

Power IQ® for eConnect®

DCIM Software for Data Center Energy, Power and Environmental Monitoring



Data
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In today's data center, being efficient with power and cooling resources is just as important as maintaining uptime. Power IQ® (PIQ) for eConnect® software provides the information and controls you need to fully utilize your existing infrastructure resources, while alerting you to trouble before it causes downtime. With out-of-the-box compatibility with CPI eConnect rack-mount Power Distribution Units (PDUs), eConnect PIQ software can be easily deployed as a standalone monitoring solution or with Sunbird's dcTrack® DCIM Operations to provide full asset and change management.

PIQ functionality scales to meet enterprise needs, allowing you to securely keep tabs on all your data centers and labs by monitoring rack PDUs, CRACs, UPS, PDUs, RPPs, meters, branch circuits, racks, environment sensors, IT devices, and electronic door locks, all from a single web interface. PIQ is vendor neutral and automatically accepts CPI's eConnect PDUs and devices from other top manufacturers, allowing you to add support for many other products with our dynamic plug-in capability.

Centrally Manage and Control CPI eConnect Rack PDUs and Other Data Center Intelligent Assets

In modern enterprise data centers with hundreds to thousands of intelligent assets, centralized management of all equipment can be a cumbersome task. PIQ software simplifies overall management by:

- Full support of CPI Secure Array™ technology, which allows you to save significantly on PDU networking costs through IP consolidation.
- Synchronizing data between eConnect Rack PDUs and PIQ software.
- Maintaining centralized authentication, access, and auditing of all equipment and ensuring regulatory compliance with HIPAA, PCI DSS, FIMSA, EU Directive, etc.
- Providing centralized power control of all IT assets connected to Switched, and Switched Pro PDUs.
- Providing centralized cabinet access control of all electronic locks connected to eConnect Monitored, Monitored Pro, Switched, and Switched Pro PDUs.
- Providing centralized environmental monitoring of all temperature and humidity sensors connected to eConnect PDUs.
- Providing centralized grouping capabilities of outlets, PDUs, and other equipment.

Utilize Power and Cooling Resources Efficiently and Improve PUE

PIQ software automatically collects power and environmental data from CPI eConnect Rack PDUs, sensors and other intelligent equipment within the data center.

- Leverage Free Cooling – Patented Cooling Charts help you keep cabinets in the ASHRAE® allowable environmental ranges for potential cost savings.
- Identify and Eliminate Ghost Servers – Scheduled email reports pinpoint ghost servers for consolidation.
- Charge Back Energy Costs Based on Usage – Automatically generated power chargeback reports drive better behavior.

Make Informed Power and Capacity Planning Decisions

PIQ software tracks actual power load of IT devices under computing stress, providing better planning information.

- Find Stranded Capacity – Newly found capacity delays expensive capital expenditure.
- Project Future Capacity Needs - Trending and days of supply projections enable accurate forecasting.
- Monitor UPS Capacity and Battery information – End-to-end monitoring easily prevents potential over-capacity situations.
- Zero-configuration Visual Analytics - Interactive charts make it easy to extract actionable insights at the data center, room, row, rack PDU and device level from the power and environmental data you collect

Monitor Data Center Health to Prevent Costly Unplanned Downtime

Avoid unplanned downtime that can cost hundreds of thousands of dollars per outage and the health of your complete data center including critical facilities, e.g. UPS, CRACs, and Panels.

- Simulate Failover – Reports identify available capacity to ensure coverage in case of failure, send threshold based alerting and identify hotspots and potential trouble areas.
- Visualize Data Center and Facility Health Status – Health Map with red, yellow and green color coding provides an at-a-glance view of rack load levels, line currents and all environmental conditions.
- Alerting and Alarming of Threshold Violations – Automated emails enable quick identification of hotspots and potential trouble areas.
- Multi-Tile Health Chart Widget – See color-coded health data for all your data centers, rooms, POD's, zones and racks

Monitor Cabinet-Level Access Control Ensuring Regulatory Compliance

- Cabinet-Level Access Control – Auto-discover and configure doors and locks. Centralize access rights and permissions. Remotely lock or unlock your cabinet.
- Door Security Reports – Provide door status reports including door, handle, and electronic lock status. Door audit reports include user, requested action, and access summary.
- Event Logging – Log time, action, and the door/lock resulting status. Email alert reports.

VMware®, Microsoft Hyper-V®, and Linux® KVM Virtual Appliances

Platform Options:

- Our application software, database, and hardened Linux® operating system are fully tested and ready to load on your VMware, Hyper-V, Amazon Web Services or Linux KVM platform.
- Our application software, database, and hardened Linux operating system are loaded onto your enterprise-class appliance that meets our hardware specifications.



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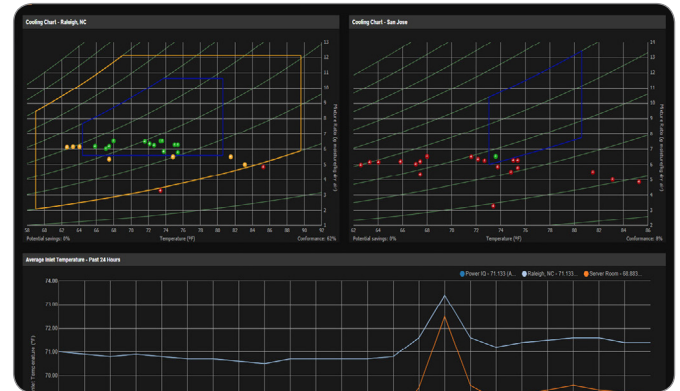
Health Monitoring

A real-time, interactive data center health map warns of issues such as hot spot formation, SLA violations, overcharges, and loss of redundancy.



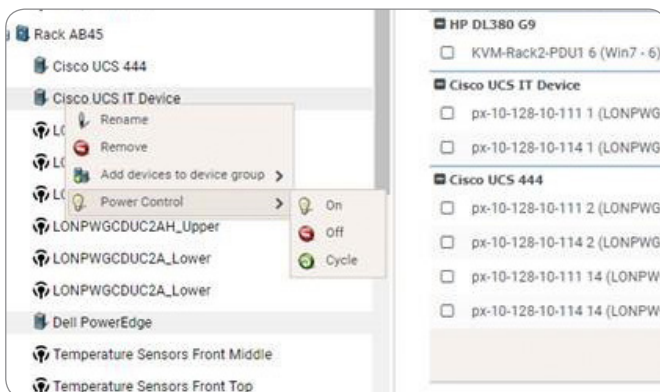
Avoid Hotspots and Overcooling

Maintain uptime, ensure compliance with manufacturer and industry-accepted recommendations, and achieve project costs savings increasing the temperature set point.



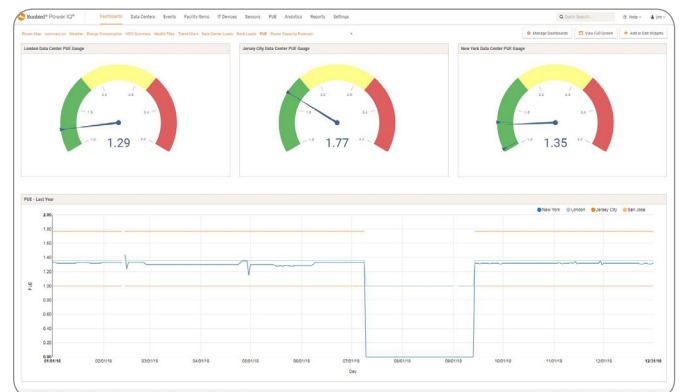
Power Control with Outlet Grouping

Easily control powering on/off of outlets, IT devices, and groups of IT devices with power sources spanning multiple rack PDUs, without the need to log into your rack PDUs individually.



Power Usage Effectiveness (PUE)

See real-time PUE and trends and your current power capacity utilization at any level in your data center or lab (PDU, rack, row, busway, room, etc.).



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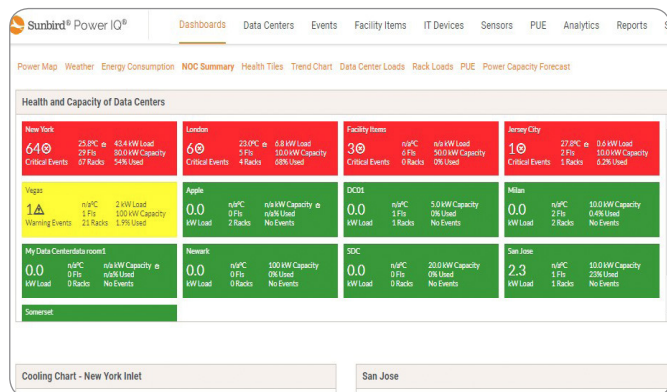
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Health Tile Dashboard for Multiple Sites

Get a holistic, color-coded view of your data centers and racks on a single screen, including power load, temperature, and warning and critical event data—no configuration required. of redundancy.



Simulate Rack Power Failure

Eliminate outage concerns with at-a-glance views and reports that identify available capacity and whether there is enough available in case of failure.

Rack 1A

Rack Summary							
Capacity (kW)				Load (kW)		Utilization	
19.00				1.67		15.7%	
Pair 1							
		192.168.43.106 Sample PDU-123		192.168.43.106 - 2 Sample PDU-123 - 2		Failover Simulation	
	Capacity (A)	Load (A)	Utilization	Load (A)	Utilization	Load (A)	Utilization
Inlet							
L1	24	1.50	5.4%	0.90	3.7%	2.20	9.2%
L2	24	0.90	3.7%	1.80	7.0%	2.70	11.2%
L3	24	1.60	6.7%	1.40	5.8%	3.60	12.5%
Circuit Breakers							
CB1	20	0.70	3.5%	0.00	—	0.70	3.5%
CB2	20	0.50	2.5%	0.00	4.0%	1.30	6.5%
CB3	20	0.70	3.5%	0.80	4.0%	1.60	7.5%
CB4	20	0.20	1.0%	0.80	4.0%	1.00	5.0%

Set Thresholds and Alerts

Set thresholds and alerts on trended data for environment sensors, power inlets, and rack PDU circuit breakers to maximize uptime, balance 3 phase power loads, and avoid hot spots and overcooling.

Occurred At	Severity	Event	Summary
08/27/20, 10:34:38 AM	WARNING	Environment over temperature	Sensor "Temp 2": temperature 86.2°F is over v
08/26/20, 03:05:00 PM	WARNING	Environmental Sensor Over Warning Threshold	Temperature Sensor reading of 81.0°F is over
08/22/20, 05:06:14 AM	CRITICAL	Facility Item Application Error	Power IQ encountered an application error at
08/22/20, 05:05:39 AM	CRITICAL	Facility Item Application Error	Power IQ encountered an application error at
08/19/20, 11:10:00 AM	WARNING	Environmental Sensor Over Warning Threshold	Temperature Sensor reading of 82.8°F is over
08/17/20, 12:20:46 PM	CRITICAL	Facility item time mismatch	The latest reading time reported by the facility
08/17/20, 12:06:46 PM	WARNING	Admin credentials invalid	Admin credentials failed to validate
08/06/20, 05:25:00 PM	WARNING	Environmental Sensor Over Warning Threshold	Temperature Sensor reading of 79.3°F is over
08/06/20, 05:10:00 PM	CRITICAL	Environmental Sensor Over Critical Threshold	Temperature Sensor reading of 84.4°F is over
08/06/20, 05:10:00 PM	CRITICAL	Environmental Sensor Over Critical Threshold	Temperature Sensor reading of 84.4°F is over
08/05/20, 11:05:00 AM	CRITICAL	Inlet Current Over Critical Threshold	Inlet 1 on 10.34.0.128 has a current reading s
07/31/20, 02:23:02 PM	CRITICAL	Ping failed	Loss of connectivity: ping failed at 07/31/20

Electronic Door Access Management

Physically lock down individual cabinets and containment areas in your data center with electronic door management via smart cards. Control access permissions through the GUI. Create and email status and audit reports to know who did what and when. Schedule time and date based door access within the GUI. Ensure no door is left unlocked with a user-configurable auto-relock timer.

The screen shows the configuration for 'Front Door 1A'. It includes a 'Door Control' section with 'Lock' and 'Unlock' buttons. Below is a 'Sensors and Door Status' section with 'Sensor Mappings' and 'Available Sensors'. The 'Sensor Mappings' table shows mappings for Door, Handle, and Lock. The 'Available Sensors' table lists various sensors and their PDU assignments. At the bottom, there is a 'Door' section with fields for Name, External Key, and an Override/Relock button.



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Monitoring and Management

- Monitor facility objects including sensors, meters, PDU/RPP/ Branch Circuits, UPS, CRAC devices, and Electronic Door Locks.
- A central management console consolidates names, polling status, location, model, and firmware onto one screen, saving valuable management time.
- Bulk configuration and firmware distribution.
- Power and environmental events and notifications.
- Auto discover rack PDUs.
- Trap filtering and forwarding.
- Multi-Tenancy support.
- Full support for Secure Array™.

Dynamic Dashboard, Reporting and Charts

- Modern HTML user interface.
- User configurable dashboard with drag-and-drop widgets.
- Monitor cabinet health and capacity with floor map visualizations.
- Energy, cost, and carbon consumption reports.
- Rack inlet psychrometric chart for temperature and humidity.
- Power charge back reports by customer.
- Cabinet-level power capacity reports.
- Cabinet door status and audit reports.
- Stranded capacity exception report.
- Capacity, trending, and status reports.
- Thermal analysis, including temperature and humidity.
- Compliance reports.
- Power capacity meter with forecasted “days of energy supply.”
- Rack PDU failover simulation reports.
- Critical and warning alerts report, display, and email notifications.
- Data archive to retain and chart more raw data.
- Exception reports that highlight conditions outside of normal operations

Automated Power Control

- Remote power control of outlets, IT devices, device groups and racks.
- Patented agentless graceful operating system shutdown.

Power and Environmental Data Aggregation

- User-configurable collection intervals ensure desired accuracy while minimizing network traffic.
- Aggregate active power, current, temperature, and humidity data.

Open Data Model

- Web Services API – for easy scripting and integration with your systems with support for Create, Read, Update, and Delete Data Center Items. Power control and reading events.
- Open database connectivity capabilities let you use your existing data warehouse and reporting system to generate custom reports.
- Import and export data via CSV file.

Create Custom Reports

- Add custom fields with Tags and Tag Groups settings.
- Tabular customized reports for active power, energy, and temperature.

Data Center	Avg kW	Max kW	Min kW	Total kWh
New York	43.25	44.50	37.48	154430.44
London	6.17	7.00	5.11	27060.88
San Jose	2.35	2.35	2.35	13675.10
Vegas	1.91	1.91	1.91	7105.34
Jersey City	0.81	0.82	0.27	0.00
Milan	0.04	0.04	0.00	235.81
DC01				
Apple	0.00	0.00	0.00	0.00

Security

- SNMP v1, 2, 3 with Informs.
- LDAP and Active Directory.
- IP-based access control and granular permissions.
- Full audit log.
- IPTables firewall.
- Support for all browsers.
- Specify unique administrator username and password.

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Power IQ for eConnect Software and License, With 1 Year Maintenance Plan

Part Number	Description
336003-001	Software and License for Up to 10 Devices
336003-002	Software and License for Up to 20 Devices
336003-005	Software and License for Up to 50 Devices
336003-010	Software and License for Up to 100 Devices
336003-020	Software and License for Up to 200 Devices
336003-030	Software and License for Up to 300 Devices
336003-040	Software and License for Up to 400 Devices
336003-050	Software and License for Up to 500 Devices
336003-100	Software and License for Up to 1000 Devices
336003-150	Software and License for Up to 1500 Devices
336003-200	Software and License for Up to 2000 Devices
336003-250	Software and License for Up to 2500 Devices
336003-300	Software and License for Up to 3000 Devices
336003-400	Software and License for Up to 4000 Devices
336003-500	Software and License for Up to 5000 Devices

Power IQ for eConnect – Additional 1 Year Maintenance License

Part Number	Description
36606-001	1 Year Maintenance License for up to 10 Devices
36606-002	1 Year Maintenance License for up to 20 Devices
36606-005	1 Year Maintenance License for up to 50 Devices
36606-010	1 Year Maintenance License for up to 100 Devices
36606-020	1 Year Maintenance License for up to 200 Devices
36606-030	1 Year Maintenance License for up to 300 Devices
36606-040	1 Year Maintenance License for up to 400 Devices
36606-050	1 Year Maintenance License for up to 500 Devices
36606-100	1 Year Maintenance License for up to 1000 Devices
36606-150	1 Year Maintenance License for up to 1500 Devices
36606-200	1 Year Maintenance License for up to 2000 Devices
36606-250	1 Year Maintenance License for up to 2500 Devices
36606-300	1 Year Maintenance License for up to 3000 Devices
36606-400	1 Year Maintenance License for up to 4000 Devices
36606-500	1 Year Maintenance License for up to 5000 Devices



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Power IQ for eConnect - Additional Device Licenses	
Part Number	Description
36604-001	Additional License for Up to 10 Devices
36604-002	Additional License for Up to 20 Devices
36604-005	Additional License for Up to 50 Devices
36604-010	Additional License for Up to 100 Devices
36604-020	Additional License for Up to 200 Devices
36604-030	Additional License for Up to 300 Devices
36604-040	Additional License for Up to 400 Devices
36604-050	Additional License for Up to 500 Devices

Power IQ for eConnect - Support Services		
Part Number	Description	
36605-001	1-Hour of Professional Service (Travel & Lodging not included)	
36605-002	1-Day Quick-Start Service (Travel & Lodging included)	
36605-003	Dynamic Plug-In, Developed, Certified and Tested by Professional Services	
Power IQ for eConnect Server Hardware		
Part Number	Description	Shipping Weight
36516-002	Power IQ for eConnect software, Pre-installed on 1U Configured Dual Power Supply Server,1Year Support and Maintenance, Includes Rail Kit	39 lb (18 kg)

For Support, call 800.834.4969 or visit chatsworth.com/power-iq-econnect

About CPI

At Chatsworth Products (CPI), it is our mission to address today's critical IT infrastructure needs with products and services that protect your ever-growing investment in information and communication technology. We act as your business partner and are uniquely prepared to respond to your specific requirements with global availability and rapid product customization that will give you a competitive advantage. At CPI, our passion works for you. With over two decades of engineering innovative IT physical layer solutions for Fortune 500 and multinational corporations, CPI can respond to your business requirements with unequalled application expertise, customer service and technical support, as well as a global network of industry-leading distributors. Headquartered in the United States, CPI operates from multiple sites worldwide, including offices in Mexico, Canada, China, the United Arab Emirates and the United Kingdom. CPI's manufacturing facilities are located in the United States, Asia and Europe.

About Sunbird

Sunbird Software is changing the way data centers are being managed. With a focus on real user scenarios for real customer problems, we help data center operators manage tasks and processes faster and more efficiently than ever before, while saving costs and improving availability. We strive to eliminate the complexity they have been forced to accept from point tools and home grown applications, removing the dependency on emails and spreadsheets to transform the delivery of data center services. Sunbird delivers on this commitment with unexpected simplicity through products that are easy to find, buy, deploy, use, and maintain. Our solutions are rooted in our deep connections with our customers who share best practices and participate in our user groups and product development process.

Based in Piscataway, NJ, Sunbird serves over 1,850 DCIM customers worldwide. For more information, please visit Sunbird-DCIM.com.

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