

# INTERSECTING TRENDS FUEL Need FOR IT Asset Management



A full analysis of a car's condition evolves around several components. In comparison, most data center assessments will at best provide an incomplete picture that deteriorates and becomes obsolete even as it is being developed.

BY JAN P. WARHUUS

**D**ata center assets are valuable and critical to the organization, such that there has always been a need to properly manage, track and monitor them. By now, one would expect that this long-standing need had been addressed and that balance had been reached with best practices established in the field and with vendors providing fully refined and complete solutions.

Yet, demands for better IT Asset Management (ITAM) tools have never been more available and ITAM technologies are evolving and emerging at a higher rate than ever. The marketplace is in a burgeoning mode rather than the calm equilibrium one would have expected.

Take your car to any authorized dealership service facility and within an hour or two you have a complete overview of the total condition of the vehicle—the body, wheels, engine, brakes, “everything.” Apply this concept to the data center and the shortcomings are easily apparent. Many different technologies need to be combined to get a full picture, requiring much more time and the involvement of many people. In comparison to the automobile example, most data center assessments will at best provide an incomplete picture that deteriorates and becomes obsolete even as it is being developed.

### Software vs. Physical Hardware IT Asset Management

Recent progress has been made toward managing data center services and application over the network. As early as April 2008, Gartner reported that “IT asset management tools are showing strong market growth and are at the cusp of mainstream adoption” and more recently re-confirmed this trend. We have turned a corner whereby today it is more common than not to monitor critical systems and components around the clock.

Roughly two-thirds of the respondents to the AFCOM 2009/2010 Data Center

Trends survey, reported that they monitor activities such as network traffic, storage capacity and server utilization. Software management and performance monitoring are finally becoming established areas of need, with corresponding solutions being developed. The roll up of Avocent, a server management company, Touchpaper, an IT service management company, and LANDesk, a software management company, into Emerson; Dell's acquisition of Kace; and CA's purchase of Nimsoft are just a few indications of maturation in the field of software and IT services management and monitoring.

Another part of the complete picture is physical IT asset management (physical ITAM). Physical ITAM is concerned with knowing the number and type of assets in the data center(s) and their location, with a high degree of accuracy over time. This includes the ability to identify the asset at any time and to verify the accuracy of the collected information in a timely and cost efficient fashion through physical inventory counts and audits. Over the years, physical ITAM has received much less recent attention than management of data center services and applications over the network. However, this situation is changing. The field is fueled by vendors emerging with new technologies focused on addressing physical ITAM management challenges.

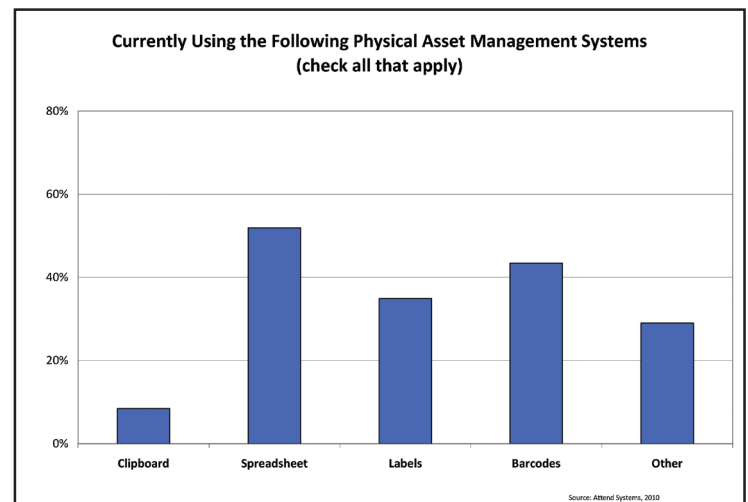
### Current State of Physical IT Asset Management

Today, many data center managers are doing their best to maintain a set of spreadsheets or “homegrown” systems built around readily available database tools. In a fall 2010 survey of 109 Data Center World attendees, less than 30% were using tools other

than simple combinations of notes, labels, barcodes and spreadsheets. Of the 30% using other measures, most were “home-grown” database tools. An East Coast data center manager at a higher education institution described it this way: “We maintain three spreadsheets and have overloaded our homegrown MySQL-based ticketing systems with hardware data and location information. It worked in the past but it can't keep up.” These types of physical asset management tools all require a high level of human interaction and discipline, which over time affects the cost and accuracy of the system.

A strong indication that the current situation is unsustainable is the surprisingly high number of data center professionals searching for alternative solutions. Fifty percent of the same survey respondents answered, “Yes” to the question, “Are you currently looking at asset management systems?” In addition, nearly two-thirds have already evaluated physical asset management systems, and more than one-third have done so two or more times within the past 24 months.

This data shows that the majority of data center managers recognize that their current physical management systems are inhibiting them from reaching the performance levels that they need. They are now reevaluating and looking for other



solutions. This observation also aligns with Gartner's recent observation that "more companies are implementing data-center-focused ITAM initiatives."

### **Physical IT Asset Management in the Data Center is Emerging – Why Now?**

Three intersecting trends are creating a situation causing reaction among data center managers. First, data center performance has transformed such that it no longer is measured solely on uptime. Today's requests for reliable, secure, timely, and accurate asset information are coming from many fronts: Legal/Regulatory Compliance, Finance, Contract Management, Information Security, Operations/HR and others are stakeholders, and they all have unique demands to which the data center manager must respond.

Second, data centers have become more complex and harder to manage. This key trend has been confirmed year-after-year by Symantec, most recently through their 2010 State of the Data Center survey of 1,780 data center managers. The upsurge in complexity is due to a combination of increases in the number of applications and locations, increased service levels, and increases in the rate of changes, initiatives and growth. For example, Symantec reports that 42% of their respondents expect to make "significant" changes in 2010 alone, while managing an average of six data center locations; and AFCOM recently found that 60% of their respondents expect to require additional data center space within five years, of which 36% plan to utilize collocation or managed hosting to meet their increased space requirements.

Third, due to tight staffing situations (created by both budget challenges and applicant qualification issues), it is particularly challenging to match these increases in demands, complexity and changes, with the right employees and skills. It is more important than ever that skills and resources in short supply are utilized in the best possible way.

As these three trends intersect and the pressures build, the cost of inadequate or labor intensive physical asset management is amplified. When manpower is redirected and expended to account for, recover or find a physical asset, the opportunity cost and lost productivity is much more readily

apparent today than earlier and forces data center management to look critically at their current processes and formulate requirements for new and better solutions.

### **Physical IT Asset Management and Real-World Opportunity Costs**

Consider the following real life scenarios of the complexities, physical asset management challenges and types of opportunity costs that data center managers are facing.

A leading Mid-West specialty freighter and data center migration company arrives on an early Saturday morning at a large US financial institution's data center facility, ready to perform a time-sensitive move of a few racks worth of critical equipment to a new facility across the ocean. The specialty freighter was required to have the equipment production-ready in the new overseas facility within 36 hours of departure, and no later than noon the following Tuesday. By Sunday at noon, not a single piece of equipment had been moved—the financial institution's data center staff was not able to locate the assets within their 800,000 sq. ft. facility. In this situation, the opportunity cost of the expensive, short-supply data center professionals who are working overtime locating assets is noteworthy, although probably insignificant compared to the overall business cost of not having the critical IT services available to the organization as planned.

Even without the need to relocate equipment, not knowing where assets are located creates huge challenges related to compliance, audits and problems with security and accountability. It is not possible to respond effectively and efficiently to audit or compliance requests or other inquiries if effective and efficient tools are not in place to collect quality data. A data center manager in a 100,000+ employee federal bureau sums up the security and accountability concerns with this remark: "Because of our operation, we have data centers with sensitive data in nearly all states. The #1 thing that keeps me up at night is the thought of losing a machine and not be able to account for how that happened."

In planning a project at a customer site, a leading East Coast network infrastructure solutions provider did an audit of the customer's data center. The first task was to simply verify the inventory of 600

assets reported by the customer. As it turned out, the data center actually housed 725 assets. Further investigation showed that some assets had not been transmitting any useful data over the network for eight years. During this non-productive period, these servers were likely to have consumed energy up to two times the cost of the server itself. Moreover, server power consumption gets magnified at the data center level. Intel estimates that one watt saved at the server can save 2.8 watts at the data center level, with cooling adding most of the aggregate power use. To make matters worse, this is not solely a matter of power cost. Over this period, the combined facility capital and operational cost and expense is up to eight times the cost of the server itself. Although 20% "ghost" servers in this example may seem relatively high, it is not uncommon. In one survey of 100 IT professionals, 72% of the respondents estimated that 15% or more of their servers run 24/7 without being actively used on a daily basis. In another same-sized survey of data center professionals, 90% reported to have 1% or more "ghost" servers and 5% reported that they believed that 15-20% of their servers were unproductive "ghost" servers. In an informal small-scale survey by the Altimeter Group, Federal, State, and Local government CIOs, CTOs and deputies were asked, "How many servers are you using?" None could give an exact answer, some gave a range, and most said that they could get back with an answer, but needed roughly a week to come up with the number.

A California-based migration company describes their typical data center migration approach this way: "If they have very good records of what they have, say a set of spreadsheets that are 80% accurate, we take that and go out, update it, and add location information. Typically the records are not that good and we spend days and sometimes weeks before the move, finding out what they've got, where it is, where it is going." In planning for a recent move involving a complete relocation of a customer's data center, the onsite records were sampled against the actual data center and found to be inadequate as a starting point. "They had five spreadsheets—four for different purposes and departments and a master. The master was supposed to have all the info but that just wasn't really the case." So before the move, the migra-

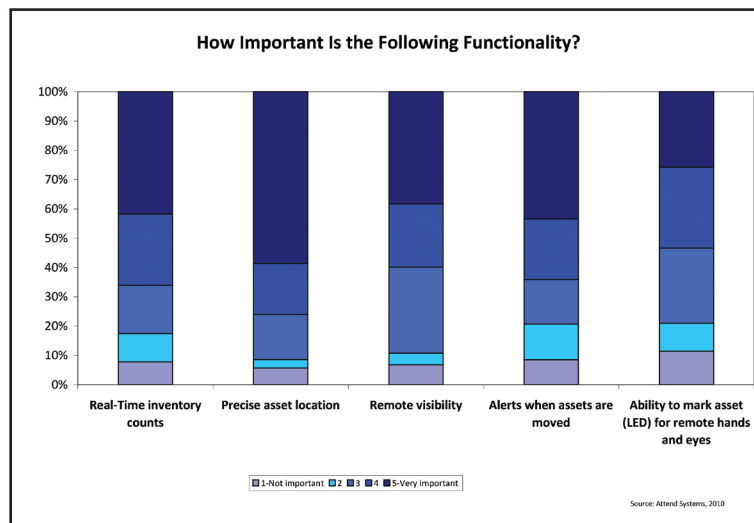
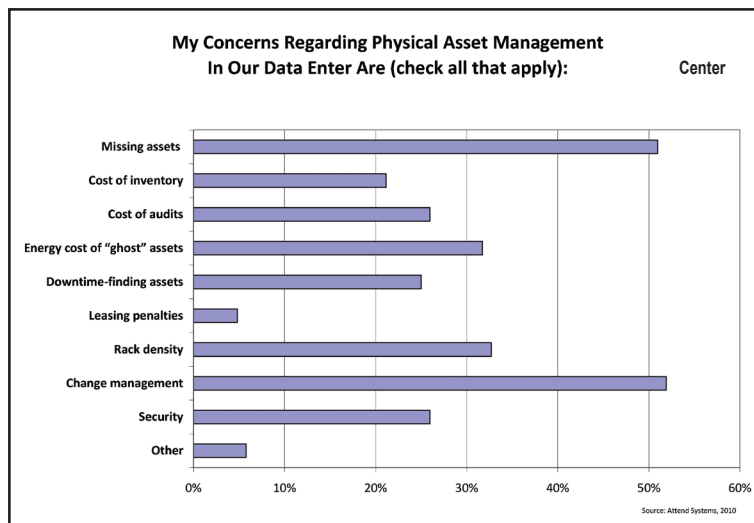
tion company's team spent a week in the data center, doing a full physical inventory and accurate location audit from scratch. With that information in hand, they sat down with the customer to plan out cabling, networking and optimal new location for the assets in the new facility. In all, two weeks passed from the completion of the audit to the day of the actual move. Within this short period of time, so many assets had been moved within the old facility that the relocation of the data center had to be delayed again.

Using manual processes to record inventory and location information is not only a costly and error-prone methodology as this case illustrates, it is also problematic because of the static nature of the data and the speed by which it becomes outdated. Studies suggest that on average 10% of data center assets are moved around every year.

In addition, with three- to five-year lease or life spans, at least 20% of the assets are replaced every year. In this case, a relocation project was adversely affected by the flux state of the data center. However, assets need to be touched from time to time during operations as well, and service uptime is affected if this cannot happen quickly. 1740 data center managers recently ranked "System Failure" as the leading cause of downtime, while 42% of 301 IT decision makers surveyed by Quocirca/nlyte reported that it could take them a day or longer to find a server that had gone down.

### What concerns do data center managers express, and how do they think about addressing them?

A Fall 2010 survey of 109 Data Center World attendees and their physical asset management concerns showed interesting results. Their concerns fall into three buckets. First, more than half of all respondents share concerns regarding assets going missing and keeping track



of changes. This high level of agreement aligns well with the prior studies and cases discussed above. Second, roughly 25% share other concerns ranging from extra costs to performance measures. In the third bucket of minor issues, few felt they had concerns not captured by the questionnaire. Most apparent, in an environment of increased demand, change and complexity, data center managers are clearly concerned about the challenges involved in keeping track of their assets as well as keeping up with the changes taking place.

In the same survey, the respondents were asked to rank the importance of possible key product features, addressing the types of concerns in question. 76% of the respondents rated "precise asset location" functionality high and roughly two-thirds rated "real-time inventory counts" high in terms of importance (a "4" or "5" score on a 5 step scale). This result indicates that that data center managers believe that

dynamic, real-time physical monitoring and notifications will allow them to curb costs, effectively manage a complex and changing environment, and maintain a high level of security and performance.

### Conclusion

Data center managers need tools that provide precise, real-time asset management data rather than static, inaccurate location and inventory information. Knowing exactly where assets are in real-time ensures that equipment will not go missing and that staff can effectively manage constant change, monitor rack density and find "ghost" servers.

The primary goal for physical data center asset management solutions should be to move from providing static batch-type data to real-time data across multiple locations; to move from approximate, inaccurate location information to precise location information; and to move from labor

intensive, error-prone information gathering to automated gathering of information with a minimum of human interaction.

Vendors are working on addressing these critical field requirements. The emerging technologies range in price, sophistication and stage of development and include technologies such as combined infrared and active RFID, 1-wire/microLAN technology (also known for environmental monitoring), enhanced CCTV capabilities, intelligent racks, enhanced rack power distribution units, etc. Highly capable solutions are available today and more will follow in the future. [D C M](#)

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