

Thousands of Products,  
Hundreds of Dealers,  
**Much More!**

[Processor.com Home](#)

[Search Past Articles](#)

[All Tables Of Contents](#)

[Cover Focus Articles](#)

[Tech & Trends](#)

[New Products](#)

[Product Releases](#)

[MarketPlace News](#)

[Factoids](#)

[Opinions](#)

[Products At Work](#)

[MarketWatch](#)

[Book Reviews](#)

[What's Next](#)

[What's Happening](#)

[Two Terms](#)

[Three Questions](#)

[Upcoming IT Events](#)

[The Latest Versions](#)

[Six Quick Tips](#)

[Processor.com](#)

[Product MarketPlace](#)

[Product Showcase](#)

[This Week's Issue](#)

## Cover Focus Articles

 [Email This](#)  
 [Print This](#)

### General Information

September 22, 2006 • Vol.28 Issue 38

Page(s) 9 in print issue

# Your SME's Power Requirements

## Don't Underestimate The Need For A Flexible Power Infrastructure



Power doesn't come cheap, nor does it come easy. Rising utility costs continue to ramp up data centers' total cost of ownership, while increasing compute densities force an ever-escalating draw on that expensive power.

Those are problems even the most adequately prepared data centers constantly face, but older data centers encounter even more challenging issues. When those spaces reach full capacity, businesses are often forced to overhaul existing equipment or replace it completely, and these expensive endeavors can occur

frequently if previous power assessments proved inadequate.

As such, the process of power assessment is more integral to the efficient, long-time operation of data centers than ever before. No longer is it necessarily feasible to simply add circuits whenever more power is desired.

"Assessing the power needs is absolutely critical to ensure a highly available data center," says Dave Rounds, COO of Uptime. "There are a few elements to consider when assessing power needs: source, consumption, distribution, and—just as important—cooling of the data center. These elements in effect make up the foundation of a data center, just as a foundation does for a house."

### ■ Know Thy Equipment

The first step in assessing power is determining the actual, immediate requirements for power consumption, based on the manufacturers' specifications of the equipment that's installed or going to be installed. According to Rounds, this is the most difficult step because it requires the data center planner to have a detailed understanding of the company's future growth plans, including business plans for the next one, three, and five years. With that information at hand, it's easier to gauge the power required for the space.

"Is the equipment old or new, big or small, and how full will the rackmount enclosure be loaded?" asks Kevin Macomber, vice president of business and product development for Aphel Technologies. "How is this being done today and how will it be done in 18 months? We regularly find that customers do not even have a basic understanding of this. Surprisingly, this basic information tells a power expert a great deal of the type of power required, as well as the number and type of outlets that may be required."

Macomber relates a recent experience in which a customer asked for a 20A/120V power strip with 24 outlets. When Macomber questioned the customer about the request, he discovered that the customer's servers were load sharing on a similar strip—both power supplies were consuming an equal amount of power simultaneously. As a result, the customer was not only

violating code by using above 80% of the rated strip capacity, but if the power had been lost, the load would have been dropped.

"Servers that have multiple power supplies will increase their current draw on one supply when another fails," says Joe Skorjanec, sales manager with Pulizzi Engineering. "So any circuit can see a large spike in current draw if another circuit or power supply fails. Properly reviewing failure scenarios is very important."

### ■ Efficient Estimation

Many power planners determine the maximum equipment load for all of the data center's potential equipment—that is, when all of the server and hard drive slots are filled—and then add a certain percentage on top of that maximum load. Rounds, for example, adds at least 30% to account for future growth but can trim that number to 20% if he has the detailed information he needs.

According to Macomber, the method of estimating power per square foot is now irrelevant because the different load types in enclosures lead to many variables. With that said, Aphel Technologies has a rule of thumb that says wattage will be 200 to 300 watts per U (1.75 inches in an enclosure), depending on the equipment type. Although determining the power load may not be an exact science, Macomber warns that companies should be careful to accept assessments from just anyone.

"We regularly find ourselves working with consultants who do not have a thorough understanding of the equipment or how it works, from a power perspective," he says. "The assessment can also be compromised by power strip equipment companies who are stronger in marketing than technical know-how."

### ■ The Power Of Power

Plenty of factors tie in to the power equation, such that assessment becomes a primary tool for ensuring the long-term reliability of the data center. In fact, Kevin McCalla, a director with Liebert Power Solutions, says that unpredictable growth; consolidation of critical facilities; convergence of voice, video, and data; enterprise-wide standardization; and other factors all drive the need to manage uncertainty, density, and capacity.

"Today, the entire network is mission-critical," McCalla says. "This is driving downtime costs higher, while the resources you have available for critical system management are shrinking. Whether you are implementing VoIP, consolidating servers, or . . . adding capacity, the reliability and flexibility of your power infrastructure will determine how well you can control costs and system availability as you manage change." ■

*by Christian Perry*

## Sponsored Links

### **Aphel Technologies rPower Remote Power Management**

Provides remote monitoring for 20-60 amp (125-208 volt) rackmount enclosure power solutions

[www.Processor.com/Aphel](http://www.Processor.com/Aphel)

### **Baytech**

Offers power management solutions for any data center need

[www.Processor.com/Baytech3](http://www.Processor.com/Baytech3)

### **CyberSwitching DUALCOM PLUS featuring Cyber Breaker**

Individual current monitoring lets you have supplemental circuit breaker protection on an individual outlet basis

[www.Processor.com/CyberSwitching](http://www.Processor.com/CyberSwitching)

### **Pulizzi Engineering VPC1917 Vertical Power Controllers**

IP addressable outlet control; turn power on/off to individual outlets; schedule automatic on/off events

[www.Processor.com/VPC1917](http://www.Processor.com/VPC1917)

### **Server Technology Enterprise View**

Gives users the ability to manage multiple Sentry Cabinet Power Distribution Units in multiple data centers all at once

[www.Processor.com/ServerTechnology9](http://www.Processor.com/ServerTechnology9)

### **Western Telematic NetReach NBB-1600 Series**

Control power on any AC-powered device via Web browser, Telnet, modem, or local terminal

[www.Processor.com/NBB-1600](http://www.Processor.com/NBB-1600)

## **Planning For The Future**

An effective data center power assessment can't be accomplished without estimating future power requirements. Too often, companies assume that their current power infrastructure will easily support future additions, but today's rapidly changing equipment can easily dispel that notion.

"One customer wanted to add to the existing power source to install new equipment," Uptime's Dave Rounds says. "Even though an electrical panel with enough capacity was present, the physical cables that were being used [for] the breaker box were not of sufficient type. The result was a delay of two weeks, complete loss of power to the data center for 12 hours, and a budget overage of 30%."

Rounds says it's essential for companies to ensure that higher-level, "in-the-trenches" IT personnel are always in tune with business plans and that they're trained in current industry and IT trends. Also, he says it's similarly important for end users to have a forum for expressing computing-related needs and desires to IT. These steps will help IT accurately gauge the future outlook of the data center, which in turn will allow them to outlay an electrical infrastructure that can handle future expansion.

"Pick the most you will think the data center's power requirements would ever be and then add some," Rounds says. "It is less expensive to do it once than to redo it."

Share This Article:



---

[Home](#) [Copyright & Legal Notice](#) [Privacy Policy](#) [Site Map](#) [Contact Us](#)

Search results delivered by the Troika® system.

Copyright © by Sandhills Publishing Company 2007. All rights reserved.