

# How do I leverage cabinet PDU information to help plan for growth?

APPLICATION NOTE SPM-001 | Feb 2014

**Sentry Power Manager (SPM) provides critical information for growth planning. Learn how to use SPM with intelligent PDUs to ensure that your data center is ready for increased capacity.**

## Typical Application

I run a data center with plans for rapid growth over the next 2-3 years. Currently, I have room to grow in terms of power & cooling infrastructure, floor space, and cabinet RU space. In order to be sure that I have sufficient warning of impending capacity bottlenecks, I need a system that is cost effective and easy to deploy which will provide power and environmental information.

## Our Solution

With rackable IT equipment being responsible for half of data center power usage, intelligent PDUs have become standard fare in almost all data center deployments for the purpose of measuring power usage. Sentry Power Manager is an ideal, cost-effective way to aggregate all of those measurement points for purposes of maximizing uptime, improving efficiency, and analyzing capacity.

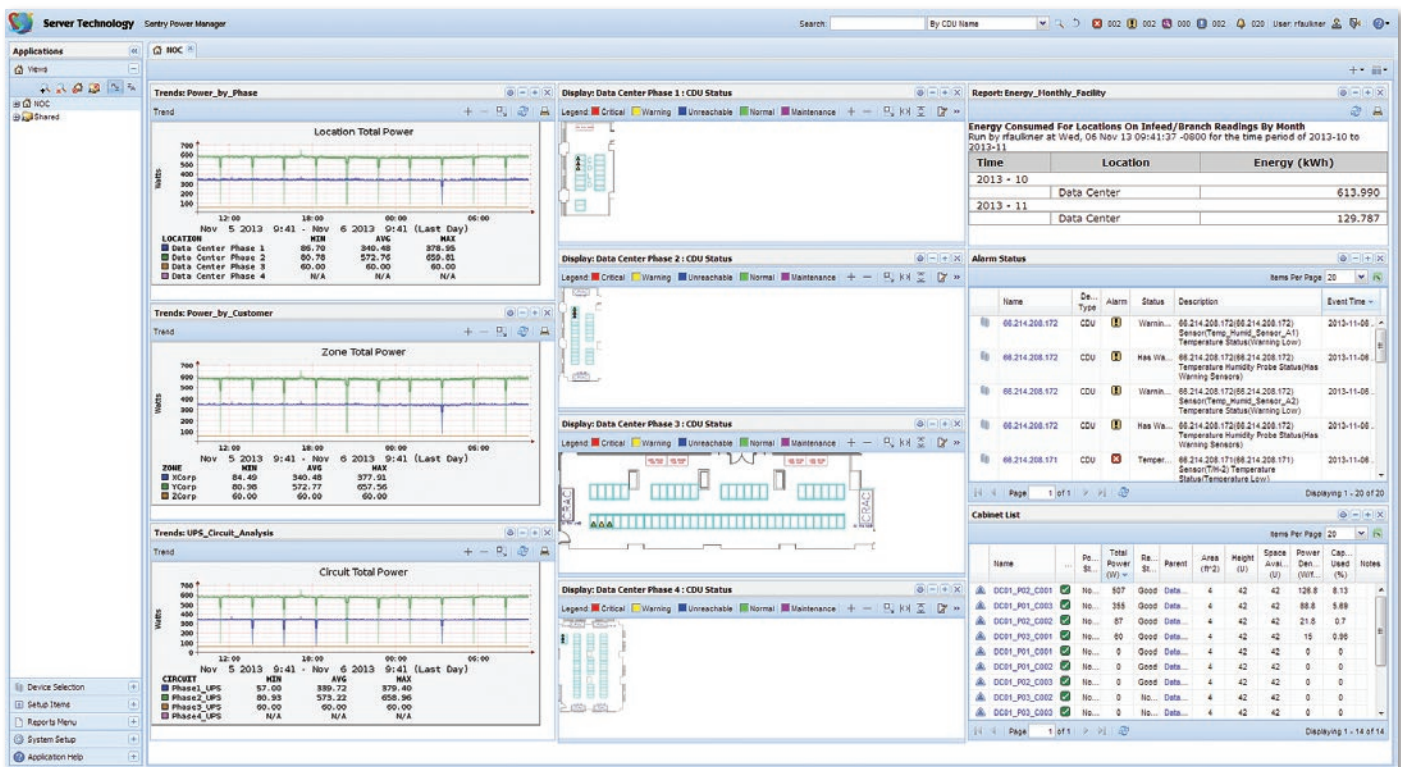


# Capacity Planning with SPM

One of the common reasons to implement an energy management system is capacity planning. Understanding not only how much power is available, but also exactly which circuits it is available on, is important for optimizing use of the data center infrastructure.

Monitoring at the cabinet PDU is the optimal place to understand the breakdown of power usage throughout the data center. Not only can one use the measurements at the cabinet for understanding the capacity overhead of the branch circuit, but properly aggregated, the amperage of all stages of distribution upstream can be estimated.

SPM provides the means to setup physical aggregation points such as locations and zones that relate to power aggregation points within your data center like RPP's and UPS's for trending analysis and threshold alerts. With features such as customizable views (see below), which allow each user to monitor live events, planning for growth becomes much easier.



## Key Intelligent PDU Benefits:

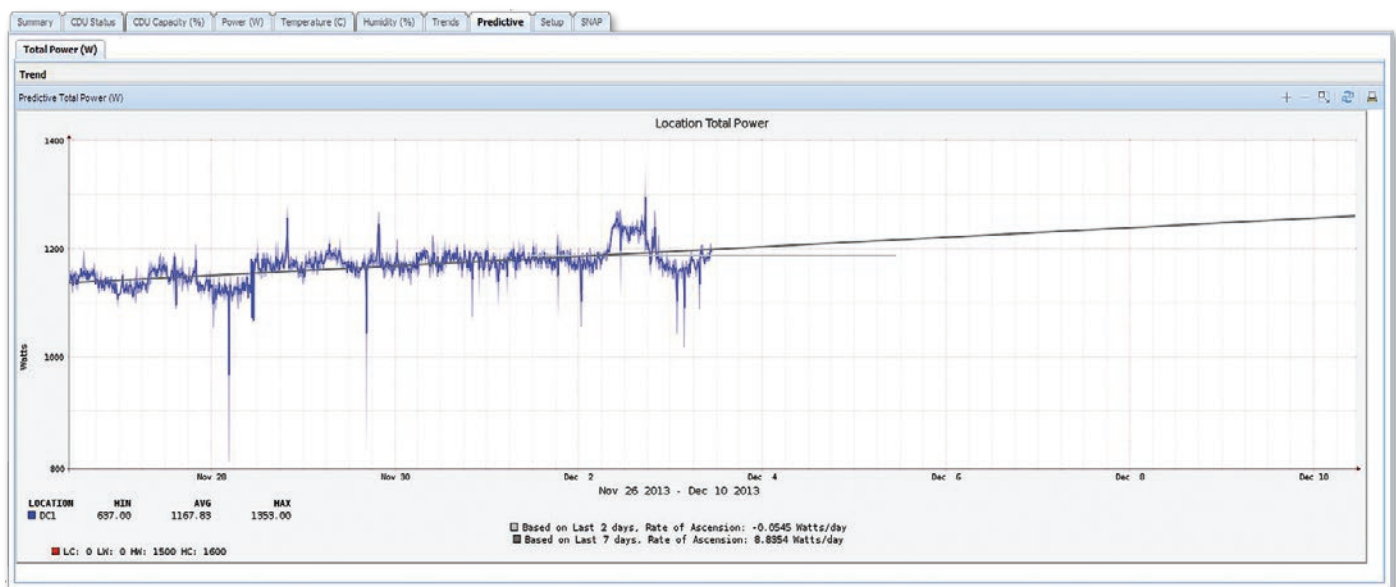
- > PIPS® and/or POPS® high-accuracy measurements of current, voltage, power, etc.
- > Environmental measurements via plug-and-play probes
- > Master-Expansion linking allows single-IP access to the cabinet pair of PDUs
- > SNMP traps and email alerts

# Predicting Power Trends with SPM

**Growth in the data center comes with a variety of challenges. Often of primary concern is the growth of power consumption as equipment and applications are increased.**

If you look at the power usage over time for the past week or month, you will often see an up and down usage trend with peaks at various times of day, week, or month. When usage gradually increases over the long term, it can be difficult to spot the growth curve by eye, which can eventually lead to a capacity pinch. Worst case, maximum power consumption is what needs to be planned for to ensure uptime.

SPM provides a trending feature that predicts, based on two separate parameters for time, what the power usage might be in the future. This allows the user the ability to check proactively when additional resources might be needed from the power system point of view as this trend predicts an estimated date and time when capacity will be exceeded. Additionally, an email notification can be set up for whenever that predictive trend points toward a future breach of the power thresholds at the cabinet, zone, or location level.



## Key SPM Benefits:

- > Mass configuration of Server Technology PDUs through secure SNAP™ feature
- > Easy to use for capacity planning and power monitoring
- > Custom Views for each user for quick access to relevant data
- > Alarm monitoring and management from the data center level down to the outlet
- > Setup cabinet-level redundancy checks
- > Identify temperature variation across the data center
- > Manage user rights to access and control equipment power
- > Convert continual data polling from all cabinets into actionable information in a variety of forms



# Cabinet Elevation with SPM

Along with power availability at the cabinet level, space availability is also a critical consideration for growth.

Physical location of equipment such as servers and switches often needs the link to which outlets are providing power to that equipment. Along with the potential need to reboot locked-up equipment, measurement of individual power supply consumption is becoming a need in many data centers.

SPM provides an easy method for specifying exactly where in a cabinet a specific piece of IT equipment is mounted. By assigning outlets from the cabinet PDU to the particular equipment, the IT manager can properly identify where the space and power availability is within each cabinet. Having this information allows for speeding up installs and simplifying new deployments. Add the high-accuracy outlet measurements of the POPS® PDU for an even more detailed picture of the devices within the cabinet.

Position	Outlet (A)	CDU Name	Cabinet Device	Device Type	Description	Sensor	Outlet (B)	CDU Name
42	X	Sentry3_520a9f	SWT-10001	Network	C7000			
34	X	X	CHS-00001	Blade Server	C7000		X	Sentry3_520a9f
33	X	X	CHS-00001	Blade Server	C7000		X	X
32	X	X	CHS-00001	Blade Server	C7000		X	X
31	X	X	CHS-00001	Blade Server	C7000		X	X
30	X	X	CHS-00001	Blade Server	C7000		X	X
29	X	X	CHS-00001	Blade Server	C7000		X	X
28	X	X	CHS-00001	Blade Server	C7000		X	X
27	X	Sentry3_520a9f	CHS-00001	Blade Server	C7000		X	Sentry3_520a9f
26	X	Sentry3_520a9f	CHS-00001	Blade Server	C7000		X	Sentry3_520a9f
25	X	Sentry3_520a9f	CHS-00001	Blade Server	C7000		X	Sentry3_520a9f
21	X	Sentry3_520a9f	SVR-12345	Server	DL585		X	Sentry3_520a9f
16	X	X	SVR-12346	Server	DL585		X	X
18	X	X	SVR-12345	Server	DL585		X	X
17	X	X	SVR-12345	Server	DL585		X	X
16	X	Sentry3_520a9f	SVR-12346	Server	DL585		X	Sentry3_520a9f
14	X	X	SVR-12344	Server	DL585		X	X
13	X	X	SVR-12344	Server	DL585		X	X
12	X	X	SVR-12344	Server	DL585		X	X
11	X	Sentry3_520a9f	SVR-12344	Server	DL585		X	Sentry3_520a9f
9	X	X	SVR-12343	Server	DL585		X	X
8	X	X	SVR-12343	Server	DL585		X	X
7	X	X	SVR-12343	Server	DL585		X	X
6	X	Sentry3_520a9f	SVR-12343	Server	DL585		X	Sentry3_520a9f
0	X	X	Sentry3_520a9f	CDU			X	X

Interested in learning more about how SPM can help you with Capacity Planning and Power Management? Visit us online and download a FREE Demo at: [www.servertech.com/products/sentry-power-manager](http://www.servertech.com/products/sentry-power-manager)



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#### HEADQUARTERS NORTH AMERICA

Server Technology  
1040 Sandhill Drive  
Reno, NV 89521  
United States  
Tel: +1.775.284.2000  
Fax: +1.775.284.2065  
sales@servertech.com  
www.servertech.com  
www.servertechblog.com

#### WESTERN EUROPE, MIDDLE EAST & AFRICA

Server Technology  
Fountain Court  
2 Victoria Square  
Victoria Street  
St. Albans, AL1 3TF  
United Kingdom  
Tel: +44 (0) 1727 884676  
Fax: +44 (0) 1727 220815  
salesint@servertech.com

#### CENTRAL EUROPE, EASTERN EUROPE & RUSSIA NIEDERLASSUNG DEUTSCHLAND

Server Technology  
42119 Wuppertal  
Germany  
Tel: +49 202 693917 x0  
Fax: +49 202 693917-10  
salesint@servertech.com

#### APAC

Server Technology  
Room 2301, 23/F, Future Plaza  
111-113 How Ming Street,  
Kwun Tong, Hong Kong  
Tel: +852 3916 2048  
Fax: +852 3916 2002  
salesint@servertech.com