DATA CENTER RE-ARCHITECTURE WITH RFID

Radiant RFID is recognized as a thought leader for Radio Frequency Identification solutions. Radiant delivers focused and complete solutions for asset tracking, emergency management, student accountability, and event analytics.

We provide a complete solution of tags, readers and software that automatically tracks and secures assets - with very little human intervention.

A HUB certified minority business based in Austin, Texas, Radiant was founded in 2004 by partners with engineering and software backgrounds, and with a shared passion for solving problems and truly helping people.

We're focused on creating innovative solutions using RFID technology to improve security and safety, while decreasing cost. As one of the fastest growing businesses in the industry, more organizations are trusting Radiant RFID with what matters most.

MANAGING DATA CENTER ARCHITECTURE

Regulations such as Sarbanes-Oxley (1) and HIPAA (Health Information Portability and Accountability Act) mandate that all companies maintaining sensitive data such as financial and health records not only prove they own their equipment, but also have complete control over equipment content security.

At the end of each fiscal quarter, financial institutions, large scale manufacturers and content delivery network providers need to account for every server that is currently in service, has been moved, replaced, is in need of replacement and at the base lever, servers and assets that have entered and exited the server room.

An average data center for a medium to large size company contains in excess of 10,000 or more data servers. Organized in server racks spread among hundreds of rows and containing up to 20 servers per rack, accountability for each server in every rack becomes a challenge not only to perform accurately, but also in a timely manner. In addition (particularly the financial sector), companies have a need to account for and destroy hard disk drives containing confidential information when they reach the end of their lives.

Up to this point, data centers have utilized a combination of barcode and manual data entry as a means to keep track of equipment. The combination of physical labor and human error causes excessive inventory time and also widens the possibility of inventory omissions which would cost the company in terms of productivity and monetary loss.

Learn About Radiant's RFID Data Center Solution.

RFID AND THE CHALLENGES OF TECHNOLOGY IN A METAL RICH ENVIRONMENT

To address the challenge of increasing inventory accuracy and decreasing inventory time and physical labor, data center managers have turned to RFID. In addition to offering instantaneous asset identification, the biggest benefit is not requiring focused line of sight reading, of which is required to read a barcode. This reduces the amount of time spent reading each asset and allows for the RFID reader to identify more than one asset in a given instance versus "one at a time" with barcodes.

The metallic rich nature of a data center (metal server racks and cases) poses a challenge to the physics of RFID. Metal has a tendency to interfere with a RF signal. The challenge at hand is to use a RFID tag that is not only rugged enough to survive the day-in/day-out shuffle of servers from one location to another, but also provide performance that is not hindered by the presence of metal. Additionally, physical size and form factor of RFID tags have limited use in applications such as servers and small IT assets due to limited amount of tag real-estate on an already crowded sever faceplate and chassis.

Passive RFID technology has traditionally been challenged when attempting to function either in a metallic rich environment or when directly applied to metal. Active and Battery Assisted Passive (BAP) RFID and Passive RFID companies such as Xerafy have been able to provide onmetal, rugged tags that meet the challenges of today's data centers. The latter is a more viable choice considering the lack of a battery that is limited by the number of times it is interrogated by an RFID reader.

Customized to meet the standards of the financial services industry, Xerafy offers the Data Trak™. A versatile tag in a 1.5" form-factor that fits nicely on a crowded server faceplate and chassis or can be attached as a hanging tag. The Data Trak features between 5-11 feet (2-4 Meters) of read range respectively on metal and off-metal surfaces. For blade servers or assets where space to affix tags is limited, the Titanium Metal Skin, at 1.77 x 0.22 x 0.03", can fit within a 2D barcode label.

In addition, Xerafy offers the iN series of tags that may be embedded into server faceplates that overcome the immediate proximity of metal. The latter offers a completely transparent product offering at the OEM product level versus postproduction external tag application.

RE-INVENTING DATACENTER ARCHITECTURE

With the use of Xerafy's rugged on-metal RFID tags, data centers will experience the benefits of:

- Real time asset visibility
- Inventory management with increased efficiency and accuracy
- Reduced occurrence of un-accounted assets
- Increased adherence to government mandated asset accountability
- Relatively short ROI
- Ability to better manage asset service agreements by better asset maintenance tracking

Overall, data centers have seen approximately 15 times increase in inventory productivity and have reduced the labor as well as reducing time from entire inventory process by 80% to 90% by automating with RFID. This also includes goods ordering and receiving to goods removal and destruction.

The time to account for 10,000 assets in an average center includes:

- 50 Hours: Physical reading of each asset
- 16 Hours: Scan of each asset barcode
- 4 Hours: Scan of each asset RFID tag
- Overall inventory time saved with RFID: 6 Days

In addition, server disk hard drives when decommissioned are assigned a RFID tag for identification throughout the process providing real time visibility to ensure drives have gone through all processes of decommissioning and do not pose a threat of accidentally leaving the facility causing a security breach. Also, IT assets such as laptop computers, network routers and other capital equipment are utilizing Xerafy RFID tags for improved inventory and accountability.