Alternatively, hardware-accelerated 3DES or AES encryption and the standard IPsec protocol are used.

For Inteva Products, the complete control of internal and external plant access is of great importance. Using mGuard technology, the operator can control the activation of VPN tunnels. Approved communication can be systematically limited to the desired level through firewall rules. Stottmeister stresses that these features make an uncontrolled external connection in the network impossible. Additionally, each IP/VPN connection must be actively initiated by using a key switch. Stottmeister said, “Nothing occurs without the requisite control. We know at all times who is doing what, and on what devices.”

Results: Remote service solution quickly pays for itself

By using the remote service solution, the company increased its plant availability and saved costs. “It has been our experience that the contractors’ technicians no longer need to work on-site, thanks to the remote service solution. If there is a malfunction in a plant, a specialist is able to intervene much faster. We also save on travel and local deployment costs for the service technician,” said Stottmeister.

Inteva Products uses the remote service solution for ten plants, six test stands and one server. The contractors primarily use the online service during the startup phase of a plant, at the start of serial production, for ongoing optimizations or if any problems arise. A traceability system for production data, which runs on a database server, is also supported via remote service. An external partner provides programming support through this channel.

In practice, the mGuard solution has proven to be very flexible. The online connection is used in various ways, depending on the needs of the contractor and the plant. Normal service deployments are carried out by remote desktop and database queries via SQL. A Siemens SPS application in a small systems network with two test PCs and peripheral devices is controlled directly by TCP/IP.

The use of the mGuard’s virtual private network (VPN) technology ensures the security of the remote service connection. VPNs allow secure “tunnels” to be formed in the public transmission network. This technology offers several distinct advantages. The tunnels cannot be viewed or listened to from the outside, and all network packets are encrypted. Alternatively, hardware-accelerated 3DES or AES encryption and the standard IPsec protocol are used.
Selection of the remote service connectivity solution

Inteva Products identified several requirements when changing from modem technology to TCP/IP Internet connections. It wanted the new solution to be DSL-based. In addition, a firewall would seal off all plants and final test stands from the outside network. Operating the system without additional software installations was also an important factor. Regarding their selection, Stottmeister stated, “The mGuard solution precisely met our needs. Innominates consulting services were exemplary during both preparation and implementation.” Inteva is satisfied with the solution and the ongoing support that is provided by Innominates and certified partner Propius GmbH from Dresden, Germany.

The technology functions without any disturbances, and is simple to operate. “Contractors that want to access our plants do not need to worry about complicated VPN configurations. They receive the IP address of the final test stand, and that’s all there is to it. This is a solution in which everything runs smoothly,” added Stottmeister. Any fears that the plant suppliers would not accept the remote service solution proved to be unfounded once they learned of the simplicity, intuitive operation and high security standard. Additionally, some contractors did not yet have a suitable solution themselves.

Recommendations to other plant operators

When asked which practical experiences could be important for other plant operators, Stottmeister shared five points. Plant operators should pay close attention to:

1. the level of securitythe simplicity of implementation
2. continuous advancement and improvement of the product
3. functional expansion
4. the experience of the manufacturer.

Meanwhile, many technical solutions are on the market. Some of these solutions disappear from the market after a few years, leaving the user without access to support and ongoing development. When selecting and operating a remote service solution, an established solution that stays up to date with the latest security features and other innovations can ensure peace of mind.