



Power IQ

Energy management via a single Web interface.

Platform Options

- ▶ VMware® Virtual Appliance
 - Our application software, database and hardened Linux® operating system are fully tested and ready to load on your VMware platform
 - Tested with ESX™, ESXi™ and Player
- ▶ Raritan Hardware Appliance
 - Our application software, database and hardened Linux operating system are loaded onto our enterprise-class, rack-mountable 2U server with dual power supply and redundant fans



Winner of "Outstanding IT Product"
for Power IQ Energy Management Software and PX™ intelligent power distribution units (iPDUs)

Data Center Energy Management

A Solution That Helps You Be More Energy Efficient

For data center and lab managers who are concerned about the utilization and the cost of power, Power IQ enables you to reduce capital and operating expenditures by providing the information and controls you need to be more energy efficient.

Power IQ provides centralized monitoring, graceful OS shutdown, outlet control, powerful thermal and energy analytics of your active power, costs, line capacities, carbon footprint and rack temperature. Trending reports and cumulative totals can be displayed at the data center, floor, room, rack, customer and IT device level. You can generate customer energy billback cost reports in local currency with one click. Through one Web browser, the scalable Power IQ manages PDUs made by APC®, Avocent®, BayTech®, Cyber Switching®, Geist, HP, Knurr®, Liebert®, MRV®, Raritan, Rittal®, Server Technology®, UNITE™ and more.

Efficiently Utilize Energy

Power IQ provides you with valuable information and automated control that can help you gain efficiencies in the data center right away, including:

- ▶ Baseline energy consumption and track changes by IT device, rack, zone, customer, department and data center
- ▶ Easily see if you are operating within industry-accepted – and server manufacturers' recommended – temperature and humidity ranges
- ▶ Estimated savings calculation from increasing temperature to upper limit of recommendations
- ▶ Temperature threshold alert monitoring and trending, to safely manage environmental conditions
- ▶ Energy cost billback reports with one click
- ▶ Remote power on/off outlet groups
- ▶ Graceful agentless shutdown of system operating systems

Make Informed Capacity Planning Decisions

Power IQ supplies actual load of IT devices under computing stress to provide you with better planning information.

- ▶ Collect short- and long-term data and compare to rated capacity to update design assumptions
- ▶ Monitor trends, alerts and threshold violations to understand future needs

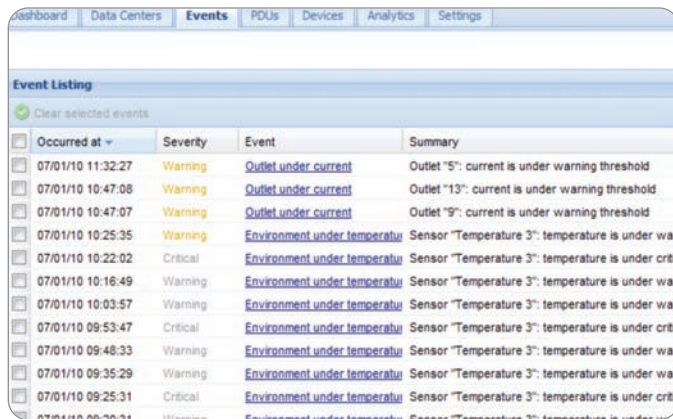
Open Standards-Based System Architecture

- ▶ Web Service API – for easy integration with your systems and custom programs
- ▶ LDAP/AD support offers easier centralized authentication
- ▶ Open database compliant system allows for easy information sharing

More informed capacity planning and energy efficiency in minutes

Vendor Agnostic Monitoring and Management

Through one Web browser, the scalable Power IQ monitors and manages PDUs from APC, Avocent, BayTech, Cyber Switching, Geist, HP, Knurr, Liebert, MRV, Raritan, Rittal, Server Technology, UNITE and more.



Dashboard | Data Centers | **Events** | PDUs | Devices | Analytics | Settings

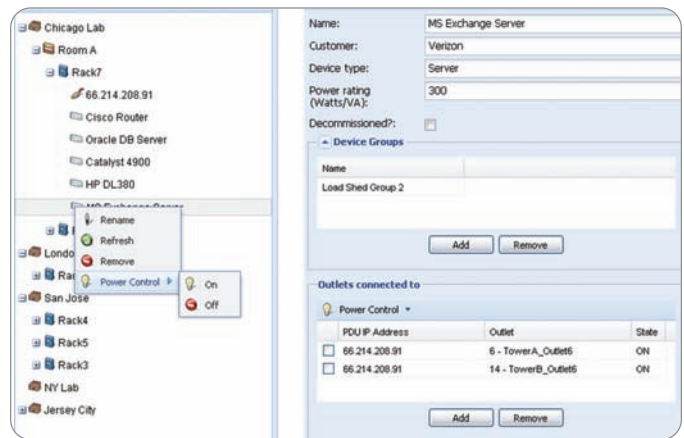
Event Listing

Clear selected events

Occurred at	Severity	Event	Summary
07/01/10 11:32:27	Warning	Outlet under current	Outlet "5": current is under warning threshold
07/01/10 10:47:08	Warning	Outlet under current	Outlet "13": current is under warning threshold
07/01/10 10:47:07	Warning	Outlet under current	Outlet "9": current is under warning threshold
07/01/10 10:25:35	Warning	Environment under temperature	Sensor "Temperature 3": temperature is under warning threshold
07/01/10 10:22:02	Critical	Environment under temperature	Sensor "Temperature 3": temperature is under critical threshold
07/01/10 10:16:49	Warning	Environment under temperature	Sensor "Temperature 3": temperature is under warning threshold
07/01/10 10:03:57	Warning	Environment under temperature	Sensor "Temperature 3": temperature is under warning threshold
07/01/10 09:53:47	Critical	Environment under temperature	Sensor "Temperature 3": temperature is under critical threshold
07/01/10 09:48:33	Warning	Environment under temperature	Sensor "Temperature 3": temperature is under warning threshold
07/01/10 09:35:29	Warning	Environment under temperature	Sensor "Temperature 3": temperature is under warning threshold
07/01/10 09:25:31	Critical	Environment under temperature	Sensor "Temperature 3": temperature is under critical threshold

Power Control

Easily perform remote power control of outlets, IT devices and groups of IT devices with power sources spanning multiple rack PDUs.



Chicago Lab

- Room A
 - Rack7
 - 66.214.208.91
 - Cisco Router
 - Oracle DB Server
 - Catalyst 4900
 - HP DL380

- London
- San Jose
- Rack4
- Rack5
- Rack3
- NY Lab
- Jersey City

Power Control: On (lightbulb icon), Off (power icon)

Name: MS Exchange Server
Customer: Verizon
Device type: Server
Power rating (Watts/VA): 300
Decommissioned:

Device Groups

Name
Load Shed Group 2

Add Remove

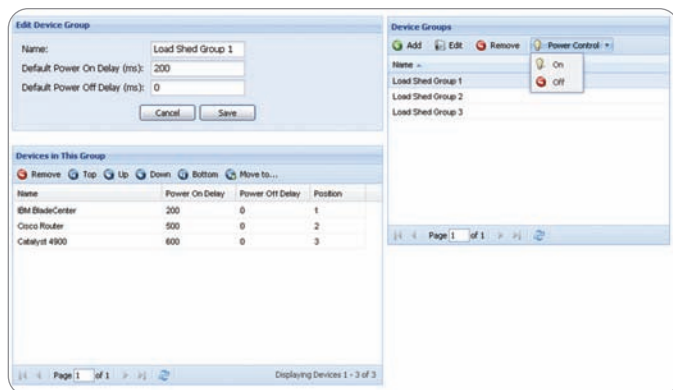
Outlets connected to

PDU IP Address	Outlet	State
<input type="checkbox"/> 66.214.208.91	6 - TowerA_Outlet6	ON
<input type="checkbox"/> 66.214.208.91	14 - TowerB_Outlet6	ON

Add Remove

Power Control of Device Groups

Control power to a device group with configurable on/off sequence and delay of IT devices within the group.



Edit Device Group

Name: Load Shed Group 1
Default Power On Delay (ms): 200
Default Power Off Delay (ms): 0
Cancel Save

Devices in This Group

Name	Power On Delay	Power Off Delay	Position
BladeCenter	200	0	1
Cisco Router	500	0	2
Catalyst 4900	600	0	3

Remove Top Up Down Bottom Move to...

Device Groups

- Load Shed Group 1
- Load Shed Group 2
- Load Shed Group 3

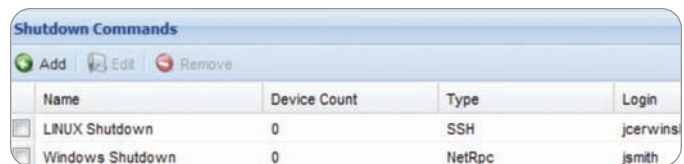
Power Control: On (lightbulb icon), Off (power icon)

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Displaying Devices 1 - 3 of 3

Agentless Graceful Shutdown

Schedule one-time or recurring shutdowns of operating systems and outlets for efficiency or maintenance purposes. Use standard or custom scripts.



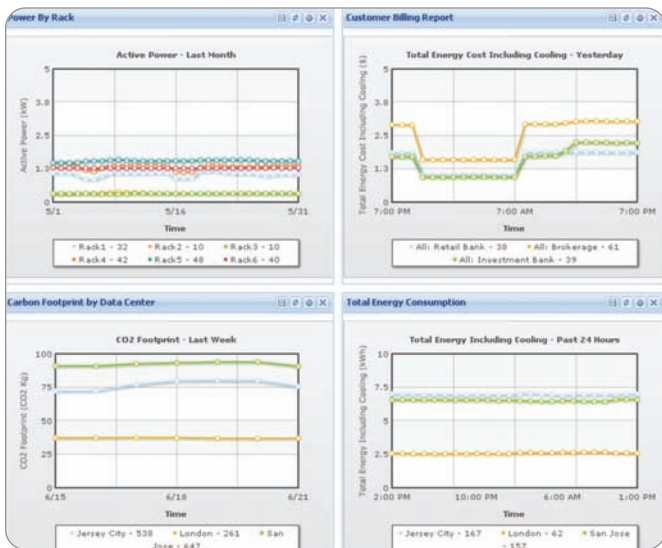
Shutdown Commands

Add Edit Remove

Name	Device Count	Type	Login
LINUX Shutdown	0	SSH	jcerwins
Windows Shutdown	0	NetRpc	jsmith

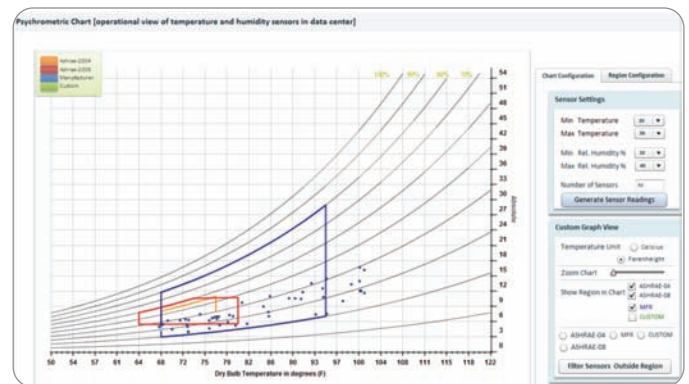
Power and Energy Analytics

Create an unlimited number of charts, such as active power by rack, carbon footprint by building, department billback and total energy consumption.



Cooling Chart

Understand if you are compliant with manufacturers' and industry-accepted recommendations, and project how much you can save by increasing room ambient temperatures.



Outlet-Level and Line Metering

Chart actual energy consumption at the IT device level to better support your energy conservation programs.*

Outlet-Level Metering

The last reading was done at 09/11/08 07:05:27 AM.

Unit level readings	Act. Power (Watts)	App. Power (Watts)
Unit	827.75	827.75

Line/circuit breaker readings	Current (Amper)	Available (Amper)
Line 1	3.98	31.02
Line 2	3.98	31.02
Line 3	0.00	35.00
Circuit breaker 1	3.98	16.02
Circuit breaker 2	0.00	20.00
Circuit breaker 3	0.00	20.00

There are 24 outlets on this device.

#	Outlet	Current (Amper)	Act. Power (Watts)
1	RACK1_Fire_Brokerage Div	0.00	0.00
2	RACK1_Fire_Brokerage Div	0.00	0.00
3	RACK1_Fire_Trading Div	0.00	0.00
4	RACK1_Fire_Trading Div	0.00	0.00
5	RACK1_Web_Brokerage Div	3.98	827.75
6	RACK1_Web_Brokerage Div	0.00	0.00
7	RACK1_Web_Trading Div	0.00	0.00
8	RACK1_Web_Trading Div	0.00	0.00
9	RACK1_Web_Banking Div	0.00	0.00
10	RACK1_Web_Banking Div	0.00	0.00
11	RACK1_Web_Banking Div	0.00	0.00
12	RACK1_Router_Banking Div	0.00	0.00
13	RACK1_Router_Brokerage Div	0.00	0.00
14	RACK1_Router_Trading Div	0.00	0.00
15	RACK1_Router_Brokerage Div	0.00	0.00
16	RACK1_Corcle_Corporate	0.00	0.00

Line Metering

The last reading was done at 09/11/08 06:56:17 AM.

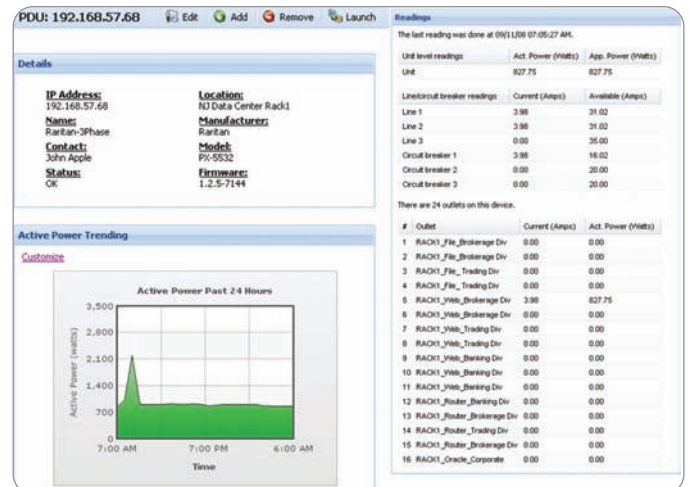
Unit level readings	Act. Power (Watts)	App. Power (Watts)
Unit	120.00	120.00

Line/circuit breaker readings	Current (Amper)	Available (Amper)
Line 1	0.00	20.00
Line 2	1.00	19.00
Line 3	0.00	20.00

No outlet information is available for this device.

PDU Page

View details about the PDU, such as manufacturer, model, serial number, firmware, voltage and current ratings, location and status.



*Depends on the intelligence of the rack PDUs.

Monitoring and Management

- ▶ 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 PX PDUs
- ▶ Power and environmental events and notifications

Automated Power Control

- ▶ Remote power control of outlets, IT devices, device groups and racks
- ▶ 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

Reporting and Charts

- ▶ Energy, cost and carbon consumption reports keep customers and/or internal departments informed
- ▶ Chargeback reports
- ▶ Exception reports help you find stranded power capacity
- ▶ Trending and status reports help you easily see future capacity needs
- ▶ Thermal analysis – temperature and humidity compliance reports

Open Data Model

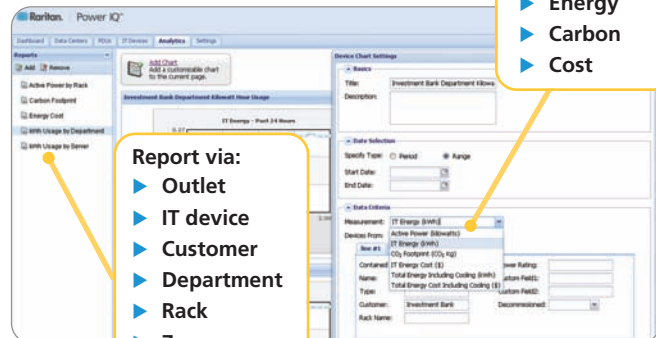
- ▶ Web Service API – for easy integration with your systems and custom programs
- ▶ Open database connectivity capabilities let you use your existing data warehouse and reporting system to generate custom reports
- ▶ Import and export data via CSV file

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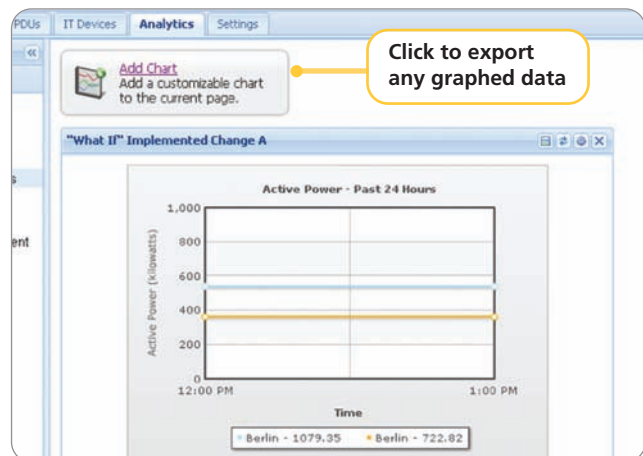
“Power IQ easily allows me to manage and forecast my power needs in the data center. The centralized aggregation of my power consumption will be invaluable in planning future data centers and analyzing future power needs.”

– Matt Pusateri
Systems Administrator
WebAssign

Create Custom Reports



Export Graphed Data to CSV



Ready to learn more about Raritan's Power IQ?

Call 1.800.724.8090 or visit www.raritan.com/poweriq today.