

Raritan® PX Firmware Version 1.5.7 (firmware version will be displayed as 01.05.07 in the GUI after an upgrade; build number on the *Device Information* page will be 11172)

Version: DPX 1.5.7- Build 11172 Release Notes, Revision 1

Date: March 4, 2013

Effective: Immediately.

Applicability:

This firmware release is the General Availability (GA) release for the listed in the Supported Models List posted on the Raritan website. Additional models may be tested after this release is available.

A PRE-REQUISITE for upgrading to PX1.5.7 is to be running PX1.5.4 or PX1.5.5. Therefore for firmware upgrades for all customers running releases older than 1.5.5, this is a two-step upgrade, i.e., first upgrade to 1.5.4 (Fence release) and then to 1.5.7.

Release 1.5.4 is an intermediate step in the upgrade to 1.5.7; it is referred to as a Fence release in the Upgrade Matrix (see section below). Release 1.5.4 is only used as a step to get to release PX1.5.7, it is NOT intended that customers will upgrade to 1.5.4 and stop.

Also, getting to the 1.5.x firmware (from 1.3.n or 1.4.n) codebase is a very significant upgrade to the internal firmware components, so it may take as long as 30 minutes. Read the detailed firmware upgrade instructions (below) before starting the upgrade process.

It is recommended that ALL customers upgrade to PX1.5.7 if at all possible.

Due to significant internal enhancements in PX 1.5.7, you cannot downgrade from Release 1.5.7 to ANY prior release.

For customers using CC-SG 5.0-5.2; note restrictions in Known Issues with Release 1.5.7 section below.

Release Status: General Availability (GA) on the models listed above with factory shipments, and the release will be posted to Raritan's website. **A PRE-REQUISITE for upgrading to PX1.5.7 is to be running PX1.5.4. You cannot upgrade to PX1.5.7 until you are running PX1.5.4. See the Upgrade Matrix below.**

Raritan PX Overview:

Raritan/Dominion PX refers to Raritan's family of intelligent power distribution units (iPDUs).

Release 1.5.7 contains all enhancements and fixes which are listed below:

- A) **FIXED:** Sources for SNMP timeouts possible with all older releases. These include "Lost comm" errors when using Power IQ. [47749, 47336, 47333, 46680, 46676]

- B) Support for FIPS140-2 when using HTTPS. When the PX is set to run in FIPS Mode, the OpenSSL Library that is FIPS-140-2 listed is used, thereby ensuring compliance with the FIPS140-2 standard. This does not mean that the PDU is FIPS approved, only that the encryption methods, OpenSSL library, and encryption used meets the FIPS-140-2 standard. Additionally, when operating in FIPS mode, certain functions, e.g., telnet is Disabled, and some other functions are restricted as well. See the PX1.5.7 User Guide for details. Also see the [Raritan PX Release 1.5.7 Compatibility Information](#) section (below) for details.
- C) Internal enhancements have been made to improve firmware upgrade reliability. As a result of these enhancements, it can take some units up to 30 minutes to upgrade – while all internal microcontrollers are upgraded to prevent certain potential errors from occurring.
- D) Humidity sensor accuracy fix – With releases prior to 1.5.5, it was possible that the Humidity sensors reading reported by the DPX-T3H1, and DPX-T2H2 would exceed the +/-5%RH accuracy limits. This has been fixed. [42469]
- E) FIXED: Outlet on/off event is not captured in the event log when the event is generated with an alert with that outlet on/off as destination. [16029]
- F) FIXED: Only when single the user login restriction is Enabled (which is not the default setting), an attempt to login by a second admin user when one admin user is logged in, may result in the first admin user being logged out. Therefore, it is strongly recommended that the single user limitation not be used in this firmware release (1.3.8); instead, assign users to different groups with appropriate access privileges. This limitation has been removed.
- G) FIXED: When defining alerts that include the "Current Outlet" and creating an alert that has nothing to do with the outlet (for example, temperature, humidity, On/Off, Unit, Line) and then using this policy that has "Current Outlet" operation selected, then the system may behave abnormally. The workaround was to NOT to select "Current Outlet" when creating a policy (leave unchecked). [35784]
- H) FIXED: Defining an alert(s) with an external sensor, and then changing the name of the sensor, and un-managing it will remove the alert. Sometimes the old alert policy is not deleted from the Alert policy file, and this may result in an "Internal Error" if the PX unit tries to execute an alert. The workaround was to delete all the alerts associated with the unmanaged sensor and add the alerts again.[35818]
- I) FIXED: For PX-3nnn (inline meters), when upgrading or installing the lines, it is required that you install the first line (Line 1) first to the AC mains. If this is not done, then the LED display will show CBE (because no voltage or current is detected on Line 1). Connecting Line 1 to the AC mains will resolve this issue. This is fixed. Furthermore, the electrician installing the PX-3nnn must use their own electrical meter or other tools to verify the presence or absence of Voltage and not rely on the PX-3nnn LED display.
- J) Added functionality to configure Temp and Humidity sensor alerts via SNMP. The 1.5.5 MIB was updated as well. [40632]
- K) FIXED: When using a Differential Air Pressure sensor, the maximum altitude that can be entered in the GUI was 9144, while it should allow have allowed 9842 feet. [40549]

- L) When using Firefox version 17 and Internet Explorer 9.0 to access the GUI, the *Cycle* button is not greyed out when the outlet is off. Even though the *Cycle* button is not greyed out when the outlet is off, the button is not functional because when the outlet is in this state (OFF), *Cycle* is not an option. [48417]

Consult the PX 1.5 User Guide posted on the Raritan website for more information on these PX features.

Raritan PX Documentation:

The following user documentation is available for the Raritan PX:

The latest English language User Guide for PX1.5 (PDF format) should be used with this release; it is available from Raritan’s website via a hyperlink from the GUI.

Not Supported with the Raritan PX 1.5.7:

ALL PX models with part number beginning with PX2-nnnn, and all PX-1000, PX-2000, and PXE series models are NOT supported by this release. See the PX2.n release for these models.

Some custom PX models may not be supported by this release. Please contact Raritan Support to see if your Custom model is supported in this release.

See “Dominion PX Release Compatibility Information” or Known Issues (below) for restrictions.

Upgrade Matrix (path for upgrades):

The MINIMUM release versions required to upgrade to 1.5.7 is 1.5.4 or 1.5.5. If you are running a release OLDER than PX 1.5.0 (examples: 1.0.n, 1.1.n, 1.2.n, 1.3.n – where n<5), please contact Raritan Support on how to get the PX to 1.5.4 BEFORE attempting to upgrade the unit to PX1.5.7.

Please note caution about sensor alerts (#4 in the Release 1.5.7 Compatibility section below). PX1.5.4 is a just a Fence (intermediate) release.

Upgrade paths to PX firmware release 1.5.7

Starting firmware release	Upgrade to Fence Release	Upgrade to Final release	Comments
Pre - 1.3.5	See comments	See comments	Contact Raritan Support
1.3.X (where X>=5); examples 1.3.5, 1.3.12, etc.)	1.5.4	1.5.7	No need to disconnect serial port.
1.4.1	1.5.4	1.5.7	No need to disconnect

			serial port.
1.5.0	1.5.4	1.5.7	Must disconnect anything plugged into the serial port
1.5.2	1.5.4	1.5.7	Must disconnect anything plugged into the serial port
1.5.4	Not applicable	1.5.7	No need to disconnect serial port.
1.5.5	Not applicable	1.5.7	Must disconnect anything plugged into the serial port

Raritan PX Release 1.5.7 Compatibility Information:

1. KSX (G1) units do not support the DPX.
2. Upgrade Matrix: See IMPORTANT note under Upgrade Matrix above BEFORE upgrading firmware on any unit.
3. KX2-101 does not support the PX-3370. [26152]
4. For customers who have configured alerts when using environmental sensors with any previous PX release (release number less than 1.4.0), when upgrading to PX1.5.0 or higher, the sensor alerts must be deleted, and then re-entered AFTER the PX1.5.n firmware upgrade- otherwise the wrong alerts will be sent, because IPMI sensor numbers are changed internally.[32228]
5. When operating in FIPS Mode (an option available in PX1.5.5 or higher only), CC-SG version lower than 5.3) cannot support the PX. Removing this restriction will require a new CC-SG Release (version 5.3 or higher).[41866, 41965]

Important Notes and Information:

- A) Enable Javascript in your browser before logging into the unit to start the upgrade process.
- B) When the firmware upgrade is complete, check the firmware version on the Home page in the left panel – it should show “Firmware 01.05.07” after the upgrade. This is the displayed designation for the Raritan PX firmware release 1.5.7.
- C) When a customer wants to restart or upgrade a PX device from Command Center Secure Gateway (CC-SG) the following steps must be followed for proper operation:
 - a. Pause managing the device.
 - b. Restart/Upgrade PX.
 - c. When PX is fully booted, resume managing the device. [FCR15440, 12777, 12807]
- D) For customers who have configured alerts when using environmental sensors with any previous PX release (release number lower than 1.4.0), when upgrading to PX1.5.x, the

sensor alerts must be deleted, and then re-entered AFTER the PX1.5.x firmware upgrade- otherwise the wrong alerts will be sent, because IPMI sensor numbers are changed internally.[32228]

- E) When upgrading non-switched units, part numbers PX-4nnn, there may be virtual device event in the event log, however the unit will upgrade and perform correctly. This will be addressed in a future release.

Known Issues with DPX Release 1.5.7:

1. When adding a PX running PX1.5.0 through 1.5.7 firmware to CC-SG 5.0-5.2, the user may see a warning that this release is not supported, please ignore and override this message, because the PX 1.5.0 through 1.5.7 functions correctly with CC-SG5.x. In a future CC-SG release, this warning message will be removed.
2. When a customer wants to restart or upgrade a PX device from CC-SG the following steps must be followed for proper operation:
 - a. Pause managing the device.
 - b. Restart/Upgrade PX.
 - c. When PX is fully booted, resume managing the device. [FCR15440, 12777, 12807]
3. PX slows down when the SMTP server is not reachable. This is observed when the PX and the SMTP servers are in different subnets. This will be addressed in a future release. [16028]
4. When the current loading is close to, or smaller than, 0.1A, the Power Factor always shows something (e.g., 0.208), but RMS current shows "0". This issue will be resolved in a future release.
5. When setting thresholds, the real IPMI sensor data is shown for thresholds, so it is possible that some values – 10.0A cannot be set for a threshold, a value of 9.97A may show when the threshold value is set to 10.0A. This is due to the enhanced accuracy encoding used internally in IPMI.
6. Minimum power-on delay displayed by IPMI is greater than one second. The GUI will display and allow values to be less than one second.
7. Unable to uncheck (disable) Eventlog assignments when more than one Eventlog targets are selected. A workaround is to Enable syslog forwarding, uncheck all checkboxes and Apply to save changes. Now you can select/deselect the checkboxes for local event logging. This behavior is not observed for SMTP or NFS logging. This is observed only with Syslog.
8. The unit of power factor is still "null". PowerFactor in IPMI is no longer percentage data type, but it says "null" not "ratio". PowerFactor should have a ratio data-type, not a percentage data type in IPMI. This issue is expected to be resolved in a future release. [13667]
9. When terminating the web browser GUI session, the user should logout of the unit using the Logout button, and NOT close the session by clicking on the Close window (X) button on the top right hand corner. When this is not done, then the user session will

remain open and appear in the Active Sessions panel until the Inactivity Timer expires. Therefore, it is highly recommended that the inactivity timer be set to a small number of minutes, for example 5-10 minutes. [15986]

10. Using PX build PX-1.0.3.0.1.7393 through PX 1.5.7, no entries will be added to a NFS Server new log file if an NFS log file was previously created on the PX. Even though the new log file was mounted successfully no entries will be added to either the old or the new log file. Restart the PX unit and then log file entries will be correctly added to the new file. [18411]
 11. The Username and Password cannot be modified for an Outlet Group Device using the modify option (button) on the Outlet Group Device Page. Although a "Device Modified Successfully" message is displayed, the entry in the Access User column for the Outlet Group Device (PX) remains the same. According to PX documentation the Outlet Group Device name and username and password for that Outlet Group Device can be modified. As a workaround, the Outlet Group Device data (Group Device name and username and password) can be deleted and new data entered. [18686]
- NOTE: Navigating away from the Outlet Group Device Page and navigating back does not update Access User column.
12. When performing user management functions such as creating, modify, delete users, the SNMP events of user management events always come with "coldstart" events. [19070]
 13. The PX Outlet Critical threshold can be set to a condition where no threshold error messages are displayed - this is caused by pressing the <Enter> key instead of pressing the Apply button. The invalid threshold value is not set in the threshold box. If the Apply button is press instead of the <Enter> key, then an error message is generated with the invalid threshold value (the invalid threshold value is not set in the threshold box). [20557]
 14. The following fields are marked deprecated in the MIB, and should not be used; if used GUI will show "0" value for line voltage thresholds. The deprecated fields are: "unitVoltageLowerWarning" "unitVoltageupperWarning", "unitVoltageLowerCritical", "unitVoltageUpperCritical". These fields will be removed from the MIB in a future version of the firmware.[24865]
 15. When unbalanced loads are enabled, with unbalanced alerts configured, switching an outlet with loading off/on will cause the PX to respond slowly after switching an outlet on/off, the home page will show all outlets have failed, and all line currents and external sensors, will show incorrect values. This home page will be updated in about 10 seconds, and will show the correct outlet state, line current, and external sensors values. [24942]
 16. The following SNMP commands 'unitVoltageLowerCritical', 'unitVoltageUpperWarning', 'unitVoltageLowerWarning' and 'unitVoltageUpperCritical' are deprecated. Right click on these commands and look for properties. Instead, the following commands should be used 'unitOrLineVoltageLowerWarning', 'unitOrLineVoltageLowerCritical', 'unitOrLineVoltageUpperWarning', 'unitOrLineVoltageUpperCritical' instead. [25219]

17. When a multi-line inline meter (PX-3000 series) is connected with no loads on some of the lines, it will show some active energy accumulating on the unconnected line at the rate of about one (1) Watt per hour. Active power, RMS current, and Power Factor will show no readings; this is normal. [26849]
18. When using SNMP, for any single-phase inline meters (PX-3000 series), there is a one-to-one correspondence between inlets and outlets, therefore the outlet table is re-used; consequently the following Inlet tables should NOT be used for ALL inline meters: lineVoltageTable, lineCurrentTable, and dataLogInputLineTable. Instead, use the outletTable and dataLogOutletTables. [24599]
19. After enabling strong passwords, when the admin user logs in again, the "password change screen" does not come up; however, when strong passwords are disabled and the admin user logs in, this screen appears. This will be fixed in a future release. [31412]
20. For customers who have configured alerts when using environmental sensors with any previous PX release (release number less than 1.4.0, e.g., 1.3.5), when upgrading to PX1.5.x, the sensor alerts must be deleted, and then re-entered AFTER the PX1.5.x firmware upgrade- otherwise the wrong alerts will be sent, because IPMI sensor numbers are changed internally.[32228]
21. When loading an LDAP certificate, if an incorrect certificate is entered, followed by the correct certificate, the PX unit needs to be restarted (reset) for it to take effect. This can be done from the GUI or from the reset pinhole. The reset does not affect power to the outlets, and it does not change the state of the outlet. If the correct certificate is entered the first time, then no reset is required. [40590]
22. The webserver security certificate on the PX expired on 14 November, a 2011. A new certificate is included in the PX 1.5.2 and higher releases. [41133]
23. When a PDU is switched between a static IP address, back to DHCP, the Primary Time Server field is not updated automatically with the DHCP NTP Server IP address after changing the Network Settings to DHCP when the "Use NTP Servers provided by DHCP/BOOTP" had been previously enabled.[40649]
24. When using SMASH-CLP, base Unit (meters) and Rate Units (Feet per second) are not mapped for Air Flow sensor.[40570]
25. The standard IPMItool supports a maximum of 127 alerts, but Raritan has extended IPMI to support up to 255 alerts. The user will have to compile an IPMItool version to handle alerts >127.[41996]
26. On some models it is possible that when the Voltage is less than 7% below nominal or lower, the unit will show a CBE (and the unit will beep) due to the low Voltage condition. When the Voltage rises above this threshold the alarm would automatically clear. This is due to limitations in IPMI. [45731]
27. When using Firefox version 17 and Internet Explorer 9.0, the web GUI when the outlets are off, the Cycle button is not greyed out, although in this outlet state (OFF), cycling an outlet is not possible. [48417]

Release Package Details:

The Release 1.5.7 package for the Dominion PX series has the following components. Note that if the release status is Generally Available (GA) the binary file is posted as a Zip file under firmware upgrades on Raritan's website. Some releases are not posted and are intended for specific new models only. If posted, the file is zipped and must be unzipped before it can be installed on the Dominion PX unit:

"DPXReleaseNotes1_5_7v1" – this file

A firmware release (binary):

fw-kira-rpc-pdu-raritan_010507-11172-WUB.bin

Firmware Upgrade Pre-requisites:

If you have any questions, or cannot follow the instructions below, please STOP and contact Raritan Technical Support for further instructions. Please read the entire instructions (this document) before proceeding.

General Upgrade Instructions (standalone upgrade from the browser based user interface):

1. Ensure no users are logged in; nor are there any active sessions – besides the current admin session.
2. The user upgrading the PX device must be a member of the default Admin Group to have sufficient administrator-level privileges to update the Dominion PX unit.
3. Five to ten minutes are required for the complete update procedure for most units; however, in some cases, with older firmware, the upgrade may take up to 30 minutes. The update and subsequent reboot time will vary according to the number of outlets in the unit.
4. Upgrade the PX unit using a wired network only. Loss of packets/dropouts over a wireless network may result in a failed upgrade.
5. If doing the firmware upgrade over a VPN, ensure that the connection is stable and that no inactivity timeouts have been set.
6. The detailed, step-by-step instructions to perform the upgrade are given below.
7. The software upgrades are written to flash memory, and this takes time to complete. Please do not power-off the unit, or disconnect the Ethernet connection, while the upgrade is going on.
8. **Enable Javascript in your browser.**
9. Save the firmware upgrade file on a local or network accessible directory. Unzip the file and save it in an accessible directory.

10. Should you experience any difficulties with the upgrade, call Raritan Technical Support for assistance.

Step-by-Step Upgrade Instructions:

Unless otherwise instructed, PowerIQ customers should follow instructions that come with PowerIQ to upgrade PX units.

1. Please ensure that no users are logged into the unit. Note that the upgrade will not interrupt power to the outlets; nor will it change the state of the outlet – outlets that are “on” will remain “on”; similarly, outlets that are “off” will remain “off” – both during the firmware upgrade and following the (software) reset to load the new firmware into the unit.
2. In Mozilla Firefox, Internet Explorer (or other supported web browser), type in the IP address of your Dominion PX unit, and wait for the web-based interface to load.
3. Logon as an administrative user “admin” (or other member of the Admin Group with firmware upgrade privilege enabled).
4. **Click on the “Unit Reset” command under the “Maintenance” tab. This will free used internal memory, and clear internal debug log files to ensure a smooth upgrade. The delay between a Unit Reset, and a firmware upgrade, should be kept to less than 10 minutes. Failure to follow this instruction may result in an upgrade failure on some units. Note that this step is not required for PowerIQ Release 1.3.1 or higher.**
5. **Note that this step is not required for PowerIQ Release 1.3.1 or higher.** When asked to confirm with a “Reset Device” prompt, click on the “Reset” button. Another prompt to “Really reset” will be presented, click on the “Reset” button. Once the device resets – this will take about one (1) minute – and you will be logged out and taken to the Login page. Login again, with your admin username and password. Note that the Reset will NOT change any outlet states – outlets will maintain their previous state; outlets that are ON will remain ON, and outlets that are OFF, will remain OFF.
6. Click on the “Update Firmware” command under the “Maintenance” tab.
7. Browse to locate the **.bin** file containing the update: **fw-kira-rpc-pdu-raritan_010507-nnnn-WUB.bin** (Note: this has to be an UNzipped file; nnnn is a 4- or 5-digit number).

The full path name might look as in the example below (the file path on your system may differ):

“C:\Documents and Settings\user\My Documents\My Downloads\ fw-kira-rpc-pdu-raritan_010507-nnnn-WUB.bin” (where nnnn is a 4- or 5-digit number).

Click the “Upload” button.

The current firmware, and future (after the upgrade) firmware versions, will be displayed. Click the “Upgrade” button **ONCE** to start the upgrade.

8. The firmware upgrade will then proceed:

a. Other users cannot operate the PX during the upgrade; however, power is NOT interrupted to any outlets.

b. This upgrade step will take 4-30 minutes, depending on how many outlets are in the unit. A unit with more outlets will take longer than a unit with fewer outlets.

DO NOT REBOOT, RESET, OR POWER CYCLE THE PX DURING THE UPGRADE OR THE CONSEQUENT RESTART!

c. When the upgrade is completed, the admin user will be logged off.

9. The Raritan PX unit will now reboot and reset, which may take up 4-5 minutes.

10. The user will be taken back to the Login page when the upgrade is completed. IF, and only if, you are not seeing the login page after more than 30 minutes, close ALL web browser sessions, and log back in after the reset completes. (Hint: You may have Javascript disabled; please enable it). In firmware version less than 1.5.7, when the system reboots after firmware upgrade, you will see a “page not found” error before login page shows up.

Please do not reset the unit when webpage error shows up because the firmware update is still in progress. Allow 30 minutes for firmware upgrade to complete and the login page to appear.

If the unit does not respond even after 60 minutes after firmware update is initiated, please reset the unit vial pinhole reset button. This should recover the unit.

11. When the firmware upgrade is complete, check the firmware version on the Home page in the left panel – it should show “Firmware 01.05.nn” after the upgrade – where nn is a two-digit number.

12. Due to improvements in PX 1.5.7, you cannot downgrade the firmware from Release 1.5.7 to any previous release.

13. Also, due to internal enhancements in PX 1.5.7, you cannot downgrade the new models (not previously supported) from Release 1.5.7 to any previous release.

14. If you have any questions or issues during the update, call Raritan Technical Support for assistance.

DPX 1.5.7 Build 11172 Release Notes, Revision 1

March 4, 2013

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