

Asset Vulnerability: The Six Greatest Risks Facing IT Asset Inventory and Management

Executive Overview

From procurement, to maintenance, to retirement, the lifecycle of a single piece of IT hardware introduces uncountable opportunities for asset tracking vulnerability. When multiplying these risks by thousands or even millions of servers, storage devices, computers, and other sensitive equipment, the magnitude of the chances for mismanagement, security breaches, auditing mistakes, and man-hour diversion expands exponentially.

The modern data center is an increasingly complex environment that demands increasingly more accurate asset inventory tracking. Knowing exactly which assets exist in the network and where they are located is vital to meet both internal asset inventories and external security compliance reporting. As such, periodic fixed asset audits are a mandatory and rigorous task for any IT department. The ability to quickly respond to audit requests and inventory demands is even more vital to large publicly-traded organizations that are governed by strict accounting and financial compliance mandates which certify that they have protected critical business information and personal data. For companies with a hundred or more racks full of critical corporate servers and related computers, storage devices,

network hardware, and test equipment, it's not possible to accurately track 100 percent of the devices and maintain an up-to-date inventory using out-of-date processes, like passive RFID tags and bar code technologies. Although they are widely employed today, neither technology has mitigated pressing issues. In fact, these manually executed inventory systems often introduce tainted or expired information into a world of increasing automation and real-time decision making. As a result, they pollute asset lifecycle management programs and lease-return programs with erroneous information. They have the potential to undermine service-level agreements. And they introduce vulnerabilities into security programs.

The IT sector has struggled to find the best way to track and manage its computing assets. The advent of continuous inventory solutions, powered by secure wire-free data collection technologies, is propelling the industry toward fully automated IT asset tracking. In fact, today, the inventory process can practically be eliminated with a closed-loop, wire-free solution that produces accurate asset inventory and location information every 10 seconds. This automated tracking system eliminates tedious inventory tasks, ensures device location accuracy, enhances data integrity, and improves security.

This white paper presents an overview of the six leading risks facing data centers — and explains how automated, wire-free IT asset management systems overcome all of them.

Challenge 1: Reduced Asset Visibility

Servers and networked storage devices spend most of their useful lives mounted in racks. These locations house the greatest collection of sensitive corporate data, and are likely to be protected by the strictest security measures. And yet, in spite of the best efforts of IT staff and the deployment of asset-tracking tools, like RFID and bar codes, assets are regularly unaccounted for, either due to being lost, misplaced, stolen, or misappropriated while being moved, retired, and serviced. Without an automated asset tracking mechanism, an asset removed from a rack one day might be misplaced for months. The opportunity for losses increases when devices are outside of a server facility for maintenance, overhauls, lease returns, data backup storage, or end-of-life disposal.

Solution — Real-Time Asset Visibility

The on- and off-network vulnerability of physical assets can be reduced or eliminated when their locations are dynamically monitored with a wire-free tracking system. An automated asset tracking system can help provide a continuous stream of data to track and monitor assets from the day they are provisioned to the day they are retired. Moves, additions, and changes are linked to continuous data generated from each device.

Challenge 2: Inventory Reporting Erosion

Change is a constant in the modern data center. Every day, changes are made somewhere, from server location moves, to adding new devices, to retiring out-of-date

devices. According to 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 manual data collection process.

As a result, the accuracy of a manual inventory begins to erode immediately after it's completed. Compounding the problem of inventory reporting erosion is the fact that turning over incomplete, dated, or otherwise inaccurate inventory reports will only spotlight the flaws in a data center's security policy and asset management practices.

Solution — Real-Time Asset Watch

A continually updated, automated device inventory system, complete with documented changes to location and notifications of authorized and unauthorized movements, is the only way to guarantee that computing hardware is 100 percent up-to-date at every moment in time.

Challenge 3: Manpower Diversion

In a large data center, new equipment is provisioned, existing devices are repaired, and outdated equipment is pulled from service on a regular basis. Within this world of continual change, IT managers are likely burdened with any number of requests for accurate counts of the equipment, including annual inventories, security audits, tangible asset appraisals for corporate valuation, end-of-lease equipment collection reports, retired asset counts, and compliance mandates concerning taxation, regulatory, or accounting governance.

While the hunt-and-gather data collection tools, like RFID and bar codes, produce data that is batch integrated with back office systems, the inventory process still requires

a significant time investment from staff members. Racks need to be unlocked. Doors need to be opened. Hand held collection devices need to be engaged. All of these manual door-pull approaches require technicians to physically open an equipment rack door or enter a room to collect asset data.

What's more, due to security issues and access control hierarchies, asset inventories are typically conducted by highly skilled and highly paid members of the IT team, including data center managers, architects, and storage administrators. Several times a year, a data center's key personnel are diverted from the critical day-to-day functions, such as application provisioning and maintenance, to perform device audits that can take weeks to perform. Job satisfaction and employee retention can be adversely impacted by these time consuming and pressure-filled manual audits.

Solution — Fully Automated Asset Tracking

Automated asset-tracking systems change the entire asset inventory process from one of excessive manhours to a streamlined process that pre-populates reports with the data that audits require. Automated asset tracking systems free IT personnel from the drudgery of scanning assets throughout the year and keep them focused on strategic projects.

Challenge 4: Unplanned Downtime Provisioning

New applications and maintaining existing hardware share one common objective: they need to be accomplished while ensuring minimum disruption to enterprise operations. Any unscheduled maintenance or downtime only complicates matters. Resolving hardware failure can be complicated by the inability of service personnel to quickly locate underperforming equipment and replace it in a timely fashion. This find-and-fix problem is often compounded by the

inaccuracy of data in a change control system. Even assuming an accuracy rate as high as 97 percent, the number of incorrectly documented assets becomes unmanageable quickly.

Solution — Pro-Active Device Maintenance

A sophisticated asset-tracking system not only tackles device management, but also extends monitoring capabilities, including early-warning notifications. This proactive functionality significantly reduces the downside of downtime.

Challenge 5: Asset Detection

Escape The chances of misplacing and misdocumenting assets are pervasive. Older equipment is frequently pulled in exchange for higher-capacity devices. In some cases, serviceable surplus assets sit in storage while virtualization strategies mature. Or perhaps they are returned, removed, or relocated by well-meaning and overworked administrators. In every case, these devices may escape the detection of manual inventory procedures and turn up missing on routine audits, which throws the IT organization into panic mode if any unsecured personal data was onboard.

Even with seemingly airtight controls, equipment that is removed or relocated without the proper documentation may be seen as misplaced or stolen when an annual inventory is conducted. In today's environment, even a single server pulled for maintenance without universally available change management details can have serious repercussions.

Solution — Airtight Asset Discovery

An automated wire-free asset tracking system mitigates this risk by feeding real-time asset location data into data center automation, inventory management, and financial accounting systems. This optimizes change management programs and provides a redundant audit trail for an organization's activities.

Challenge 6: Power and Energy Fluctuations

Advanced planning tools are now available to assist data center personnel as they administer moves, adds, and changes to data center assets. With these upgrades, managers can specify the types of equipment that should populate a rack based on criteria such as power availability, space availability, heat, and weight loads.

Since data centers are under pressure to reduce their power consumption and heat output. But real-time energy data is often linked to manually collected asset data. Incorrect assumptions about which assets are in which racks can lead to inaccurate planning. Also, network discovery applications are often used to locate assets, but they do not provide rack-level granularity. Further, they are rendered useless when servers are powered off or are off-network for maintenance.

Compounding the problem are the devices themselves. As servers have become more powerful, their heat output and cooling requirements have risen dramatically. Blade architecture saves space but draws more power to a concentrated area of a rack. Virtualization schemes result in formerly active servers being powered down to conserve energy, causing them to disappear from network discovery applications. The criteria used to populate data center racks and provide safe backup power, while conserving energy, leads to a virtual juggling act where servers are relocated to accommodate new systems.

Solution — Marrying Asset Data to Planning Data

An automated asset tracking system can help by marrying the actual asset data to planning data for greater control over the environment, including temperature and humidity. This level of real-time awareness boosts the value of data center modeling software and the potential contribution of any enterprise network power strategy to energy conservation efforts.

A Bullet-Proof Solution: Continuous and Automated Asset Tracking

To meet the demand for great IT device inventory control, RF Code provides open, secure wire-free environmental and power monitoring and real-time IT asset tracking solutions that reduce the time and cost of discovering, tracking, and monitoring IT assets and the environments in which they're located. These solutions are easily configured to meet the exact nature of a company's most critical asset challenge.

Used by F100 companies, large governmental agencies, leading healthcare institutions, among others, RF Code's offerings are the market's most affordable, easiest to deploy solutions. They easily integrate into a customer's existing technology infrastructure, enabling data centers, IT, facilities, and building professionals, to cost-effectively leverage the information RF Code captures. Investments in this technology are typically recouped within one year.

Based on award-winning active RFID technology, solutions consist of asset tags and environmental sensors, active readers, and software that manages data tracking and monitoring. Leading strategic technology partners, including IBM, HP, and Microsoft, use RF Code to enhance their own offerings.

About RF Code

Founded in 1997, RF Code is based in Austin, Texas, with offices and partners around the world. Our automated, real-time asset management and environmental monitoring software platform eliminates the need for costly and error-prone manual processes. With our patented, wire-free sensors, open APIs, and real-time reporting capabilities, RF Code is easily integrated with existing IT, facilities, and business systems, creating mission critical value throughout the asset lifecycle, so you can save time and money and keep track of what really matters.