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Petroleum
shares what it
took to build
a successful
fieldbus
project.

Better than a VPN

With more operations in scattered locations around the world, more need for remote access to data and equipment by managers, partners and suppliers, and increasing concerns about cybersecurity, many companies could benefit from fast, secure, high-volume access to control system data over the Internet.

“There is an increasing need for remote access to plant control system data streams for companies to efficiently manage far-flung operations in remote locations around the world,” says Andrew Thomas, CEO, Skkynet (www.skkynet.com). “Equipment makers also want to access operating machines on the plant floor to improve efficiency, as well as predict and prevent failures. They need remote access that’s equivalent to what they would see from inside the plant.”

The company has developed Skkynet Secure Cloud Service to provide that access for industrial applications, “to change the way people move data in and out of the plant—via a secure cloud server—for remote monitoring and supervisory control in real time with no additional hardware,” Thomas says.

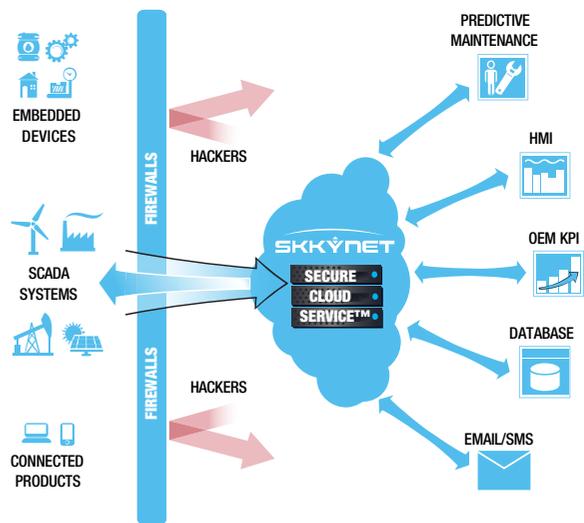
Conventional solutions are slow and cumbersome because they’re working with HTTP polling. The Skkynet service is able to transmit large amounts of data at the Internet’s inherent latency, as little as 35 ms or less, not five seconds. Thomas says, “We’re able to improve enormously on latency, speed and volume, with no need for the remote user to connect directly into the plant.”

Data is routed through a real-time, memory-resident database that can receive and retransmit data at more than 50,000 data changes per second. The technology supports publish/subscribe data delivery, an event-driven model where a client registers for data changes one time and then receives subsequent updates immediately after they occur. This low-latency system adds almost nothing to the overall data transmission time, effectively keeping throughput speeds to just a few milliseconds more than the network propagation time.

The service allows users to connect plant-floor equipment to management, as well as to partner and third-party companies, using software at the plant site that is configured by the client company to allow specific datastreams to be uploaded or downloaded to and from Skkynet’s secure server.

“The conventional recommendation has been to use a VPN, but you need to trust every machine on a VPN because you’ve opened your system to it. Security is not very good, it’s complex, and it’s virtually impossible to set up between two or more different companies.”

The cloud system solves that by providing a limited access log-in to suppliers, without allowing them to join the company network. “The primary source of security exploits is holes in



DATA FLOWS UNDER PLANT CONTROL

The Skkynet Secure Cloud Service allows third-party connection to plant-floor data without opening ports in the firewall.

inbound connections,” Thomas says. “These are removed, so there’s no attack surface on the plant.” Once the connection is established, data can flow both ways. But that data flows through completely closed firewalls, he says. “With no ports open, you never expose the plant or the control systems to Internet attacks.”

The plant installs Skkynet software designed to connect to any industrial system, using open, standard protocols like OPC, TCP and ODBC. It can be added to a SCADA system, function as an HMI for an individual machine, or access RTUs or even individual embedded devices.

The plant decides what data to send to the cloud. “It can set each data stream to be one-way or two-way, and can send some or all of the data, depending on its needs,” Thomas says. “The configuration is set by the customer and enforced by the connector. It’s set entirely in the connector, not in the cloud—the cloud can’t change the settings.”

The result is a robust and secure feed of live process data for real-time monitoring, collaboration, predictive maintenance, etc. “The primary problem we’re solving is remote access without opening the plant to the Internet,” Thomas says. “It’s like having a local HMI over the web.”

Scheduled for release Aug. 13, the Skkynet Secure Cloud Service will be demonstrated at the M2M Conference on Aug. 12-14 in Las Vegas.

For more information, visit Skkynet.com.

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Phone: 905-702-7851 | Email: info@skkynet.com | www.skkynet.com