

# Active RFID

## Energizing Asset Management in the Data Center

Most large companies have embraced IT asset management as a valuable pursuit with a quantifiable set of contributions to the bottom line. As companies recognize the value of a unified ITAM program, attention is being devoted more equally among hardware and software assets.

As this happens, a hierarchy of hardware assets soon becomes apparent. At the top of any company's infrastructure pyramid are the servers that power its most critical processes and the storage devices that maintain its most sensitive data. These servers drive modern financial institutions, government agencies, communications networks and electronic commerce services. They are arguably the most valuable and most guarded IT assets in any organization.

For those facilities with a hundred or more racks full of critical corporate servers and related computers, storage devices, network hardware and test equipment, it's no longer possible to maintain an up-to-date inventory with traditional manual processes. Not with a pencil and paper. Not with bar codes. Not with passive RFID (Radio Frequency Identification).

### The Need for Accurate Inventory

IT managers are likely to be burdened with any number of requests for accurate counts of the equipment under their watch. More importantly, they may be required to prove that they have gone to the proper lengths to protect the sensitive data which resides on those assets. The ability to quickly respond to audit requests and inventory demands is even more vital to large publicly traded organizations, which are governed by strict accounting and financial compliance mandates. In addition, they are more likely to have their IT asset inventories scrutinized by third party auditors as an element of their compliance management strategy.

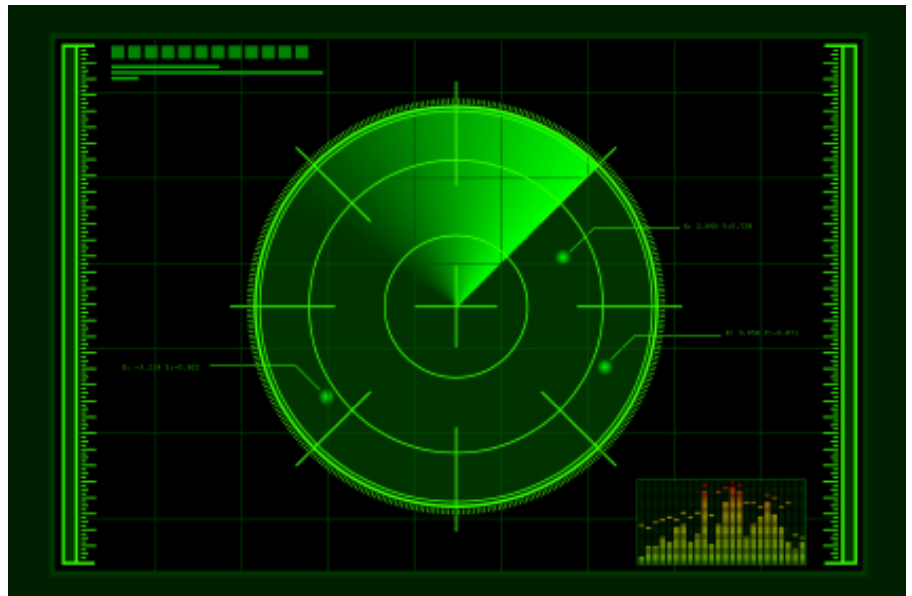
Unfortunately, these pressures to produce an accurate report of physical IT assets from outdated inventory data can draw resources away from more important business deliverables. Reconciliation procedures can drag on for months without any valid means

of accounting for assets that are missing from fixed asset inventories. The business as usual approach to inventory and audit is not only laborious, it is costly to conduct.

As most acknowledge, hardware audits are time-consuming and pressure-filled. Stories of IT administrators being assigned to accompany auditors for days or weeks are not unheard of. In some cases, highly-paid IT administrators are asked to sit in a room full of auditors in the event that one of them has a question or a request for clarification. In best practices mode, any IT organization would prefer to pre-populate detailed reports with the data that auditors might require in advance of their arrival—and free their skilled technicians to work on more time-critical projects.

But in the *new compliance era* ushered in by Sarbanes-Oxley, Basel II, HIPAA and the like, companies must be able to certify that they have protected critical business information and personal data. There is no way out.

As important, turning over incomplete, dated or otherwise inaccurate reports might only serve to spotlight the flaws in security policy or asset management.



## Challenges to Accuracy

In a large data center, new equipment is provisioned frequently (if not continuously). Existing gear is being maintained on an ongoing basis. Outdated servers are pulled from service and prepared for disposition. New networking hardware and storage devices are being integrated week after week.

As data centers begin to embrace the automation of repetitive processes, corporate IT asset management strategy must evolve as well. When inventory data is manually entered into server mapping or management applications, it introduces a less-than-valid component whose accuracy diminishes daily. Moves, changes and additions that are unauthorized or undocumented compromise the integrity of projects that might ordinarily benefit from automation. Outdated or incorrect inventories can contribute to long audit cycles and divert resources from more important projects. The marriage of the *automated* with the *antiquated* counterfeits the value delivered by new data center management and control solutions.

## The Evolution of Automated Inventory

The information technology sector as a whole has struggled to find the best way to track and manage computing assets. Enterprise managers have long suffered through the physical inventory process while experimenting with marginal upgrades to improve accuracy and reduce the burden on their department's human resources.

The days of pencil and paper were replaced by bar code scanners, which, in turn, began to give way to passive RFID interrogators in the largest facilities. What might have taken two weeks to accomplish with a bar code scanner can now be completed in a matter of days with a passive RFID reader. While these hunt-and-gather collection tools produce data that is batch integrated with back office systems upon collection, each inventory method still requires a significant time investment from staff members. Racks need to be unlocked. Doors need to be opened. Handheld collection devices need to be engaged.

Both methods are inherently inaccurate. The near-instant obsolescence has less to do with the performance of the collection technology (which can be very accurate in ideal conditions) and more to do with the fact that equipment often moves before these batch-oriented inventories can be completed.

None of these *door-pull* approaches, which require technicians to physically open an equipment rack door or enter a room to collect asset data, will survive in the automated data center.

## The Limits of the Manual Approach

Why not? Because at the point of completion, even the accurate data from a manually-derived inventory program begins to deteriorate as server locations change and computing gear is added or taken out of service. And change dominates in the modern data center. According to standard

industry estimates, assets can change as much as 20 to 30 percent each year. In contrast to facility automation data such as power consumption or server performance which are monitored and updated continually, physical inventories culled from bar codes or passive RFID tags can only be updated by repeating the collection process or through new (manual) data entry.

And who is qualified to conduct a manual inventory in a data center? Only those who are allowed to be there in the first place. Due to the secure nature of data center operations and the prevalence of access control hierarchies, it is likely that highly paid and highly skilled members of the IT team will be doing the data collection. Opening the process to outsiders would violate the basic tenets of any enterprise security strategy.

In many data centers, equipment racks are locked and require a change control request for a technician to gain access.

So, several times per year, a facility's key employees are being redirected to conduct asset inventories. In the largest facilities, asset management and data collection can become part of the job description. Generally, the time and effort required to complete inventories and audits removes key IT personnel from the critical day-to-day activities and for which they were hired. With the average fully loaded cost of data center managers, architects and storage administrators at or above \$100,000 annually, it isn't difficult to calculate how much a week's worth of inventory really costs. A cost-per-audit or cost-per-inventory calculation will reveal the need for more automated processes considering the accuracy of a manual inventory begins to erode immediately.

## A Better Inventory Solution

This old way of doing things is changing, however. The advent of continuous inventory solutions, powered by secure wireless data collection technologies, is propelling corporate IT toward a future where many more data center processes will be automated. In fact, the inventory process can practically be eliminated with a closed-loop, *active RFID* solution that produces accurate asset inventory and location information every 10 seconds. Active RFID tags are battery powered, which allows them to consistently signal their unique identification information and location data to companion readers which are integrated into equipment racks. These asset tags, operating on a UHF wireless frequency, can perform their perpetually-updated inventories without human intervention and without introducing RF interference to other technical gear in the data center environment.

This development is significant because the migration to data center automation is always about improving operational efficiency and effectiveness. The pressure is on to add new corporate applications and cut infrastructure costs at the same time. In exchange for hard-won server and software upgrades, data center managers are consistently being asked to more with less. The tradeoff with the finance department usually means a lower headcount for IT administration staff. This is

where the sidetracking of critical data center personnel to perform equipment inventories can really impact service integration and server maintenance operations.

In addition to freeing IT personnel from the drudgery of scanning assets throughout the year, a successful automation program will enhance other key performance areas such as server consolidation and new application provisioning.

In large data centers, manually-conducted inventories and

audits share distinction as the worst projects in IT. As a consequence, job satisfaction and employee retention can be adversely affected. Manual inventory processes divert precious (human) resources from critical maintenance projects and application provisioning. In addition, they introduce tainted or expired information into a world of increasing automation and real-time decision making. They pollute asset lifecycle management programs and lease-return programs with erroneous information. They introduce vulnerabilities into security programs and have the potential to undermine service level agreements.

An active RFID solution will enable data center managers to embrace continuous processes and leverage real-time visibility across the IT organization. The automation of inventory and reconciliation processes and the ability to account for every critical asset in real time throughout the data center are giant steps forward for any enterprise change control, audit or security strategy.

*Mitch Medford  
CEO of RF Code*



# Wish Granted.

## Automated Asset Tracking for Data Centers is Here.

RF Code makes gathering physical asset inventory and location data as simple as pressing a button. Our active RFID solutions eliminate traditional manual tracking processes while increasing visibility into your rack-based assets.



For a free demo, go to  
[www.rfcode.com/itakdemo](http://www.rfcode.com/itakdemo)