FALKEN Secure Networks

RFID for IT Asset Tracking

Banking on RFID

At several of its locations, Wells Fargo is using EPC Gen 2 tags for a laptop tracking system, and has attached the tags to thousands of servers and other IT assets.

Secure and efficient operation of data center is critical for companies and institutions. With data integrity, legal and industry compliance requirements becoming more critical, the ability to document critical server and SAN components is becoming more important than ever. Security and effective data center management starts from visibility of IT assets by real-time tracking and monitoring of servers, SAN tapes and disks, and critical IT components. Tracking thousands of assets in a typical banking data center, and ensuring that laptop computers leaving a building are authorized to do so—and are with the properly authorized users—is a cumbersome task for bank security officers. But many financial services companies such as Wells Fargo are employing radio frequency identification to solve that inefficiency and mitigate that risk in both cases.

Wells Fargo has joined a number of other banks looking to RFID to speed up that process, and to ultimately provide better visibility into their IT assets, deterring theft as well as reducing the hours employees otherwise spend conducting inventory).

Wells Fargo is deploying an RFID asset-tracking system at its five primary data centers nationwide, in addition to using an RFID-based tracking system for laptop computers that leave several of its facilities. According to the company's senior VP, Mike Russo, these deployments are yet another example of how RFID should become a standard technology adopted by IT hardware suppliers to the financial market.

In late 2006, Wells Fargo first began evaluating RFID technology and assessing how it could be utilized to maintain control of its assets. The company started with a pilot at its data center in Roseville, Calif., tracking laptops coming out of that facility.

Employees and contractors entering and leaving the building often carry laptop computers that, in many cases, are the property of Wells Fargo but are assigned to a specific person. To track the laptops and ensure none leave in the wrong hands, security guards at the doorway would inspect individuals' computer bags and, upon finding a laptop, would look up the serial number listed on the computer in a company directory, to determine who was authorized to use that machine. The guards would then have to determine whether the individual holding the laptop was the one to whom it was assigned. This system was time-consuming, led to long queues as employees left the building, and was a source of frustration for both guards and workers.

With the RFID system, which was installed in early 2007, the process was automated. Each laptop computer has attached to it an ultrahigh-frequency (UHF) passive Gen 2 RFID tag with a unique ID number. That number is linked in Wells Fargo's back-end system to the computer's serial number, make and model, as well as the name and a photo of the individual authorized to use it. So as an employee with

a laptop approaches the building's exit, an RFID interrogator captures its ID number, and a computer screen next to the guard displays the machine's data, along with the user's name and picture, which the officer then compares to the person passing before him or her.

This system, Russo says, saves both guards and employees vast amount of time previously spent looking up laptop serial numbers individually and is much less invasive. Since the initial installation, the company has deployed the system at five locations, including some of its primary data centers.

Following the success of that deployment, the financial services company began considering other RFID applications, and started deploying an asset- and inventory-management system at five of its data centers, to track electronic assets within those buildings. The firm has attached EPC Gen 2 tags to tens of thousands of items tagged in the five major data center locations in the United States. What's more, RFID portals and read stations are now being installed at sites where assets are typically moved, in order to capture that movement whenever an asset leaves one location for another, such as from the "raised floor" area where the equipment is operated, to a storage area or toward an exit. Some of the five data centers are also the locations of the laptop-tracking solutions.
In this case, Wells Fargo has the RFID tags on such items as servers, chassis, blades, storage devices and other data center equipment. Each unique ID number is linked to data regarding that asset in Wells Fargo's back-end system. RFID portals are being installed throughout the buildings at locations where equipment could be moved, for example, between storage areas. If, for instance, a piece of machinery is decommissioned, it will leave the raised floor and pass through a portal that transmits the ID number to the back-end system, along with location, time and date. In that way, the company's ERP system can update each item's status (such as decommissioned) and location.

"If you look at it from an efficiency perspective, RFID makes perfect sense," Russo says. By using the technology to track the locations of so many items, he explains, the company is able to save significant man-hours that employees previously spent walking around the buildings conducting manual inventories or searching for data about specific items.

"As we started looking at RFID, we saw more and more clearly that there were ways this technology could benefit the entire industry," Russo says. "We all have the same problems we want to solve."

Blade servers with the Omni-ID Prox tag as you would see in a bank data center

If vendors begin tagging their products as they ship them, Russo says, the banks could receive advance shipping notices, and RFID readers at the receiving dock doors could update the bank's ERP system to indicate items have been received.

RFID Helping other Data Centres.
Bank of America has similarly announced a RFID implementation to drive value and mitigate risk for IT Asset Tracking. BofA has deployed the technology at 14 of its 38 data centers to date. The RFID tags are built into a form factor customized for use on IT assets—it provides a buffer that prevents the assets' metal frames from interfering with RF signals. He also confirms that the hardware is EPC Gen 2-compliant.

The mobile interrogators are mounted on carts that employees wheel up and down rows of server racks and other assets within the data centers, in order to read the tags attached to assets. And portal readers, mounted around the doorways leading into and out of the facilities, collect the IDs of tags attached to servers and other tagged assets as they are removed from and returned to a data center, so that all assets can be accounted for.

The movement of individual server blade and SAN components on any rack is immediately known and documented for compliance and security officer in the control room of each data center. The real-time location of each server blade and more importantly, the history of each server blade, SAN and other critical component positions will be recorded and kept as part of the system history and "pedigree" as part of the system data security and compliance.

Internally, Bank of America identified three main business areas where it will benefit from automating the tracking of its IT assets: operational efficiency, risk mitigation and regulatory compliance. Within the data centers that have deployed the RFID system, employees are already enjoying significant time savings when conducting periodic inventory. To inventory a row of servers at a data center, workers previously used handheld bar-code readers to scan each server's bar-coded label. Now, using a mobile reader mounted on a cart, they can walk down a row and collect the inventory in just 10 seconds.

In terms of risk mitigation, knowing the location of servers and other hardware holding customer data is a business imperative. Being able to more quickly identify the assets using RFID, relative to bar-code scanning, offers a clear benefit, though one that is difficult to quantify. Bank of America is also beginning to utilize the readers in the data centers to identify the magnetic data-storage tapes that are moved into and out of those facilities on a regular basis. The system may be upgraded to trigger an alarm when a portal reader detects a magnetic tape being removed from a data center before it is properly cleared for removal.

Thirdly, having up-to-date, accurate inventory data simplifies the process of complying with Sarbanes-Oxley and other regulations designed to account for corporate assets.

But the RFID system also offers the bank a better method for tracking the shipping and receiving of the IT assets it purchases. This higher level of visibility will lead to faster payment and order discrepancy resolution with vendors. In addition to attaching an RFID tag to each IT asset vendors ship to Bank of America data centers, the vendors' advance shipment notices will also include the unique identifier encoded to each tag. When receiving the shipments, the bank will then reconcile the tag data with those numbers listed on the notice.

This can trigger the employee receiving the goods to clear the invoice—if the shipment is correct. The bank's accounting system can thus be prompted to issue payment for the assets, while the equipment is transferred to a staging area, where it is readied to be put into operation. RFID readers installed at the receiving dock, and in the staging area, will also expand the asset visibility throughout the data center.

FALKEN Secure Networks(FSN)—Your partner for RFID automation

If you choose to pursue RFID implementation in your organization, here is the FALKEN Secure Networks commitment to you:

- FSN will provide solution architects to work with you to define system requirements for your particular installation. Multiple locations can be networked together for a central and real-time view and centralized management.
- FSN will do a RFID site survey to validate radio frequencies, tag types, system design and performance
- FSN will provide all necessary hardware and software to make the system work for you
- FSN will integrate the system with your existing enterprise management software
- FSN will provide documentation for the system, including operating procedures
- FSN will train your people
- FSN will provide warranty and continued system support

For RFID-enabled Document Tracking and Management, FALKEN Secure Networks (FSN) and partners bring together the right technologies to give you control over your files and make your office run more efficiently. Our automated and secure processes save time and labor, and prevent problems before they occur. With FSN ,you get the latest, non-proprietary secure RFID technology with the most powerful and flexible RFID file tracking software available.

Contact Us

FALKEN Secure Networks is a specialized System Integrator, RFID Solution Architect, and Value-Added Reseller with focused expertise in the RFID site survey, cost-effective design, and turn-key project implementation.

Contact FSN at sales@falkensecurenetworks.com

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