

## Raritan PXE

### Quick Setup Guide

Thank you for purchasing the Raritan PXE intelligent power distribution unit (PDU).

The intended use of the PXE is distribution of power to information technology equipment such as computers and communication equipment where such equipment is typically mounted in an equipment rack located in an information technology equipment room.

This Quick Setup Guide explains how to install and configure the PXE. For further details on using the PXE, access online help from the application, or download the user guide from the Raritan website's **Support page** (<http://www.raritan.com/support/>). For more detailed information on this release, see the latest release notes on the Support page.

### Safety Precautions

**WARNING!** Read and understand all sections in this guide before installing or operating this product. Failure to heed any of the following WARNINGS may result in electric shock, fire, personal injury and death. Prior to operating this product, the user should read the online help and specifically the warnings in the online help.

**WARNING!** Connect this product to an AC power source whose voltage is within the range specified on the product's nameplate.

**WARNING!** Connect this product to an AC power source that is current limited by a suitably rated fuse or circuit breaker in accordance with national and local electrical codes.

**WARNING!** Use this product in a dry location.

**WARNING!** Connect this product to a protective earth ground. Never use a "ground lift adaptor" between the product's plug and the wall receptacle.

**WARNING!** If this product is a model that requires assembly of its line cord or plug, all such assembly must be performed by a licensed electrician and the line cord or plugs used must be suitably rated based on the product's nameplate ratings and national and local electrical codes.

### Unpacking the PXE

The PXE comes in Zero U and 1U sizes. The following describes the equipment shipped with each size. Unpack the components. If any pieces are missing or damaged, report this to Raritan Technical Support at [tech@raritan.com](mailto:tech@raritan.com), or contact the Raritan partner where you purchased the product.

#### Zero U Size

- The PXE device
- Mounting screws, brackets and/or buttons
- Cable retention clips for outlets (optional)

#### 1U Size

- The PXE device
- Mounting screws, brackets and/or buttons

### Before You Begin

1. Prepare the installation site. Make sure the installation area is clean and not exposed to extreme temperatures or humidity. Allow sufficient space around the device for cabling and outlet connections. Safety instructions are provided in the PXE Online Help.
2. Fill out the Equipment Setup Worksheet found in the PXE Online Help. Record the model, serial number, and use of each IT device connected to the PDU's power outlets.

### Mounting the PXE

Use one of the mounting methods to install your PXE device as appropriate.

#### Circuit Breaker Orientation Limitation

Usually a PDU can be mounted in any orientation. However, when mounting a PDU with circuit breakers, you must obey these rules:

- Circuit breakers CANNOT face down. For example, do not horizontally mount a Zero U PDU with circuit breakers on the ceiling.
- If a rack is subject to shock in environments such as boats or airplanes, the PDU CANNOT be mounted upside down. If installed upside down, shock stress reduces the trip point by 10%.

Note: If normally the line cord is down, upside down means the line cord is up.

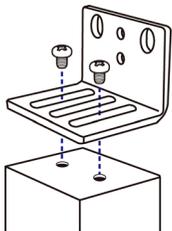
### Mounting 1U Models Using L-Brackets and Buttons

This section describes how to mount a 1U PXE device using L-brackets and two buttons.



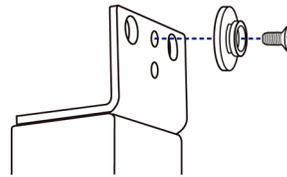
#### ► To mount 1U models using L-brackets and two buttons:

1. Align the two edge slots of the L-bracket with the two screw holes on the top of the PXE device.
2. Screw the L-bracket to the device and ensure the bracket is fastened securely.



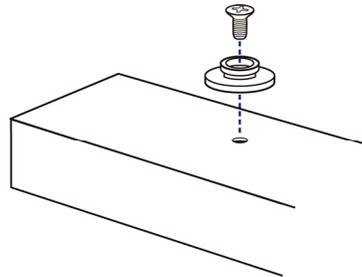
3. Repeat Steps 1 to 2 to screw another L-bracket to the bottom of the device.
4. After both L-brackets are installed, you can choose either of the following ways to mount the device in the rack.
  - Using rack screws, fasten the device to the rack through two identical holes near the edge of each L-bracket.

- Mount the device by screwing a mounting button in the back center of each L-bracket and then having both buttons engage the mounting holes in the rack. The recommended torque for the button is 1.96 N·m (20 kgf·cm).



### Mounting Zero U Models Using Buttons

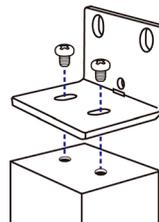
1. Turn to the rear of the PDU.
2. Locate the two screw holes on the rear panel.
3. Screw a button in each screw hole. The recommended torque for the button is 1.96 N·m (20 kgf·cm).



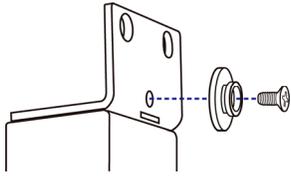
4. Press the PXE device forward, pushing the mounting buttons through the mounting holes, then letting the device drop slightly.

### Mounting Zero U Models Using L-Brackets and Buttons

1. Fasten the L-bracket to each end of the PXE device.



2. Choose either of the following ways to fasten the PDU to the rack.
  - Attach the rack screws to the two rackmount holes of each L-bracket.
  - Screw a mounting button in the back center of each L-bracket and then have both buttons engage the mounting holes in the rack. The recommended torque for the button is 1.96 N·m (20 kgf·cm).



## Connecting the PXE to a Power Source

The distance between a PDU and its power source must be SHORTER than the PDU's line cord to avoid stretching out the cord. A locking connector used at the power source is highly recommended for a secure connection.

### ▶ To connect a PDU to the power source:

1. Verify that all circuit breakers on the PXE device are set to ON. If not, turn them ON.

Or make sure that all fuses are inserted and seated properly. If there are any fuse covers, ensure that they are closed.

Note: Not all PXE devices have overcurrent protection mechanisms.

2. Connect each PXE to an appropriately rated branch circuit. See the label or nameplate affixed to your PXE for appropriate input ratings or range of ratings.
3. When a PXE device powers up, it proceeds with the power-on self test and software loading for a few moments.
4. When the software has completed loading, the LED display illuminates and shows numeric digits.

## Connecting the PXE to Your Network

To remotely administer the PXE, you must connect the PXE to your local area network (LAN).

### ▶ To make a wired connection:

1. Connect a standard network patch cable to the ETHERNET port on the PXE.
2. Connect the other end of the cable to your LAN.

## Initial Network Configuration

Depending on your networking environment, the best method to initially configure your PXE differs.

- For a DHCP IPv4 networking environment, see **Using a Web Browser** (on page 3).
- For an IPv6 or "static" IPv4 networking environment, see **Appendix A: Configuration via a Connected Computer** (on page 4).

## Using a Web Browser

Initial configuration using a web browser involves these two steps.

**Step 1: Retrieve the IP Address** (on page 3)

**Step 2: Log in to the PXE Web Interface** (on page 3)

### Step 1: Retrieve the IP Address

After connecting to a DHCP IPv4 network, an IPv4 address is automatically assigned to your PXE. The IP address is available in the command line interface (CLI).

### ▶ To retrieve the IP address:

1. Connect the PXE to a computer via a USB cable. See **Step 2: Connect the PXE to a Computer** (on page 5).
2. On the computer, open a communications program with appropriate COM port settings. For COM port settings, see step 2 in the section titled **Step 3: Configure the PXE via CLI (Optional)** (on page 5).
3. Press Enter in the communications program, and the IP address is displayed onscreen as illustrated below.

```

Login for PX2 CLI (192.168.84.30)
Enter 'unlock' to unlock a user.
Username: █
    
```

Note: The DHCP-assigned IP address can be also retrieved through the MAC address. You can contact your LAN administrator for assistance. See **MAC Address** (on page 6).

### Step 2: Log in to the PXE Web Interface

The PXE supports common web browsers, including Microsoft Internet Explorer® and Mozilla Firefox®.

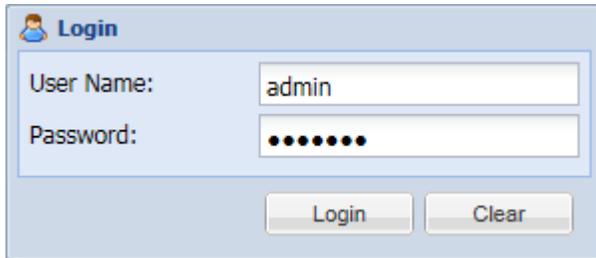
### ▶ To access the PXE web interface:

1. Open a web browser and type the IP address of the PXE device.
  - If the link-local addressing has been enabled, you can type *pdu.local* instead of an IP address. See **Appendix A: Configuration via a Connected Computer** (on page 4).

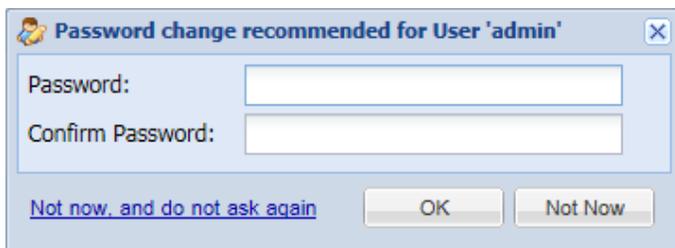


2. Accept any security warnings that may appear.

3. Type the default user name "admin" and password "raritan." Then click Login.



4. When prompted to change the password, change or ignore it.



- To change it, type the new password and click OK.
- To ignore it for this time only, click Not Now.
- To ignore it permanently, click "Not now, and do not ask again."

## What To Do Next

1. Connect IT equipment to the outlet(s) on the PXE.
2. Launch the web browser if not yet. See **Step 2: Log in to the PXE Web Interface** (on page 3).
3. Choose Device Settings > Date/Time to configure the PXE with the proper date and time or synchronize it with an NTP server. The PXE device's time must be in sync with the LDAP server to use LDAP authentication.

Note: If you are using Sunbird's Power IQ to manage the PXE, you must configure Power IQ and the PXE to have the same date/time or NTP settings.

4. Use the menu at the top to configure user profiles, privileges, security, or network settings.

Note: Detailed instructions are available in the **User Guide or Online Help**.

## Appendix A: Configuration via a Connected Computer

To use the command line interface (CLI) for configuration, make a USB connection to the computer.

To use a web browser for configuration, make a network connection to the computer. The PXE is automatically

configured with the following link-local addressing in any network without DHCP available:

- `https://169.254.x.x` (where x is a number)
- `https://pdu.local`

### Step 1: Install the USB-to-Serial Driver (Optional)

The PXE can emulate a USB-to-serial converter over a USB connection. A USB-to-serial driver named "Dominion PX2 Serial Console" is required for Microsoft® Windows® operating systems.

Download the USB serial console driver from the Raritan website's **Support page** (<http://www.raritan.com/support/>). The driver contains the `dominion-serial.inf`, `dominion-serial.cat` and `dominion-serial-setup-<n>.exe` files.

Note: <n> in the filename of "dominion-serial-setup-<n>.exe" represents the file's version number.

There are two ways to install this driver: automatic and manual installation. Automatic driver installation is highly recommended.

#### ► Automatic driver installation in Windows®:

1. Make sure the PXE is NOT connected to the computer via a USB cable.
2. Run `dominion-serial-setup-<n>.exe` on the computer and follow online instructions to install the driver.

Note: If any Windows security warning appears, accept it to continue the installation.

3. Connect the PXE to the computer via a USB cable. The driver is automatically installed.

Note: Manually install the driver only if the automatic installation fails. See the section titled "Installing the USB-to-Serial Driver (Optional)" in the online help for manual installation procedure.

#### ► In Linux:

No additional drivers are required, but you must provide the name of the tty device, which can be found in the output of the "dmesg" after connecting the PXE to the computer. Usually the tty device is `"/dev/ttyACM#" or "/dev/ttyUSB#,"` where # is an integer number.

For example, if you are using the kermit terminal program, and the tty device is `"/dev/ttyACM0,"` perform the following commands:

```
> set line /dev/ttyACM0
```

```
> connect
```

## Step 2: Connect the PXE to a Computer

Note that a network connection to the computer prevents the PXE from connecting to the network during the configuration.

### ► USB connection:

1. If you are using a Windows computer, make sure a USB-to-serial driver has been installed. See **Step 1: Install the USB-to-Serial Driver (Optional)** (on page 4).
2. Connect a USB cable between the PXE device's USB-B port and a computer's USB-A port.
3. Perform **Step 3: Configure the PXE via CLI (Optional)** (on page 5).

### ► Direct network connection:

1. Connect one end of a standard network patch cable to the ETHERNET port of the PXE.
2. Connect the other end to a computer's Ethernet port.
3. On the connected computer, launch a web browser to access the PXE, using either link-local addressing: `pdu.local` or `169.254.x.x`. See **Using a Web Browser** (on page 3). You CANNOT use the CLI for this connection.

Note: Make sure the computer's wireless interface is disabled.

## Step 3: Configure the PXE via CLI (Optional)

You perform the following over a **USB** connection only.

### ► To configure the PXE via CLI:

1. On the computer connected to the PXE, open a communications program such as HyperTerminal or PuTTY.
2. Select the appropriate COM port, and set the following port settings:
  - Bits per second = 115200 (115.2Kbps)
  - Data bits = 8
  - Stop bits = 1
  - Parity = None
  - Flow control = None

Tip: For a USB connection, you can determine the COM port by choosing Control Panel > System > Hardware > Device Manager, and locating the "Dominion PX2 Serial Console" under the Ports group.

3. In the communications program, press Enter to send a carriage return to the PXE.
4. The PXE prompts you to log in. Both user name and password are case sensitive.
  - a. Username: `admin`
  - b. Password: `raritan` (or a new password if you have changed it).

5. If prompted to change the default password, change or ignore it.
  - To change it, follow onscreen instructions to type your new password.
  - To ignore it, simply press Enter.
6. The # prompt appears.
7. Type `config` and press Enter.
8. To configure network settings, type appropriate commands and press Enter. All commands are case sensitive.
  - a. The default networking mode is the "wired" mode. Do not change this mode.
  - b. Configure the LAN interface settings. In most scenarios, the default setting (auto) works well and should not be changed unless required.

To set	Use this command
LAN interface speed	<code>network interface LANInterfaceSpeed &lt;option&gt;</code>  <code>&lt;option&gt; = auto, 10Mbps, or 100Mbps.</code>
LAN interface duplex mode	<code>network interface LANInterfaceDuplexMode &lt;mode&gt;</code>  <code>&lt;mode&gt; = half, full or auto.</code>

Tip: You can combine multiple commands to configure multiple parameters at a time. For example,  
`network interface LANInterfaceSpeed <option>`  
`LANInterfaceDuplexMode <mode>`

- c. To determine which IP protocol (IPv4 or IPv6) is enabled and which IP address (IPv4 or IPv6) returned by the DNS server is used, configure the following parameters.

To set	Use this command
IP protocol	<code>network ip proto &lt;protocol&gt;</code>  <code>&lt;protocol&gt; = v4Only, v6Only or both</code>
IP address returned by the DNS server	<code>network ip dnsResolverPreference &lt;resolver&gt;</code>  <code>&lt;resolver&gt; = preferV4 or preferV6</code>

- d. After enabling the IPv4 or IPv6 protocol in the earlier step, configure the IPv4 or IPv6 network parameters.

To set	Use this command
IPv4 configuration method	<code>network ipv4 ipConfigurationMode &lt;mode&gt;</code>  <code>&lt;mode&gt; = dhcp (default) or static</code>

To set	Use this command
IPv6 configuration method	<pre>network ipv6 ipConfigurationMode &lt;mode&gt;</pre> <p>&lt;mode&gt; = <i>automatic</i> (default) or <i>static</i></p>

- Configure the preferred host name for the IPv4 DHCP or IPv6 automatic configuration.

Note: The <version> variable in all of the following commands is either *ipv4* or *ipv6*, depending on the type of the IP protocol you have enabled.

To set	Use this command
Preferred host name (optional)	<pre>network &lt;version&gt; preferredHostName &lt;name&gt;</pre> <p>&lt;name&gt; = preferred host name</p>

Tip: To override the DHCP-assigned DNS servers with those you specify manually, type this command:

```
network <version> overrideDNS <option>
```

where <option> is *enable* or *disable*. See the table below for the commands for manually specifying DNS servers.

- For static IP configuration, configure these parameters.

To set	Use this command
Static IPv4 or IPv6 address	<pre>network &lt;version&gt; ipAddress &lt;ip address&gt;</pre> <p>&lt;ip address&gt; = static IP address</p>
IPv4 subnet mask	<pre>network ipv4 subnetMask &lt;netmask&gt;</pre> <p>&lt;netmask&gt; = subnet mask</p>
IPv4 or IPv6 gateway	<pre>network &lt;version&gt; gateway &lt;ip address&gt;</pre> <p>&lt;ip address&gt; = gateway's IP address</p>
IPv4 or IPv6 primary DNS server	<pre>network &lt;version&gt; primaryDNSServer &lt;ip address&gt;</pre> <p>&lt;ip address&gt; = IP address of the primary DNS server</p>

To set	Use this command
IPv4 or IPv6 secondary DNS server (optional)	<pre>network &lt;version&gt; secondaryDNSServer &lt;ip address&gt;</pre> <p>&lt;ip address&gt; = IP address of the secondary DNS server</p>

- To quit the configuration mode, type either of the following commands, and press Enter.

Command	Description
apply	Save all configuration changes and exit.
cancel	Abort all configuration changes and exit.

The # prompt appears, indicating that you have quit the configuration mode.

- To verify whether all settings are correct, type the following commands one by one.

Command	Description
show network	Show network parameters.
show network ip all	Show all IP configuration parameters.

If all are correct, type *exit* to log out of the PXE. If any are incorrect, repeat Steps 7 to 10 to change network settings.

## Appendix B: Other Information

### MAC Address

A label is affixed to the PXE, showing both the serial number and MAC address.



If necessary, you can find its IP address through the MAC address by using commonly-used network tools. Contact your LAN administrator for assistance.

### Additional Information

For more information about PXE and the entire Raritan product line, see Raritan's website ([www.raritan.com](http://www.raritan.com)). For technical issues, contact Raritan Technical Support. See the Contact Support page in the Support section on Raritan's website for technical support contact information worldwide.

Raritan's products use code licensed under the GPL and LGPL. You can request a copy of the open source code. For details, see the Open Source Software Statement at (<http://www.raritan.com/about/legal-statements/open-source-software-statement/>) on Raritan's website.