

Power IQ® DCIM Monitoring Version 6.2.2

These Release Notes contain important information regarding the release of this product, so please read them carefully. We strongly recommend that you read the entire document.

Note: *Power IQ 6.2.2 is a maintenance release. For information on the new features in Power IQ's most recent major release, see the Software Enhancements in Power IQ 6.2.0 section below.*

Applicability

This software release is applicable for both the virtual appliance and the hardware appliance. We recommend that you upgrade to this release.

Back Up Your System Before You Upgrade!

Ensure redundancy, recover from human error, and safeguard your Power IQ configuration and data with frequent backups!

Before you upgrade, we **strongly recommend that you generate a backup of your Power IQ system configuration** and save it to another location, such as your hard drive. We also strongly recommend that you set up remote storage for backup files to automatically push all daily backups to a remote storage location. For more information, see [Data Backups](#) in the Power IQ online help.

Software Enhancements in Power IQ 6.2.0

The following features are new or enhanced in Power IQ 6.2.0:

- Fast to Deploy
 - Mass Configuration of Server Technology PDUs for IP Addresses, Network Masks, Gateways, Administrator Passwords, SNMP Settings, and Trap Destinations
 - Autodiscovery of Server Technology PDU Extensions (Daisy-Chained PDUs)
- Easy to Use
 - Server Technology PDU Firmware Management
 - New Environmental Sensor Management Tab
 - Set Temperature and Humidity Thresholds on Power IQ Collected Data

Mass Configuration of Server Technology PDUs

Deploy, manage, and update facility items faster with Power IQ's mass configuration features. In Release 6.2.0, you can now bulk update IP addresses, subnet masks, gateways, administrator passwords, SNMP settings, and trap destinations across a set of supported Server Technology facility items.

Note: Before performing bulk configuration actions on PDUs, Sunbird recommends putting them into Maintenance Mode. This will prevent events related to lost connectivity and admin credential checks from being generated while the actions are running. After the bulk configuration plan has completed, be sure take the PDUs out of Maintenance Mode by using the Return to Service option.

Note: In naming PDUs, Power IQ typically uses a PDU's sysName value as is commonly seen on the SNMP MIB to display the PDU name in the GUI. However, to improve identification of daisy-chained Server Technology PDUs, Power IQ now uses the sysName value for master PDUs and the PDU's Tower Name for the daisy-chained Server Technology PDUs.

Bulk Update IP Addresses, Subnet Masks, and Gateways

You can update the IP addresses, subnet masks, and gateways of multiple Server Technology PDUs via CSV import. This is useful if you need to repartition a network and move PDUs from one subnet to another. From the Facility Items tab > Activities -> Bulk Configuration Activities > Update IP Address, simply export the PDUs to CSV, make your edits, and then re-import your CSV file into Power IQ.

Bulk Update Passwords, Trap Destinations, and SNMP Configuration

Bulk Configuration templates, under the Facility Items tab > Activities -> Bulk Configuration Activities > Manage Bulk Configuration Templates, provides a single place to update administrator passwords, change trap destinations, and configure SNMP credentials. Each action has its own panel where you can make and save your changes before selecting from the list of available PDUs which PDUs you would like to change. You can create a single, reusable template that makes one or more changes when run. The Template Actions section will also note the supported facility items for each action.

Since Power IQ only communicates with the master Server Technology PDU in the chain, Power IQ will only display the master Server Technology PDUs in the list of available PDUs. When you successfully change the password on a master Server Technology PDU, Power IQ will internally update the administrator username and password for the PDU on the daisy-chained PDUs to the same credentials. Updates to both the master and daisy-chained PDUs are captured in the Power IQ audit log.

Note: If you change the administrator password used by Power IQ for a Server Technology PDU through the PDU UI, you must restart the PDU to ensure that the Server Technology SNAP API will correctly authenticate requests from Power IQ.

However, if you change the administrator password through the Power IQ UI, Power IQ will restart the PDU without any additional action by the user.

Autodiscovery of PDU Extensions (Daisy-Chained PDUs)

The Server Technology PDUs in many data center environments follow a configuration with a master PDU and extension (linked or daisy-chained) PDUs. When a Server Technology master PDU is autodiscovered within an IP address range using Power IQ's autodiscovery feature, the daisy-chained PDUs attached to the master will also be discovered as separate units, starting at Proxy Index 2. The feature also applies when a Server Technology master PDU is added either manually or through CSV import.

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IT Devices

Sensors

PUE

Analytics

Reports

Settings

Facility Items List

Add

Edit

Launch

Events

Rescan

Maintenance

Decommission

Return to Service

Remove

☐	Name	Label	Location	Manufacturer	Model	Firmware
☐	namestring2	192.168.46.224 - 2	locationstri...	Server Technologies	C2X48CE-YCMFAM66	Version 8.0g
☐	namestring1	192.168.46.224	locationstri...	Server Technologies	C2W48CE-YCMFAM66	Version 8.0g
☐	MasterSysname2	192.168.46.110 - 2	locationlink7	Server Technologies	ServerTech-Default	Sentry Switched CDU Version 7.0w
☐	MasterSysname2	192.168.46.110 - 1	locationlink7	Server Technologies	CWG-32VD2C415-018/AA	Sentry Switched CDU Version 7.0w
☐	test	192.168.46.239 - 2	Raleigh Lab	Server Technologies	CXG-32VD2C415-018/AA	Sentry Switched CDU Version 7.0w
☐	test	192.168.46.239 - 1	Raleigh Lab	Server Technologies	CWG-32VD2C415-018/AA	Sentry Switched CDU Version 7.0w

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Server Technology PDU Firmware Management

Power IQ 6.2.0 enables you to store firmware and push firmware updates to one or more PDUs faster and with fewer clicks. You can upload firmware and select PDUs to update using the bulk configuration templates under the Facility Items tab > Bulk Configuration Activities > Manage Bulk Configuration Templates.

Firmware Update

To upgrade the firmware, select a version from the table below. Hit Save when done to add the action to the plan.
Selected Firmware: Server Technology v8 Pro, Version: 8.0i

Upload
Delete
Edit

	Version ▾ ▾	Platform ▾	Uploaded By ▾	Uploaded At ▾	Comment
✓	8.0i	Server Technology v8 Pro	System Administrator	06/25/2018 02:54:20.155 PM	Newer STI f/w for demo
✓	8.0g	Server Technology v8 Pro	System Administrator	06/25/2018 02:53:51.065 PM	Older STI f/w for demo
✓	2.4.0.5-39563	Raritan Xerus	System Administrator	04/23/2013 01:50:59.677 PM	
✓	1.5.2.0-10441	Raritan PX1	System Administrator	08/14/2012 11:24:25.396 AM	

Reset
Save

Environmental Sensor Management

Power IQ's new Sensors tab makes it easy to configure, manage, view, and update environmental temperature and humidity sensors. The Sensors tab displays a grid that lists the sensors in Power IQ and provides information about them, including name, associated facility item, type, and thresholds. In this tab, you can easily view and manage all sensors in Power IQ:

- Edit sensor information, including name, position in rack, and height in rack; as well as override default thresholds (high warning, high critical, low warning, and low critical thresholds)
- Edit sensor information in bulk or through double-click to edit
- Sort, filter, and group sensors by any of the available column criteria
- Aggregate numeric columns using count, sum, minimum, maximum, and average aggregate functions
- Show/hide the columns in the Sensors grid and save the modified grid configuration as the default
- Export the data to CSV

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Dashboards Data Centers Events Facility Items IT Devices **Sensors** PUE Analytics Reports Settings

quick search

Name	Facility Item	Sensor Type	Status	State	Latest Reading	30 Day High	30 Day Moving Average	30 Day Low	Rack	Critical Low	Warning Low	Warning High	Critical High
✓ Humidity AE11750...	192.168.43.125	Humidity	Warning		35.0%	40.0%	34.4%	25.0%	Rack B6				
✓ T06-43.117	192.168.43.117	Temperature	Good		77.2°F	78.3°F	76.3°F	70.9°F	Rack B5				
✓ RH06-43.117	192.168.43.117	Humidity	Good		31.0%	41.0%	31.4%	27.0%	Rack B5				
✓ Temperature 43-192	192.168.43.125	Temperature	Good		74.3°F	85.1°F	75.9°F	72.3°F	Rack B6				
✓ T05-43.117	192.168.43.117	Temperature	Warning		80.4°F	83.1°F	80.7°F	75.2°F	Rack B5				
✓ RH05-43.117	192.168.43.117	Humidity	Warning		26.0%	33.0%	25.8%	22.0%	Rack B5				
✓ Temperature AE11...	192.168.45.136	Temperature	Warning		76.1°F	87.8°F	77.6°F	71.6°F	Rack A4				
✓ Humidity AE11060...	192.168.45.236	Humidity	Good						Rack A4				
✓ Humidity AE11750...	192.168.45.244	Humidity	Good						Rack A4				
✓ Temperature AE11...	192.168.45.244	Temperature	Good						Rack A4				
✓ Temperature AE11...	192.168.45.236	Temperature	Good						Rack A4				
✓ Temperature AE11...	192.168.45.236	Temperature	Good						Rack A4				
✓ Bottom of Rack 10...	192.168.43.207	Temperature	Good						Rack A				
✓ Humidity 1 - 43.207	192.168.43.207	Humidity	Good						Rack A				
✓ Temperature 1 - 4...	192.168.43.207	Temperature	Good						Rack A				
✓ Humidity 2	192.168.43.207	Humidity	Good						Rack A				

Save Grid Configuration

Clear all filters

Export all data as csv

Export visible data as csv

Columns:

- ☐ Serial Number
- ☐ Position In Rack
- ☐ Height In Rack
- ☒ Latest Reading
- ☒ 30 Day High
- ☒ 30 Day Moving Average
- ☒ 30 Day Low
- ☐ Unit Of Measure
- ☐ Data Center Name
- ☐ Floor
- ☐ Room

Temperature and Humidity Thresholds on Power IQ Collected Data

In Power IQ 6.2.0, temperature and humidity thresholds can be set to help you better manage and monitor environmental conditions in your data center. Sensor thresholding creates events and event notifications when a temperature or humidity sensor reading exceeds or is below the threshold settings. The readings are based on the latest readings collected by Power IQ via the associated facility item.

You can set default sensor thresholds under the Settings tab > Appliance Administration > Threshold Settings or override the default values individually on the Sensors grid in the Sensors tab.

Note: Environmental thresholding is automatically enabled at default thresholds if rack power thresholding is already enabled on your system. In this case, **you may receive temperature and humidity alerts if your current readings exceed ASHRAE values.** Otherwise, environmental thresholding is disabled by default. You can configure the default threshold settings on the Settings → Default Thresholds page. For more information on how to set global thresholds and monitor for power, temperature, and humidity, watch our video on the Support Portal [here](#).


 PowerIQ®

Dashboards Data Centers Events Facility Items IT Devices Sensors PUE Analytics Reports **Settings**

☒ Enable Power, Temperature, and Humidity Thresholding

Threshold Type	Measure	Vertical Position	Horizontal Position	Lower Critical
				>, <, <=, >=, =, null, fnull
Rack	Percent Capacity	N/A	N/A	N/A
Temperature	Degrees Fahrenheit	Top	Inlet	62.8
Temperature	Degrees Fahrenheit	Middle	Inlet	62.8
Temperature	Degrees Fahrenheit	Bottom	Inlet	62.8
Temperature	Degrees Fahrenheit	Not Set	Inlet	62.8
Temperature	Degrees Fahrenheit	Any	Outlet	62.8
Humidity	Percent Humidity	Any	Inlet	28.5

Bug Fixes and Customer-Reported Items Over Release 6.2.1

Release 6.2.2 provides fixes for the following bugs, customer-reported items, and/or security vulnerabilities over Release 6.1.3:

Ticket Number	Issue Number	Summary
11053	PIQ-11743	Daily rollups for inlet readings fail to run. This causes issues with charts and PUE calculations that leverage the daily values.
N/A	PIQ-11546	Added support for three-phase Unite PDUs that have a single connection to the rack monitoring unit.
10973	PIQ-11655	Race condition exists on decommissioned sensors that can affect events and alerts.
10898	PIQ-11611	Upgrades to Release 6.2.0 not allowed from pre-6.1.0 versions.
10795	PIQ-11714	On KVM installations, log partition can fill causing issues with report generation and other areas.
10307	PIQ-11418	Power Control task scheduling isn't working.
10100	PIQ-11351	Added support for TrippLite PDUMH20HVATNET PDUs running older 12.04 firmware. The newer 12.06 firmware is already supported.
9630	PIQ-11344	In rare situations, tasks like PDU rescans and updates can fail to run.
9893	PIQ-11273	Error when uploading HTTPS certificate in Chrome.
9600	PIQ-11247	Datakom Energy Analyzer won't add to Power IQ.

9515	PIQ-11173	Power IQ delays sending reports.
9481	PIQ-11141	Clicking on Dynamic Plugin PDU Count doesn't bring up a filtered list of PDUs.
8844	PIQ-11139	Dynamic Plugin: Adding a PDU without a sensor fails when using structured plugin.
9369	PIQ-11131	Error when doing Power Control on APC PDUs.
N/A	PIQ-11111	PIQ is recording null values for the last four PX1 data buffer readings.
N/A	PIQ-11071	SmartCharts fail to show environmental readings when one sensor is "corrupt."
8441	PIQ-10857	LDAP query - unknown error message id=21.
8224	PIQ-10845	Smart-UPS SRT 5000 displaying extra temperature and humidity sensors.
8616	PIQ-10813	Error adding APC ATS AP4423 running firmware 4.1.9.
1550	PIQ-7435	Added support for bulk updating sensors.
N/A	PIQ-11299	Improved Floor Map Rack Inspector load time.
N/A	PIQ-10851	Improved IT Device charting performance.
N/A	PIQ-11259	Maximum temperature reported on device chart is average of maximum sensor values.

Important Notes

Virtual Machine Requirements*

Minimum Configuration (Number of PDUs)	RAM (GB)	CPU (Cores)	Datastore (GB)	OS	VMware	Microsoft	Linux
Up to 100	8	4	160 or more	CentOS 64-Bit	ESX/ESXi	Hyper-V	KVM
101-1000	16	8	160 or more	CentOS 64-Bit	ESX/ESXi	Hyper-V	KVM
1001-1500	32	16	160 or more	CentOS 64-Bit	ESX/ESXi	Hyper-V	KVM
1501-2000	64	24	160 or more	CentOS 64-Bit	ESX/ESXi	Hyper-V	KVM
2001-3000	96	24	160 or more	CentOS 64-Bit	ESX/ESXi	Hyper-V	KVM

3001-4000	128	24	160 or more	CentOS 64-Bit	ESX/ESXi	Hyper-V	KVM
4001-5000	160	32	160 or more	CentOS 64-Bit	ESX/ESXi	Hyper-V	KVM
5001-6000	196	32	160 or more	CentOS 64-Bit	ESX/ESXi	Hyper-V	KVM

* These requirements assume the following: 32 outlets per facility item, 10-minute data polling interval, and 10-minute health polling rate. For facility items that support data logging, a 10-minute sample rate is supported for the configurations provided in the table.

Additional Comments

The table below provides helpful information on issues related to Power IQ Releases 5.2 and above:

Issue	Comments
Server Technology IP Address Changes	After changing the IP address on a Server Technology PDU, it may take up to a minute for the SNMP agent to come back online again following the change. This is a known issue.
Updating Server Technology PDU Firmware	When updating the v7.0 firmware for some Server Technology PDUs, the PDUs may lock up. This is a known issue.
Server Technology v7 PDU Firmware Upgrade Issue	There is a low probability that upgrading the firmware on a Server Technology CDU1 PDU using an ME network card and running v7 firmware may cause the PDUs to lose communication after the firmware upgrade. If this occurs, the bulk configuration report in Power IQ will show the following message: "Firmware update failed. Reason: Connectivity check timed out." To restore communication, the PDUs must undergo a hard reboot (power off/on).
Updating SysLocation and SysContact Information for Server Technology PDUs	The SysLocation and SysContact for a master Server Technology PDU can be updated via CSV import using either a record for the master PDU or PDUs linked to the master PDU. If the SysLocation and SysContact information for the master and linked PDUs do not match, the update may fail or the information may be incorrectly overwritten. To address this issue, the SysLocation and SysContact for the master PDUs and its linked PDUs should match.
Bulk Configuration for Server Technology PDUs	For Server Technology PDUs where the Sentry Power Manager password has been changed from the default password, bulk configuration updates via the Power IQ GUI may fail. To use any of the bulk configuration features with Server Technology PDUs, SPM Secure Access must be enabled on the PDUs with the default password. If a non-default SPM password has been set, then the password must be reset to the default password via the PDU GUI.
Enabling SNMPv3 on Server Technology Sentry Switched PDUs	If Power IQ is unable to communicate with Server Technology Sentry3 PDUs using SNMPv3, try enabled SNMPv2 on the PDU as well. While this shouldn't be required, we've observed that it may resolve the issue.

On Server Technology CDU1 PDUs running v7 firmware, Power IQ will generate an “Admin Credentials Invalid” event and display the PDU in a Warning state for the following reasons:

Server Technology
PDU Firmware
Version and X.509
Certificate Issues

- PDU Administrative Credentials are added to Power IQ but don't match those of a user account on the PDU
- PDU is running pre-v7.0m firmware
- PDU has an older X.509 certificate that was generated with an older encryption protocol that is no longer considered secure.

Before upgrading to Power IQ R6.2.x, Sunbird recommends upgrading all Server Technology CDU1 PDUs to v7.0m firmware or greater and generating a new certificate if the PDU has an older, incompatible X.509 certificate.

Raritan First
SmartLock Solution
(with EMKA Lock
and Without
Integrated Card
Reader) Automatic
Relock Timer
Events

Customers who are using the Raritan First SmartLock solution and have enabled the automatic relock timer in Power IQ may experience an issue with clearing contact sensor events in Power IQ. If the initial relock attempt fails, a subsequent successful relock attempt will fail to clear the sensor event Power IQ. This will cause the PDU to continue to display in the Critical health state, even if the door is locked. If this occurs, manually clear the event in the Events tab in Power IQ.

Raritan SmartLock
Enhance/Advance
Incompatibility
with Data Buffered
Mode

The Raritan SmartLock Enhance and Advance door lock solutions that use the DX2-DH2C2 controller report an incorrect state for the SmartLock Powered Dry Contact sensor when the PDU is running in data buffered mode. This issue exists in the PDU's 3.4.0 firmware. As such, the solution should not be used in data buffered mode until Raritan corrects the issue in a future firmware release. PDUs with older door controllers, such as the DX-D2C6 and DX-PD2C5 models, can be used in either polling or data buffered mode.

Card Reader Traps
and Maintenance
Mode

Power IQ does not process traps for facility items in maintenance mode. As a result, you may be unable to unlock the door on a rack if the controlling PDU is in maintenance mode. To avoid this known issue, you should not use maintenance mode and card reader access simultaneously.

Raritan PX2/PX3
Bulk Configuration
File Format
Support

Power IQ 6.1.1 provides support for the Raritan PX2/PX3 3.4.0 bulk configuration file format. Customers who have Raritan PDUs are strongly advised to upgrade to Power IQ 6.1.1 or higher to ensure that they can bulk configure their PDUs with this firmware version.

CC-SG Data Sync

To provide a more secure web experience, TLS 1.0 is disabled in Power IQ 5.2.2 and above. Due to this change, after upgrading Power IQ to Release 5.2.2, data sync to Raritan's CommandCenter® Secure Gateway (CC-SG) may fail. CC-SG doesn't support TLS 1.1 or later. A hotfix is available to address this issue. For more information or to obtain the hotfix, contact Sunbird Technical Support at tech@sunbirddcim.com or via the [Sunbird Support Portal](#).

APC Floor UPS
Support

In Power IQ 5.2.3 and earlier, certain APC Symmetra Floor UPSs were managed as Rack PDUs. Following the first poll upon upgrade to Release 6.1.1, the type for these facility items will

update from "Rack PDU" to "Floor UPS". As a result, customers managing APC Symmetra Floor UPSs in Power IQ may experience the following:

- **Increased license usage.** A Rack PDU requires one license, while a Floor UPS requires five licenses. For assistance with additional licenses, please contact Sunbird Technical Support.
- **Single-phase Floor UPSs misidentified with a third line/phase.** A single-phase Floor UPS with two lines that had been previously managed as a three-phase Rack PDU with three lines may be identified as retaining the third line when converted from a Rack PDU to a Floor UPS in Power IQ. To address this issue, decommission and then recommission the Floor UPS in Power IQ. Upon rediscovery, the Floor UPS will be correctly identified.

Door Control

Before configuring door control, ensure that the time on the server is set correctly. Otherwise, it can prevent Power IQ from accurately updating events, sensor states, and providing an accurate audit log.

As of January 1, 2017, Google will no longer support SHA-1 certificates in their browsers. For a period, other browsers, such as Firefox, will continue to allow them but will show them as untrusted connections or similar. They may eventually drop support for them.

In Power IQ, we've changed the default certificate that's generated on new installs to use SHA-256. Customers who are currently running SHA-1 certificates won't benefit from this change, as Power IQ doesn't override existing certificates. If you are still using a SHA-1 certificate, you should generate a new one and upload it to Power IQ.

SHA-1 Certificates in Web Browsers

Please refer to the following instructions on how to generate a certificate and upload it to Power IQ:

https://www.sunbirddcim.com/help/PowerIQ/v610/en/Default.htm#Power_IQ_Only/Security_and_Encryption.htm

Related Links

- **Google:** <https://security.googleblog.com/2015/12/an-update-on-sha-1-certificates-in.html>
- **Firefox:** <https://blog.mozilla.org/security/2015/10/20/continuing-to-phase-out-sha-1-certificates/>

CPI MIB IPv6 Address

The CPI MIB incorrectly lists the Primary IP address instead of the Alternate IP address for IPv6.

IP Address Filters on Event Notifications

We've enhanced IP address filters on Event Notifications to allow specific IP matches versus any IP starting with a given value. Going forward from Release 5.2, you can enter an asterisk (*) at the end of any IP address to match IPs starting with a value. On upgrade, we preserve existing suffix wildcard matching by automatically adding the asterisk when needed.

Netbotz Sensors

Following an upgrade to 5.2, Netbotz sensors may be decommissioned and recreated. If a sensor in the EDM hierarchy is decommissioned, the customer should re-place the desired Netbotz sensor back into the desired location in the EDM.

Raritan PX1 1.5.7 Firmware

There is an issue in the PX1 1.5.7 firmware that is not likely to be fixed since 1.5.7 is supposed to be the final release of the PX1 firmware. The PX1 is supposed to keep the MIB-II sysName and object instance (i.e., PDU Name) objects in sync. When setting sysName via SNMP (as PIQ does via an csv outlet renaming import), these two values will be out of sync until the SNMP agent is restarted or the PDU is rebooted.

Upgrades for Existing 4.x, 5.x, and 6.x Customers

The upgrade is free for customers with a valid software maintenance agreement. Use the Power IQ 6.2.2 software self-installing upgrade file named power-iq_6.2.2.x.bin.

Note: Power IQ Release 4.0.x systems with LDAP configured must have a valid email address for each user account prior to upgrading.

Upgrades for Existing 3.1.0 and 3.2.0 Customers

The upgrade is free for customers with a valid software maintenance agreement. The upgrade will require a new install.

Your current Power IQ configuration and data can be backed up and restored to the new 6.2.2 system. Use the Power IQ software file named power-iq-6.2.2.x.iso for a fresh install.

Where to Find the Software Files and Obtain Help

- **Find Software:** <https://support.sunbirdcim.com/>
- **Get Help:** tech@sunbirdcim.com
- **Sign Up for a Maintenance Contract:** Contact your reseller or sales@sunbirdcim.com

Browser Compatibility

- Chrome up to v68
- Mozilla Firefox up to v61
- Internet Explorer v11
- Microsoft Edge v40
- Safari v11.1

CC-SG Compatibility

- CC-SG up to and including v7.0

A patch is required to enable TLS1.0 on Power IQ using CC-SG v6.2.0 and earlier. See CC-SG Data Sync under the Addition Comments section above for more information.



About Sunbird

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