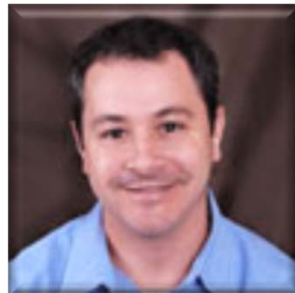


Make the Most of Your Intelligent PDU Investment

Matt Burkle, Sales Engineer of Power Solutions



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Agenda

- Growth of the Intelligent Power Distribution Unit (PDU) Market
- Why Invest in Intelligent PDU's
- Challenges in Deployment
- Solutions



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The Numbers

608 Million
Investment
in
intelligent
PDU

Fastest-
growing
segment in
the PDU
market

65% of
PDU
market by
revenue

- IHS Markit

With such significant investment, organizations need to ensure they are taking full advantage of the capabilities in order to boost their return on investment.



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Why Intelligent PDUs?

Enhance availability of IT applications by monitoring power and environmental within the cabinet

Availability



Help optimize usage of upstream electrical infrastructure by ensuring balanced loads across all circuits

Security



Reduce IT equipment energy consumption costs through visibility of equipment costs and power charge back reports

Optimization



Enhance cabinet-level security through integrated electronic locks

Reduces Costs



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Challenges

Organizing and using data available through a high number of intelligent PDUs within the data center can be complex because:

- At least two (2) PDUs in EVERY cabinet
- Too many network connections
- Data center is becoming more complex with edge and IoT
- Remote management
- Security concerns

Solution: Two-Step Approach

#1. Choose intelligent PDUs with the following critical features:



Locking outlets to prevent accidental disconnections

Integrated environmental monitoring for inlet and outlet temperature

High temperature rating to ensure accurate monitoring

Built-in administration, security, threshold, notification and logging functions



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Specific Features

All PDUs should have features such as:

- ✓ IP Consolidation to reduce networking costs
- ✓ Integrated environmental monitoring
- ✓ Integrated electronic access control to meet regulatory compliance
- ✓ Built-in administration, security, threshold, notification and logging



Solution: Two-Step Approach

#2. Centralized Data Center Infrastructure Management (DCIM) software application that will provide a single pane of view for rack and site conditions. Note: The granularity of the PDU affects the granularity of the DCIM reporting.



Must be vendor agnostic

Must have embedded databases

Must allow easy export of data with customizable reports

Must support Enterprise Authentication Services and API's

Must support auto discovery and import features

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Specific Features

Centralized DCIM software application that will collect and store data from all PDUs and provide meaningful reports and features such as:

- ✓ Cabinet load capacity reports
- ✓ Grouping of equipment to generate power charge back reports
- ✓ Redundancy monitoring reports
- ✓ Cabinet-level temperature and humidity reports
- ✓ Cabinet-level power consumption reports by timeframe



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How DCIM Visualizes PDU Data

Measures Current

Measures Active Power

Measures Average Energy

Monitors Redundant Power

Measures Environmentals



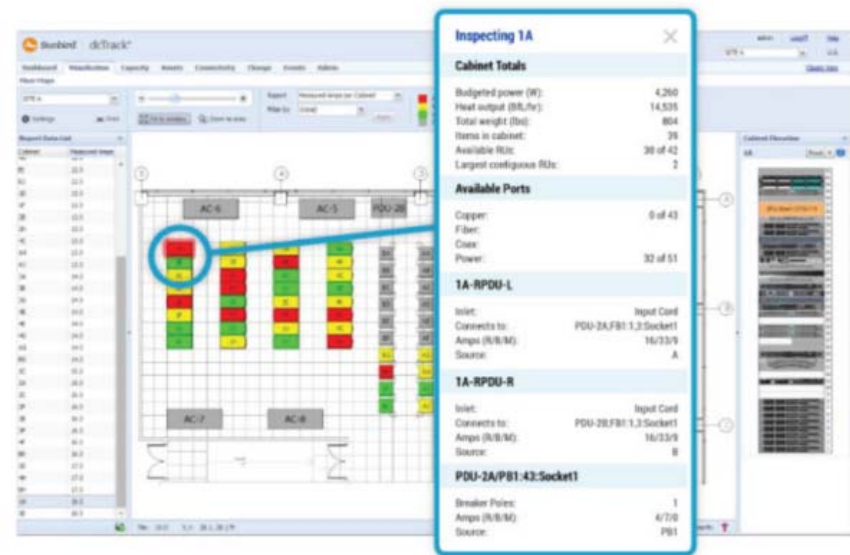
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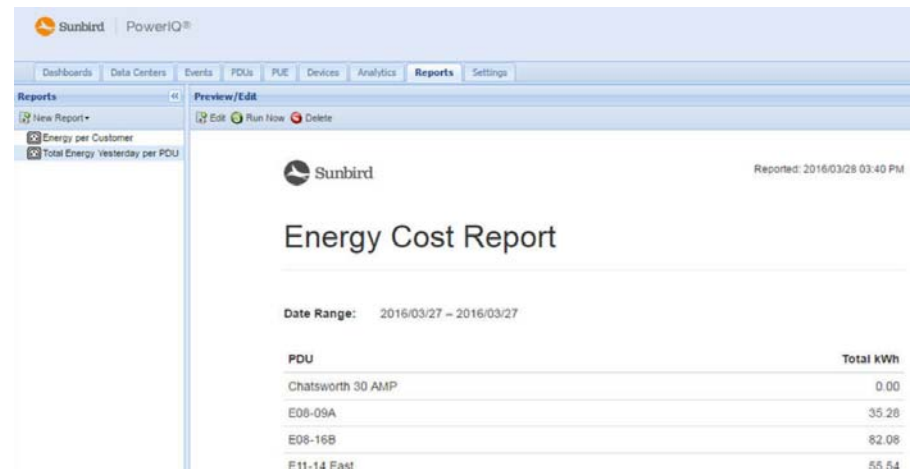
Measures Current

- Provides rack current draw in order to monitor thresholds and available capacity.
- Helps visualize available capacity



Measures Average Energy

- Roughly provides the cost to operate a rack on a kW/h basis.
- Creates power charge back reports



Sunbird PowerIQ®

Dashboards Data Centers Events PDUs PUE Devices Analytics Reports Settings

Reports Preview/Edit

New Report*
Energy per Customer
Total Energy Yesterday per PDU

Sunbird Reported: 2016/03/28 03:40 PM

Energy Cost Report

Date Range: 2016/03/27 - 2016/03/27

PDU	Total kWh
Chatsworth 30 AMP	0.00
E08-09A	35.26
E08-16B	82.08
E11-14 East	55.54

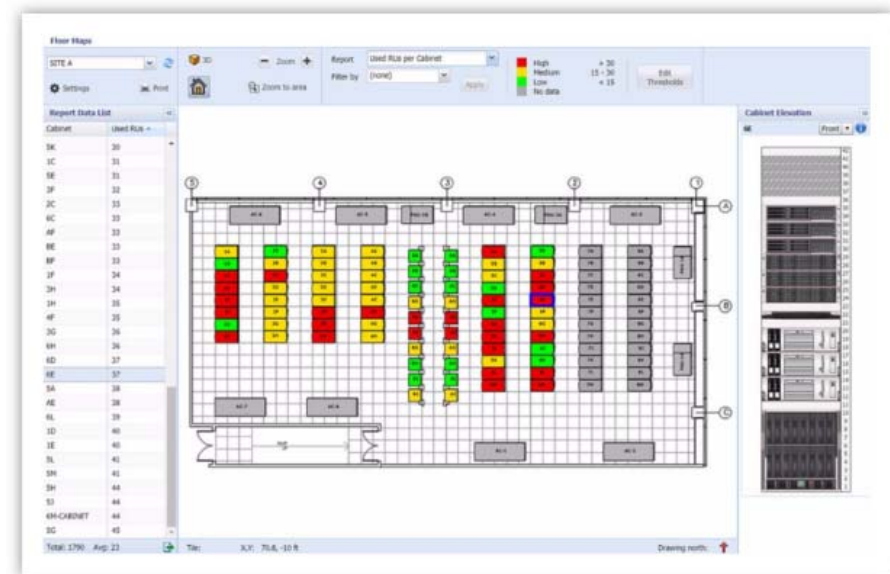


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Monitors Redundant Power

- Provides monitoring reports, simplifying three-phase system management
- A/B power feed and whether there is sufficient power for failover
- Simplifies the comparison of available redundancy



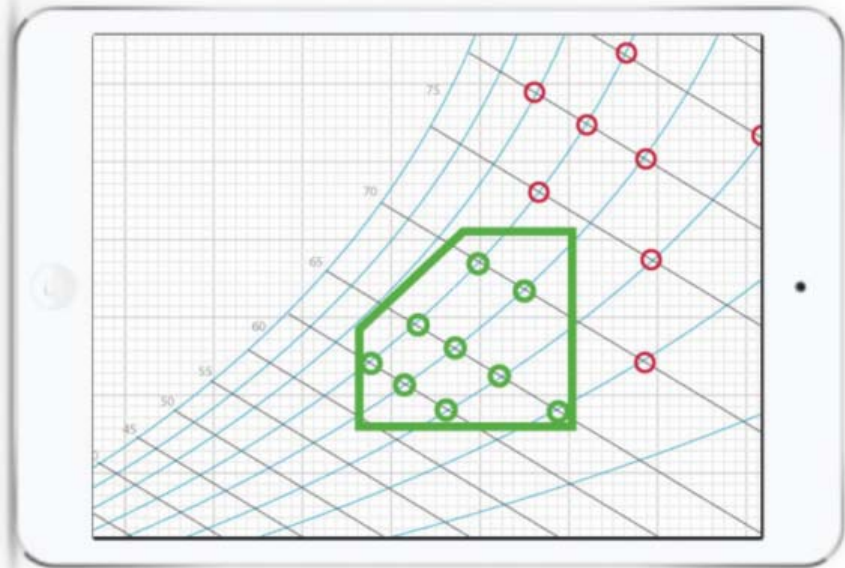
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Measures Environmental

- Reports for the specified range of operating condition at the rack level.
- Reports all the values for the site against a particular operating condition (ASHRAE).



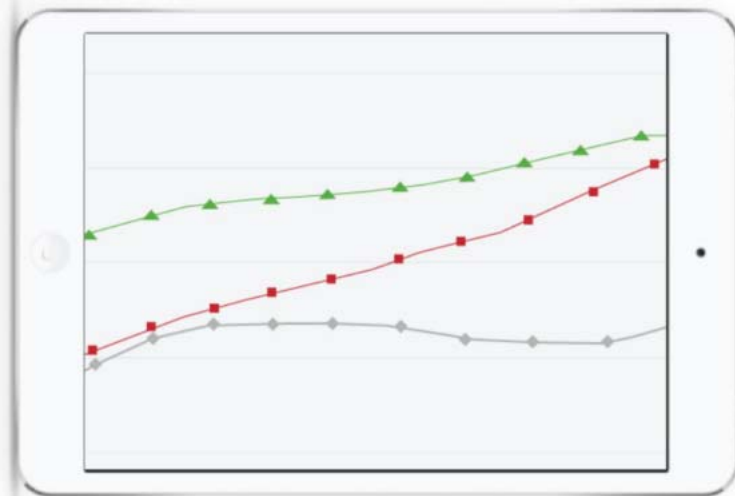
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Measures Active Power

- Allows trending of power use by rack, while minimum and maximum measurements provide visualization of peaks and valleys.



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Use Case: Colocation



Problem

- Need a way to confirm, verify or track power and environmental at the rack/device level



Solution

- Implementing intelligent PDUs with rack and outlet metering
- Deploy a DCIM to collect all the data and present it in one place.



Advantages

- Intelligent PDU that is easy to install and configure
- Tracking automation of key metrics on power that affect their cost on business
- Share the data with internal and external customers



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Use Case: Managed Services



Problem

- Lack of remote monitoring and switching capability is one of the most costly challenges (man hour: \$100 or more)



Solution

- Implement switched intelligent PDUs for device control and outlet-grouping capability
- Implement DCIM software to see all devices in one place



Advantages

- Reduced charges for service on remote equipment



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Use Case: Regulatory Compliance



Problem

- Lack of automated logging reports for regulatory compliance
- Complexity of managing physical access to the site different systems



Solution

- Implement switched intelligent PDUs for device control
- Implement DCIM software to see all devices in one place



Advantages

- An intelligent PDU is needed for compliance-related factors and when clients request cabinet access reports. Also important for accountability if errors occur during equipment maintenance
- Extending the record



Conclusion

- ✓ Intelligent PDUs provide instrumentation, consolidate hardware and simplify networking complexities while automating collection of data
- ✓ The DCIM tool provides data visualization through dashboards, trend charts and reports, giving insight of patterns
- ✓ Both solutions should be easy to use, secure and easily integrated with each other
- ✓ Decisions made simple



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