

DCIM Monitoring Software

Platform Options:

VMware[®], Microsoft Hyper-V[®], and Linux[®] KVM, and Amazon Web Services[®].

Our application software, database, and hardened Linux® operating system are fully tested and ready to load on VMware, Hyper-V, Linux KVM, and Amazon Web Services.

Bring Your Own Appliance (BYOA)

Our application software, database, and hardened Linux operating system are loaded onto your enterprise-classappliance that meets our hardware specifications.

"The largest improvement that I see is being able to monitor power usage in our lab and making sure that our PDUs don't get overloaded. We've gone through a few retirement phases and we can track that with the graphs in the PIQ software — we see the power usage going down. Being able to see the temperature throughout our lab is also pivotal."

Kiel Anderson | Manager, Product Development Lab, **F5**

Easily Manage Data Center and Facility Energy, Power, and Environment

In today's data center, being efficient with power and cooling resources is almost as important as maintaining uptime. Power IQ® (PIQ) software provides the information and controls you need to fully utilize your existing infrastructure resources while alerting you to trouble before it causes downtime. PIQ software can be easily deployed as a standalone DCIM 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 monitor all your data centers and labs, including your busways, UPS, PDUs, RPPs, meters, branch circuits, racks, rack PDUs, environment sensors, IT devices, and electronic door locks—all from a single web browser.

PIQ is vendor neutral and automatically supports all major manufacturers (see back page). You can easily add support for any other manufacturers with our dynamic plugin capability.

Make Informed Power and Capacity Planning Decisions

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

- Find Stranded Power Capacity Newly found capacity delays expensive capital expenditure.
- Project Future Power 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, 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 like UPSs and panels.

- Simulate Rack Failover Reports identify available capacity to ensure coverage in case of failure.
- Visualize Data Center and Facility Health Status Health Map of your data center floor 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 breaker state change, hotspots, 3 phase balance issues, and potential trouble areas.
- Multi-Tile Health Chart Widget See red/yellow/green health data for all your data centers, rooms, PODs, zones, and racks in a single screen with the ability to drill-down for full details.
- Load Shift Detection Tunable AI algorithm detects and alerts when the load shifts from one power supply on an IT device to another, indicating a potential loss of redundancy.

Utilize Power and Cooling Resources Efficiently and Improve PUE

PIQ software automatically collects power and environmental data from sensors.

- Leverage Free Cooling Patented Electronic Psychrometric 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.
- Bill Back Energy Costs Based on Usage Automatically generated bill back reports drive better behavior.



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Health Monitoring

A real-time interactive data center health map increases your uptime by providing advanced warnings of issues such as hot spot formation, SLA violations, overcharges, and loss of redundancy.



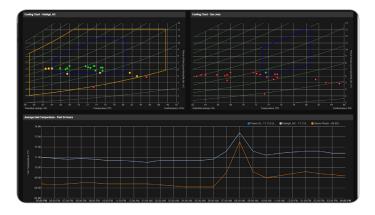
Power Control with Outlet Grouping

Easily increase productivity by controlling the 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.



Avoid Hotspots and Overcooling

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



Power Usage Effectiveness (PUE)

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







Health Tiles 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.

ower Map W	eather Er	nergy Consumption	NOC Summ	ary Health	Tiles Trend Chart	Data Center I	oads Rad	k Loads PUE Pov	ver Capacity Fo	recast	
Health and C	apacity o	f Data Centers									
New York 64 Critical Events		43.4 kW Load 80.0 kW Capacity 54% Used	London 6 🛞 Critical Even		e 6.8 kW Load 10.0 kW Capacity 68% Used	Facility Items 3 Critical Event	n/aPC 6 Fis	n/a KW Load 50.0 kW Capacity 0% Used	Jersey City 10 Critical Events		e 0.6 KW Load 10.0 KW Capacity 6.2% Used
Vegas 1A Warning Events	n/sPC 1.Fis 21.Racks	2 KW Load 100 KW Capacity 1.9% Used	Apple 0.0 KW Load		n/a KW Capacity e n/a% Used No Events	DCD1 0.0 KW Load	n/a*C 1 Fis 1 Racks	5.0 kW Capacity D% Used No Events	Milan O.O KW Load	n/#PC 2 Fis 2 Racks	10.0 kW Capacity 0.4% Used No Events
0.0 0	/afC n Fis n	la KW Capacity e la%Used o Events	Newark 0.0 kWLoad	n/aPC O Fis O Racks	100 KW Capacity 0% Used No Events	SDC 0.0 KW Load	n/aºC O Fis O Racks	20.0 KW Capacity 0% Used No Events	San Jose 2.3 KW Load	n/#°C 1 Fis 1 Racks	10.0 kW Capacity 23% Used No Events

Bill Back Energy Usage

Automatically generate bill back reports that charge individual organizations based on usage, including premium charges for overages, provide equitable distribution of power and energy charges, and drive energy efficiency and sustainability initiatives.

Sunbird® Power IQ®	Dastosaros Data Centers Events Facility Items IT Device	s Sensors PUE Analytics Pagonit Settings				Q Quick Search
e Aervee v						
eports •	Preview Edit					
♦ Nex Report v	🖌 Edit 🖸 Rus Now 😑 Delete					🔺 Ege
** Semple PCU power ** ** Semple Temperature report ** A foor Cents Report for NY Application Loads Cobiert Capacity And Redundan- cabiert op/	Sumbird Customer Bill wit	th Details		Rapots	el: 2019/00/14 03 22 AM	
Cabinet Power Fail-over Redunds capacity creates critical rack load	Date Range: 2019/05/01 - 2019/05/0	1				
Customer Energy Bill Customer Bill with Details	Device	Total kWh	Avg XW	Max KW	Min KW	
Customer Bill with Rack Details Customer Billing	20	902.32	1.21	1.23	0.75	
Eats Center Energy Consumption	4E	881.63	1.12	1.01	0.61	
Evra Center Loads	20	814.74	1.09	1.10	0.50	
Ghost Server Report GoodYear NY Rack Power Cap	45	643.75	0.65	0.97	0.40	
Good Vear Neekly Temp	36	403.52	0.54	0.78	0.05	
proup of racks historical power data	35	232.55	0.31	0.57	0.10	
IT Device Load	IBM Blade System	50.99	0.05	0.10	0.00	
Networking Rack Load	HPE BladeSystem c7000 A	53.46	0.05	0.10	0.07	
Freik Load by Cabinet - Last 30 C	Cisco 7609 Router A	39.60	0.05	0.09	0.05	
Power Load by Day Power Load by Month	Cisco UCS 5100.A	37.55	0.06	0.08	0.05	
Rack Capacity for NV	F5 ARX1000	17.12	0.02	0.02	0.02	
Fack Group Power Stock power for rack cap	Dell PowerEdge T610 A	16.51	0.02	0.02	0.02	
	Cisco Catalyst 2600 A	6.69	0.01	0.01	0.01	
	server abc	2.71	0.01	0.01	0.01	
LPS Group	53(2					
	Router A					
	orange					
	LY02111					
	1003					

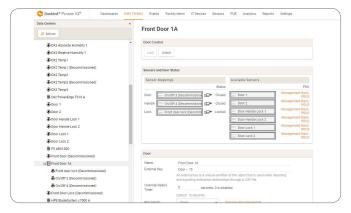
Simulate Rack Power Failure

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

Rack	1A						
Rack Summ	1279						
Dapacity (WK)						Load (kW)	Utilization
18.00						1.67	15.7%
Pair 1							
		102.168.40.106 Sample POU-123		192.168.43.108 - 2 Sample PDU-123 - 2		Failover Simula	ation
	Capacity (A)	Load (A)	Utilization	Load (A)	Utilization	Load (A)	Utilization
inlet							
LI	24	1.30	5.4%	0.90	3.7%	2.20	9.2%
12	24	0.90	3.7%	1.80	7.5%	2.70	11.2%
Lå	24	1.60	6.7%	1.40	5.0%	3.00	12.5%
Greut Brei	akers						
CB1	20	0.70	3.5%	0.00	-	0.70	3.5%
002	20	0.50	2.5%	0.60	4.0%	1.00	6.5%
080	20	0.70	3.5%	0.80	4.0%	1.60	7.6%
CB4	20	0.20	1.0%	0.90	4.0%	1.00	5.0%

Electronic Access Management

Physically lock down individual cabinets and containment areas in your data center with electronic door management compatible with third-party door locks with RFID. Schedule time- and datebased door access within the GUI and create and share status and audit reports to improve productivity and enforce compliance. Ensure no door is left unlocked with a user-configurable auto-relock timer.







Monitoring and Management

- Monitor facility objects, including rack PDUs, busways, sensors, meters, PDU/RPP/branch circuits, UPSs, 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 for Chatsworth, Raritan, and Server Technology PDUs
- Power and environmental events and notifications
- Autodiscover rack PDUs
- Trap filtering & forwarding plus JSON push alerts
- Multi-tenancy support

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 enables easy scripting and integration with your systems with support for creating, reading, updating, and deleting data center items and for 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

Security

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

Dynamic Dashboard, Reporting, and Charts

- Modern HTML user interface
- User-configurable dashboards 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 chargeback reports by customer
- Cabinet-level power capacity reports
- Cabinet door status and audit reports
- Cabinet-level stranded power capacity chart
- 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 charts
- Critical and warning alerts report, display, and email notifications
- Exception reports that highlight conditions outside of normal operations
- Data archive to retain and chart more raw data
- 3 phase current imbalance and circuit breaker state

Create Custom Reports

- Tailor reports to focus on only the relevant timeframe and information
- Sort and filter data on power/energy, temperature, and other metrics to gain more granular insights
- Add custom fields with Tags and Tag Groups settings
- Customized tabular reports for active power, energy, and temperature

Vendor Agnostic Support

Out of the box support for: APC®, Avocent®, BayTech®, Chatsworth Products, Inc., Cyber Switching®, Cyclades® Eaton, Emerson®, Geist, HP®, Knurr®, Liebert, MRV®, NetBotz, Raritan®, Rittal®, Schleifenbauer®, Schneider Electric, Server Technology®, Sinetica, Starline Track Busway, Tripp Lite, UNITE™, Veris®, and many other devices

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- Dynamic plugin capability
- Over 250 dynamic plugins are available at addons.sunbirddcim.com

Call 732.993.4476 or visit **SunbirdDCIM.com**

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 2,000 DCIM customers worldwide. For more information, please visit SunbirdDCIM.com.

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