

The Value of Intelligent Power Distribution Units and DCIM Software in Server Decommissioning



CHATSWORTH
PRODUCTS

As data centers managers and operators around the globe try to keep up with rising compute demand, and more server capacity is deployed, they increasingly find value in moving their servers to the cloud. The growing reality of a remotely working world has accelerated this upward trend even more.

During migration, it's common to inadvertently leave behind or keep servers that aren't in use any more, except that they continue to run, and run inefficiently in the background. These unused and underutilized servers can add millions of dollars to an energy bill and place high demand on the resources needed to support them.

You can't manage what you can't measure

This popular business adage is also true in the data center. It's impossible to eliminate waste without knowing where it's coming from.

As experts and designers of intelligent power management solutions, Chatsworth Products (CPI) recommends a two-pronged strategy that includes the integration of intelligent power distribution units (PDUs) and Data Center Infrastructure Management (DCIM) software.

By combining the two solutions, data center managers and operators can track historical consumption reports so they can compare against baseline consumption and identify candidates that should be decommissioned. Additionally, it is possible to obtain valuable, actionable power, current, environmental and security information that helps to optimize system performance and efficiency and reduce costs.

Evaluating Intelligent PDUs



Know Equipment Utilization

Monitoring of voltage, power and current down to the outlet level provides visibility into the total power consumption for each piece of IT equipment—so data center managers can see exactly from where power is being drawn.

Consider a PDU that provides:

- Input line currents
- Voltage, current, power, energy and power factor at branch circuits and individual outlets
- Kilowatt (kW) readings with a +/- 1% billing-grade accuracy
- Outlet grouping for power chargeback reports



Understand Operating Conditions of Equipment

Hot spots within cabinets are a common cause for equipment downtime. And, temperature levels within the white space have a strong correlation to overall energy consumption within the data center. Being able to measure and track inlet and outlet temperature levels at the rack level can help identify where the ghost server "lives."

Consider a PDU that provides:

- Remote temperature and humidity monitoring
- Upper and lower threshold alarms and data logging



Get Real-Time Alerts

It's important to be able to quickly see and identify an issue when it happens, especially when it comes to unused or underutilized servers.

Consider a PDU that provides:

- All PDU information in both a local display and in a user-friendly interface for remote management
- Initial IP setup and the ability to restore defaults and upgrade firmware
- Voltage and current power for input lines and breakers
- Alarm notifications



Minimize Power Consumption

Remote outlet control allows unused outlets to be turned off and to cycle power to hung equipment to better manage power at the rack level. There are several types of relays used within PDUs to control outlet state. Bi-stable latching relays recycle power to outlets, helping to maintain PDU efficiency levels. These relays do not draw power during normal operation, helping to maintain PDU efficiency levels. They also allow outlets to maintain state after a power event, while ensuring basic power distribution to an outlet is not compromised.



Ensure Enterprise Authentication and Secure Communication

It's hard to protect data from being compromised if you simply don't know where to put the protective prevention measures in place.

Consider a PDU that provides:

- Support for SNMPv1, v2 and v3 to ensure encryption of data communicated between the PDU and other applications.
- Support for HTTPs with the ability to load a custom certificate, which allows for secure communication between the PDU and a web browser.

Evaluating DCIM software

You can identify underutilized servers by monitoring power consumption trends. Although individual power use by device will vary based on workload, in general, power consumption will increase with utilization. By comparing consumption against known thresholds, you can identify servers that may be idle or underutilized.

Once intelligent PDUs that monitor power at the outlet level (device level) are in place, it's beneficial to centralize monitoring and automate reporting with a DCIM software. This is how it's possible to truly be able to decommission the costly unused and underutilized servers.



Consider a DCIM software solution that centrally manages and controls PDUs and intelligent assets, monitors overall data center health and offers:

- **Active power by month and device:** Identify spikes, prevent potential power issues and maximize uptime. Also identify power consumption by server, which helps identify under and over-utilized servers for replacement with more efficient devices or virtual servers.
- **Data charting:** By visualizing trends and occurrences, you can identify problems and optimize site capacity, utilization and security.
- **Power capacity trend and analysis:** Trending power capacity over time can help you forecast power consumption more accurately.
- **Power charge back reporting:** Control consumption expenses with DCIM software that unifies equipment data in a simple report.
- **Failover testing:** Test failover capability without having to shut down the power chain. Select a solution that proactively provides information to confirm whether or not failover capability within any cabinet is being compromised.
- **Searchable database and easy integration:** DCIM software provides excellent preconfigured dashboard and reporting tools, but access to the data that DCIM collects and stores is also important. Additional insights are possible when combining data from the facility (DCIM) with data from the network and servers or from other asset management tools.
- **Expandable with advanced features:** Basic DCIM software should provide power monitoring and management, environmental monitoring and access control by capturing data at the cabinet level. It should automate measurement, capture and store data, monitor and alarm thresholds, trend power and environmental conditions, simplify administration of user access rights, and log each access attempt. It should also provide more robust asset management, power chain and connectivity mapping and change and workflow management.

Ongoing measurement of the IT server infrastructure is a key factor to achieving IT efficiency and reducing your costs significantly, and CPI's power management and software solutions can help. Visit chatsworth.com/power to learn more.

