SEE THE POWER—ACHIEVE PLUG LOAD VISIBILITY WITH ENTERPRISE ENERGY MANAGEMENT

Introduction

Building Management Systems have conducted most enterprise energy management over the past several decades. But just as technological advances have made the physical office worker more virtual, physical boundaries like buildings and campus locations are giving way to borderless IT networks and a broader community of business devices. This can be a challenge for Facilities departments tasked with managing and reducing the rising costs and demand for energy across the enterprise. After all, if you can't see the energy being consumed by various IT devices throughout the enterprise, how can you lower it?

Power per square foot or power per user calculations have set the standard for determining how much energy a building's IT equipment consumes. But what if you could see actual energy consumption, utilization, cost and carbon emissions for every device that is plugged into your network? New solutions for enterprise energy management are making this possible, and delivering dramatic cost savings—up to 60 percent in some cases.

As energy management becomes IP-based, you gain a detailed view of energy consumption for all your network-connected IT devices, even HVAC, lighting, video and access control systems, and more. An enterprise energy management solution can benefit Facilities by providing detailed visibility into plug load, along with automated power management for data centers, campus or distributed office environments, extending into facilities. Subsequently, organizations can use the solution to automatically manage and reduce power consumption for these devices and systems—saving time and money and helping meet sustainability requirements.

How Does it Work?

For years, solutions to manage energy consumption and utilization at the IT device level have been cost prohibitive, inadequate and difficult to implement. Today this is changing for the better. With technology available now, enterprises can transition their energy management approach from "always on" to "available when needed" without impeding employee or business productivity or service level agreements (SLAs). The results of this shift include significant cost savings, reductions in carbon emissions, and increased visibility into energy consumption that can aid capacity planning, policy decisions and more.

New enterprise energy management solutions are providing a consolidated energy utilization dashboard for every network-connected device in the enterprise (both IP- and non-IP-enabled). This delivers unprecedented visibility into the energy consumption and utilization of every device, system and facilities asset connected to the network. It also gives organizations the ability to actively monitor and manage power for cost savings without slowing productivity.

The JouleX Energy Manager (JEM) reduces energy costs by monitoring, analyzing and controlling energy usage of all network-connected devices and systems—no client-side agents or hardware meters required. JEM acts as a virtual smart meter, providing a global view of energy consumption for a wide range of devices, from desktops and laptops, wireless access points, Voice Over IP Phones, servers, network routers and switches, and much more.

The Four Functions of Enterprise Energy Management

The JouleX Energy Manager gives organizations the ability to monitor, analyze and control power across the enterprise through policy-based energy optimization. Four technology functions enable the monitor—analyze—control process, including:

- **Discovery and measurement**—finds all the network-connected devices, systems and facilities assets in the enterprise.
- **Assessment and simulation**—analyzes energy usage, temperature, carbon emissions, utilization and costs by device, location, division, business unit, department, cost center and more; simulates policy scenarios to determine highest cost savings and preserve productivity.
- **Policy and control**—executes automated energy management policies or alerts by device, time, location or event, resulting in energy that follows the productive user and cost savings.
- **Reporting**—delivers comprehensive reporting about the way energy is used and cost/carbon savings for individual offices or the entire enterprise.

Measure Energy Consumption and Utilization of ALL network-connected devices and systems:

- Distributed Office Networks - PCs, Macs, VoIP phones, access points, copiers, printers, etc.
- Data Centers – Physical and Virtual Servers, routers, switches, storage, etc.
- Facilities – HVAC, lighting, PDU, CRACs, etc.

Powerful Energy Intelligence:

- Energy Cost
- Energy Usage
- Energy Reduction
- Carbon Emissions
- Date/Time
- Location
- Cost Center

- **Event Based Policy**
- **Rule Based Policy**
- **Energy Use Simulation**
- **ROI Modeling**
- **Device Utilization**
- **Load Adaptive™ Computing**

JEM leverages a unique agentless discovery method to automatically find all devices in the enterprise. After discovery, JEM continually monitors and reports energy usage and utilization. Based on the energy metrics and intelligence collected, organizations use JEM to develop policies and rules to optimize energy usage and reduce costs on a massive scale. A typical organization can achieve energy savings of 30-60 percent annually. JEM also provides robust reporting to support corporate sustainability initiatives and show incremental improvements over time.

JEM's energy management policies can be implemented by device type, device location, priority of the device, and other parameters. In addition, JEM enables Load Adaptive™ Computing to allocate the right amount of power only to those devices that need to perform productive work; minimizing the amount of energy supplied when idle or operating at less than full capacity.

Using the JouleX Energy Manager to Achieve Energy Savings

Enterprises can use JEM to create policies that automatically and remotely manage power for enterprise devices—powering systems down when idle/not needed. When energy follows productive users, enforced by automated policies, capacity aligns with demand across the enterprise and savings are achieved. This shifts thinking and practice from "powered on by default" to "available when needed."

Organizations that have already adopted an enterprise energy management solution are making some interesting discoveries about employee work habits and the power drawn by various office equipment. For example, one company learned that its video teleconferencing system was drawing as much power overnight as an entire floor's worth of devices and equipment. By automating a time-based policy to power down this system during idle hours, the company achieved significant savings immediately following installation.

Another organization learned that many of its supposedly mobile computing devices never left the building. Most of the time, these devices were also left on overnight when not in use. Automated policies that power down idle, unproductive office equipment can save 30-60 percent in energy costs. An ideal solution will provide opt-in/opt-out policies for end users to preserve productivity.

Event-based policies designed to support energy following the productive user can power up/down campus devices when employees enter and exit a facility. Time-based policies power down desktops and laptops, monitors, access points, printers, copiers and lights after hours and on weekends.

Teaming with IT to Reduce Energy Consumption

When it comes to implementing enterprise energy management, the Facilities and IT groups within an organization must collaborate. Both departments strive to deliver a reliable and stable service to the rest of the enterprise, but the energy concerns of each department vary slightly. Facilities strives for efficiency, keeping costs down while meeting the company's power needs. The IT department supports and extends computing capabilities for the company while also maintaining SLAs. In general, Facilities values efficiency and IT values availability. But with JEM, these focus areas are not mutually exclusive.

JEM is implemented and managed in the IT department. Its policies are designed to promote availability and SLAs while maximizing energy efficiency. As a network-connected energy management platform, JEM is an IT product. But the budget relief it provides goes directly to the Facilities bottom line in terms of energy savings and reduced carbon emissions.

The most successful enterprise energy management implementations receive support from the Facilities and IT departments—regardless of which one initiates the project. If the initiative begins with Facilities, it's important

to make a business case for visibility into the energy consumption and utilization of IT devices with a stated goal for cost reduction. Most importantly, IT should be assured that availability, productivity and SLAs will be preserved.

In addition to energy and cost savings, JEM can provide tangible benefits for the IT department, including sustainable procurement and the identification of virtualization candidates. JEM helps organizations see beyond the PDU and rack to the physical server to allocate energy across virtual machines and applications. It can also be used to identify prime candidates for virtualization and pinpoint under-utilized servers and low-density servers consuming the most energy.

One of the most important criteria for IT departments is JEM's agentless approach. With no agents to install or maintain, JEM is simple to deploy and manage and delivers results in hours or days, not weeks and months.

Let Us Help

JouleX can provide an energy assessment, help you define a business case, broker internal discussions between facilities and IT departments within an organization or perform a proof-of-concept that will reveal energy savings opportunities. To learn more about the JouleX Energy Manager (JEM) and your energy savings potential, please visit www.joulex.net, call +1-404-567-4445 or send an email to info@joulex.net.

About JouleX

JouleX is a leading innovator in sustainable energy management systems for the enterprise. Its flagship solution, the JouleX Energy Manager (JEM), provides the Global 2000 and government agencies with the ability to monitor, analyze, and control energy usage for all network-connected devices and systems across the enterprise, including in distributed offices, data centers and facilities. Importantly, JEM is the first network-based energy management system that works *without* the use of software agents, dramatically reducing installation time and removing the maintenance burden associated with similar technologies. JEM decreases energy costs by up to 60 percent while ensuring availability and provides robust reporting that enables compliance with emerging carbon monitoring requirements.

JouleX was founded in 2009 and since has been distinguished with recent awards and accolades including Computerworld Honors Laureate, Gartner Cool Vendor in Green IT and Sustainability, GE Ecomagination Award, BT Green Economy Success for Future Award and Clean Tech Media Award. The company is headquartered in Atlanta with worldwide offices located in Shanghai, Tokyo, Paris, Munich and Kassel, Germany, and throughout the United States. For more information, please visit www.joulex.net, call +1-404-567-4445 or send an email to info@joulex.net.