

Intelligent PDU Web Interface

PDU31xxx

PDU41xxx

PDU71xxx

PDU81xxx



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1. Introduction

1.1 Brief Introduction to the Web Interface

CyberPower's Intelligent Power Distribution Unit (PDU) Web Interface gives users all the features they need to configure, manage, and monitor the Intelligent PDU Series via a Web browser. With this easy-to-navigate interface, users can perform real-time monitoring of each outlet, control individual outlet, set power alerts, and complete many other tasks in an intuitive manner.

1.2 How to Log in

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1. Open a Web browser.
2. Enter the IP address of the CyberPower PDU in the Browser Address Bar, and then press ENTER.
Note: To look up the IP address, please refer to the LCD screen of the PDU.
3. Enter the information for the User **Name** and **Password** fields.
There are two types of user accounts.

Account Type	Default User Name	Default Password	Authorization
Administrator	cyber	cyber	View, access, and control all settings.
Viewer	device	cyber	View all settings.

4. Click **LOGIN** to open the [Summary Tab](#).

1.3 General Settings

These are the basic settings for the PDU.

1.3.1 Date and Time Settings

The date and time can be set manually or synchronized with a Network Time Protocol (NTP) server. All time-related configurations are based on this setting. See **System Tab > General > Time**.

System Tab > General > Time

PDU Remote Management

Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | Log | System | Help

General
 Time
 Identification
 Daylight Saving Time
 Security
 Network Service
 Notification
 Reset/Reboot
 About

Time

Current Settings

Time	2017/07/25 Tuesday & 16:15:28
Status	Update from manual input.
Next NTP Update	

System Time Configuration

Time Zone	<input type="text" value="GMT+08:00"/>
Date Format	<input type="text" value="yyyy/mm/dd"/>
<input type="radio"/> Using NTP Server	
Primary NTP Server	<input type="text" value="0.0.0.0"/>
Secondary NTP Server	<input type="text" value="0.0.0.0"/>
Update Interval	<input type="text" value="8759"/> [1-8760 Hour(s)]
	<input checked="" type="checkbox"/> Update right now
<input checked="" type="radio"/> Manual Setup	
Date	<input type="text" value="2017"/> / <input type="text" value="7"/> / <input type="text" value="25"/> yyyy/mm/dd
Time	<input type="text" value="16:15:28"/> hh:mm:ss

Item	Definition
Current Settings	
Time	The current date and time.
Status	Show whether the date and time setting is updated by manual setup or by the NTP (Network Time Protocol) server.
Next NTP Update	Synchronize with <i>Update Interval</i> .
System Time Configuration	
Time Zone	The options for time zone selection.

Item	Definition
Date Format	The options for date format selection.
Using NTP Server	<p>*Primary NTP Server: Users enter the IP address/domain name of the NTP server and choose local time zone based on their location.</p> <p>*Secondary NTP Server: Users enter the IP address/domain name of the NTP server and choose local time zone based on their location.</p> <p>*Update Interval: The frequency for updating the date and time from the NTP server. Select the Update right now option to update immediately.</p>
Manual Setup	<p>*Date: Enter the date in the designated format.</p> <p>*Time: Enter the time in the designated format.</p>

1.3.2 Daylight Saving Time

Users adjust the daylight saving time according to their location. See **System Tab > General > Daylight Saving Time**.

System Tab > General > Daylight Saving Time

PDU Remote Management Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | Log | **System** | Help

General
Time
Identification
Daylight Saving Time
Security
Network Service
Notification
Reset/Reboot
About

Daylight Saving Time

DST Configuration

Disable

Traditional US DST time (Second Sunday in March to First Sunday in November)

Manual DST Date Time

Start
02:00, the Second Sunday of March

End
02:00, the First Sunday of November

Apply Reset

Item	Definition
DST Configuration	
Disable	Disable the DST function.
Traditional US DST Time	Start from the second Sunday in March to the first Sunday in November.
Manual DST Date Time	Select the start/end time using the dropdown menu.

1.3.3 Device Identification

Users assign the device's name, location, and the person to contact about issues. See **System Tab > General > Identification**.

System Tab > General > Identification

The screenshot displays the 'PDU Remote Management' web interface. At the top, it shows the user is logged in as 'Administrator' from IP 192.168.25.28, with a [Logout] link. The navigation menu includes 'Summary', 'PDU', 'Envir', 'Log', 'System' (highlighted), and 'Help'. The left sidebar lists various settings categories: 'General' (with sub-items 'Time', 'Identification', and 'Daylight Saving Time'), 'Security', 'Network Service', 'Notification', 'Reset/Reboot', and 'About'. The 'Identification' section is active, showing a form with the following fields: 'Name' (PDU81001), 'Location' (Server Room), and 'Contact' (Administrator). Below the form are 'Apply' and 'Reset' buttons. A dropdown menu labeled 'Host' is visible in the top right of the form area.

Item	Definition
HOST/GUEST#	Select the role of the PDU (HOST or GUEST#) if PDUs are daisy chained. Up to 3 GUEST PDUs can connect to 1 HOST PDU.
Name	The name entered by the user to identify the PDU.
Location	The PDU location entered by the user.
Contact	The person to be contacted about issues. Entered by the user.

1.3.4 Device Reset/Reboot

Users can reboot the PDU or reset all the settings to defaults. See **System Tab > Reset/Reboot**.

System Tab > Reset/Reboot

The screenshot shows the 'PDU Remote Management' web interface. At the top right, it displays 'Administrator login from 192.168.25.28' with a user icon and a '[Logout]' link. Below this is a navigation menu with 'Summary', 'PDU', 'Envir', 'Log', 'System' (highlighted), and 'Help'. On the left is a sidebar with 'General', 'Security', 'Network Service', 'Notification', 'Reset/Reboot' (highlighted), and 'About'. The main content area is titled 'Reset/Reboot' and contains three radio button options: 'Reboot Power Distribution Unit' (selected), 'Reset Power Distribution Unit', and 'Reset Power Distribution Unit (TCP/IP Settings Reserved)'. At the bottom of the options are 'Apply' and 'Reset' buttons.

Item	Definition
Reboot Power Distribution Unit	Restart the PDU without power cycling any outlet.
Reset Power Distribution Unit	Reset the PDU to its factory default setting and restart it. This action does <u>will</u> power cycle any outlet.
Reset Power Distribution Unit (TCP/IP Settings Reserved)	Reset the PDU to its factory default setting while reserving the TCP/IP settings, and restart the PDU. This action <u>will</u> does not power cycle any outlet.

1.3.5 Environmental Monitoring

PDU with CyberPower ENVIROSENSOR can provide remote monitoring of temperature and humidity in a server closet and/or datacenter. You can set temperature and humidity threshold for event action warning. See **Envir Tab > Status** & **Envir Tab > Configuration**. Note that Envir Tab **only** appears when an ENVIROSENSOR is connected to the PDU.

Envir Tab > Status

PDU Remote Management Administrator login from 192.168.27.126 [\[Logout\]](#)

Summary | PDU | **Envir** | Log | System | Help

Status

Information

Name	EnvSensor
Location	Server Room

Temperature

Current Value	23.1 °C
Maximum	24.1 °C (at 02/15/2017 11:10:55)
Minimum	20.5 °C (at 02/16/2017 07:45:25)

Humidity

Current Value	51 %RH
Maximum	56 %RH (at 02/16/2017 09:32:10)
Minimum	42 %RH (at 02/15/2017 13:12:40)

Contact

Contact#1	Normal
Contact#2	Normal
Contact#3	Normal
Contact#4	Normal

Item	Definition
Information	Display the name and location of the ENVIROSENSOR.
Temperature	
Current Value	The real-time reading of temperature.
Maximum	The highest temperature recorded and the time of occurrence.
Minimum	The lowest temperature recorded and the time of occurrence. Click Reset to reset the highest and lowest value to zero.
Humidity	
Current Value	The real-time reading of humidity.
Maximum	The highest humidity recorded and the time of occurrence.
Minimum	The lowest humidity recorded and the time of occurrence.

Item	Definition
	Click Reset to reset the highest and lowest value to zero.
Contact	Display the current status of each input dry contact relay.

Envir Tab > Configuration

PDU Remote Management Administrator login from 192.168.25.32 [Logout]

Summary | PDU | **Envir** | Log | System | Help

Configuration

Information

Name: EnvSensor
Location: Server Room

Temperature

High Threshold: 32 °C [1-70]
Low Threshold: 15 °C [1-70]
Hysteresis: 2 °C [1-10]
Rate of Change: 10 °C per 5 minutes [1-70]
Unit: °C ▼

Humidity

High Threshold: 80 %RH [10-90]
Low Threshold: 20 %RH [10-90]
Hysteresis: 5 %RH [1-20]
Rate of Change: 20 %RH per 5 minutes [1-80]

Contact

#1 Name & State: Contact#1 Normally Open ▼
#2 Name & State: Contact#2 Normally Open ▼
#3 Name & State: Contact#3 Normally Open ▼
#4 Name & State: Contact#4 Normally Open ▼

Apply Reset

Item	Definition
Information	
Name	The name entered by user to identify the ENVIROSENSOR.
Location	The location of the ENVIROSENSOR, entered by the user.
Temperature	
High Threshold	Set the highest temperature value for a high temperature warning.
Low Threshold	Set the lowest temperature value for a low temperature warning.

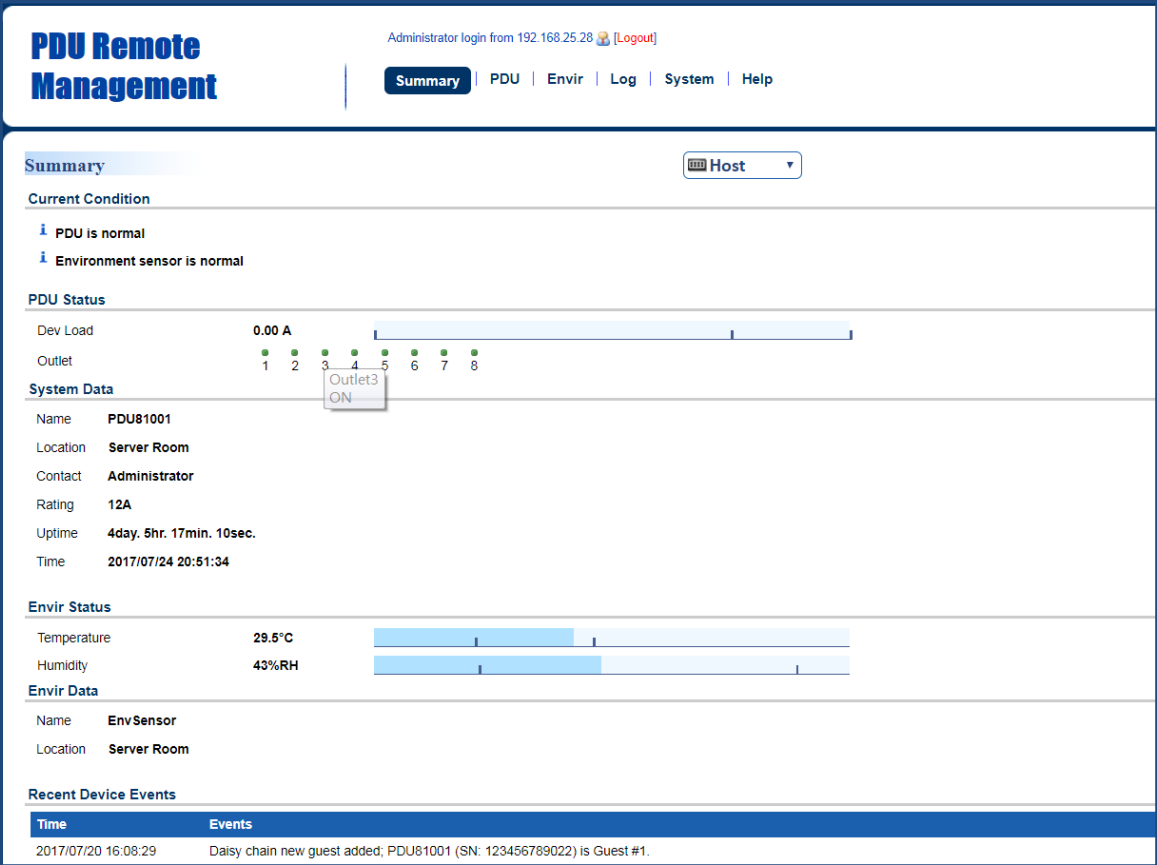
Item	Definition
Hysteresis	<p>The point where the environmental state changes from abnormal to normal and users receive a clearing event notification. The function of Hysteresis is to avoid receiving multiple event notifications.</p> <p>*For high threshold, the point is the threshold minus the Hysteresis value; for low threshold, the point is the threshold plus the Hysteresis value.</p> <p>For example: The high threshold is 32°C, and hysteresis is 2°C. The temperature rises to 33°C, you will get a warning. Then it goes down to 31°C and up to 33°C repeatedly. No clearing events and warnings will occur while the temperature readings are within the Hysteresis. You will not get a clearing event until it drops to 30°C.</p>
Rate of Change	<p>Define the abnormal change of temperature per 5 minutes.</p> <p>For example: The current temperature is 23°C, and rate of change is 10°C. If it goes up to 33°C or down to 13°C within 5 minutes, you will get a warning.</p>
Unit	Select the unit of temperature.
Humidity	
High Threshold	Set the highest humidity value for a high humidity warning.
Low Threshold	Set the lowest humidity value for a low humidity warning.
Hysteresis	Same as <i>Hysteresis</i> under temperature.
Rate of Change	Same as <i>Hysteresis</i> under temperature.
Contact	Enter the name of each input dry contact relay and use the dropdown menu to define the normal status of each one.

2. Advanced Power Management

2.1 Remote Monitoring

Users can see real-time readings of PDU vitals such as device load, power consumption, and outlet status for an overview of current PDU status. See **Summary Tab**, **PDU Tab > Status**, and **PDU Tab > Status > Outlet**.

Summary Tab



Item	Definition
HOST/GUEST#	Select the role of PDU (HOST or GUEST#) if PDUs are daisy chained. Up to 3 GUEST PDUs can connect to 1 HOST PDU.
Current Condition	Operating condition of the PDU and ENVIROSENSOR.
PDU Status	
Dev Load	Total load current of all connected devices, measured in Amps.
Outlet	The on/off status of each outlet. The green light icon indicates that the outlet is on and providing power. This light will go off when the outlet turns off. Outlet Tooltip Function: move the cursor to an individual outlet, Outlet name and its ON/OFF status will be shown.

Item	Definition
System Data	
Name	The name of the PDU. For configuration, see System Tab > General > Identification .
Location	The location of the PDU. For configuration, see System Tab > General > Identification .
Contact	The person accountable for the maintenance of the PDU. For configuration, see System Tab > General > Identification .
Rating	UL current rating of the PDU, measured in Amps.
Uptime	The amount of time the system has been working for since it was last restarted.
Time	System time of the PDU. For configuration, see System Tab > General > Time .
Envir Status	
Temperature	Display temperature reading when the ENVIROSENSOR is connected to the PDU.
Humidity	Display humidity reading when the ENVIROSENSOR is connected to the PDU.
Envir Data	
Name	The name of the ENVIROSENSOR. For configuration, see Envir Tab > Configuration .
Location	The location of the ENVIROSENSOR. For configuration, see Envir Tab > Configuration .
Recent Device Events	A list of the five most recent device events. All events are related to configuration changes.

PDU Tab > Status > Device

PDU Remote Management Administrator login from 192.168.25.28 [Logout]

Summary | **PDU** | Envir | Log | System | Help

Device Status Host

Load

Device Load	0.00 A / 0 W / 0 VA
Power Factor	---
Peak Load	0.00 A (at 2017/06/26 16:30:43)
Energy	0.0 kWh (from 2017/06/26 16:30:43)

Utility

Voltage	107.8 V
Frequency	60.0 Hz

Item	Definition
HOST/GUEST#	Select the role of PDU (HOST or GUEST#) if PDUs are daisy chained. Up to 3 GUEST PDUs can connect to 1 HOST PDU.
Load	
Device Load	Load current of the connected device(s), measured in Amps. Load power of the connected device(s), measured in Kilowatts and Kilovolt-Amps.
Bank Load*	Load current of the bank, measured in Amps.
Power Factor	Power factor of the connected device(s).
Peak Load	Maximum load current recorded and the time of occurrence. Users can reset the value to zero at Power Restore in PDU Tab > Manager > Device .
Energy	Total energy consumed by the connected device(s) from the reset date, measured in kWh. Users can reset the value to zero at Power Restore in PDU Tab > Manager > Device .
Utility	
Voltage	Voltage of the utility power.
Frequency	Frequency of the utility power.

*Only available in select models.

PDU Tab > Status > Outlet*

PDU Remote Management

Administrator login from 192.168.25.28 [\[Logout\]](#)

Summary | PDU | Envir | Log | System | Help

Outlet Status

Host ▼

Load						
#	Name	Status	Load (A)	Load (W)	Peak Load(W)	Energy(kWh)
1	Outlet1	ON	0.90	0	10 (at 2017/06/27 04:07:56)	0.0 (from 2017/06/26 16:30:43)
2	Outlet2	ON	1.68	30	60 (at 2017/06/27 03:23:15)	16.5 (from 2017/06/26 16:30:43)
3	Outlet3	ON	2.84	0	0 (at 2017/06/26 16:30:43)	0.0 (from 2017/06/26 16:30:43)
4	Outlet4	ON	3.17	0	0 (at 2017/06/26 16:30:43)	0.0 (from 2017/06/26 16:30:43)
5	Outlet5	ON	0.83	0	10 (at 2017/06/26 22:48:32)	0.0 (from 2017/06/26 16:30:43)
6	Outlet6	ON	1.96	30	70 (at 2017/06/27 01:31:11)	18.0 (from 2017/06/26 16:30:43)
7	Outlet7	ON	2.94	0	0 (at 2017/06/26 16:30:43)	0.0 (from 2017/06/26 16:30:43)
8	Outlet8	ON	3.22	0	0 (at 2017/06/26 16:30:43)	0.0 (from 2017/06/26 16:30:43)

*The above **Outlet Status Page** is available for Switched Metered by Outlet Series only.

Item	Definition
HOST/GUEST#	Select the role of PDU (HOST or GUEST#) if PDUs are daisy chained. Up to 3 GUEST PDUs can connect to 1 HOST PDU.
Status	The on/off status of each outlet.
Load (A)	Load current of each outlet, measured in Amps.
Load (kW)	Load power of each outlet, measured in Kilowatts.
Peak Load (kW)	The maximum load current recorded and the time of occurrence. Users can reset the value to zero at Power Restore in PDU Tab > Manager > Outlet .
Energy (kWh)	Total energy consumed by connected equipment of each outlet since the last reset. The reset can be set in PDU Tab > Manager > Outlet .

2.2 Visible Power Consumption

With comprehensive energy measurement data, users can gain more visibility to the total power usage of a PDU, as well as estimate the energy cost and CO2 emissions. The energy-trend report also helps users analyze their power utilization and to review the history of power conditions. See [Log Tab > Status Records](#), [Log Tab > Graphing](#), [Log Tab > Energy Records](#), and [Log Tab > Maintenance](#).

Log Tab > Status Records

Time	Device max (A)	Device (A)	Voltage (V)	Temp. (°C)	Hum. (%RH)	Outlet 1 max (W)	Outlet 1 (W)
2017/07/25 13:34:28	0.00	0.00	107.8	30.0	38	0	0
2017/07/25 12:34:29	0.00	0.00	107.8	30.0	40	0	0
2017/07/25 11:34:29	0.00	0.00	107.8	29.8	38	0	0
2017/07/25 10:34:29	0.00	0.00	107.8	29.9	39	0	0
2017/07/25 09:34:29	0.00	0.00	107.8	29.6	41	0	0
2017/07/25 08:34:29	0.00	0.00	107.8	30.7	40	0	0
2017/07/25 07:34:29	0.00	0.00	107.8	30.8	45	0	0
2017/07/25 06:34:29	0.00	0.00	107.8	30.6	45	0	0
2017/07/21 00:34:37	0.00	0.00	107.8	29.8	44	0	0
2017/07/20 23:34:37	0.00	0.00	107.8	29.5	45	0	0
2017/07/20 22:34:37	0.00	0.00	107.8	29.0	46	0	0

Item	Definition
HOST/GUEST#	Select the role of PDU (HOST or GUEST#) if PDUs are daisy chained. Up to 3 GUEST PDUs can connect to 1 HOST PDU.
Device Max (A)	The maximum load current of the connected device(s) or bank during a specific time interval, measured in Amps. This interval can be set in Log Tab > Maintenance .
Device (A)	Load current of the connected device(s) or bank, measured in Amps.
Voltage (V)	Voltage of the utility power.
Temp. (°C)	Temperature reading when the ENVIROSENSOR is connected to the PDU.
Hum. (%RH)	Humidity reading when the ENVIROSENSOR is connected to the PDU.
Outlet # Max (kW)*	The maximum load power of a specific outlet during a specific time interval, measured in Kilowatts. This interval can be set in Log Tab > Maintenance .
Outlet # (kW)*	Load power of a specific outlet, measured in Kilowatts.

*For Switched Metered by Outlet Series only.

Log Tab > Graphing

PDU Remote Management

Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | **Log** | System | Help

Data Log Graphing Host

Graph Period

Last 1 day

From 2017/07/24 14:04 to 2017/07/25 14:04

Graph Data

Device Current
Device Current Max
Voltage
Temperature
Humidity
Outlet_1 Power
Outlet_2 Power

Add Remove

Graph Node

Display All Nodes in Detail

Draw Reset Launch Graph in New Window

Item	Definition
HOST/GUEST#	Select the role of PDU (HOST or GUEST#) if PDUs are daisy chained. Up to 3 GUEST PDUs can connect to 1 HOST PDU.
Graph Period	The time period is used to create a retroactive graph of the status records. A large time period will require more time to render the graph.
Graph Data	The data used to create a graph of the status records. Up to five data points can be selected. A large number of data selected will require more time to render the graph.
Graph Node	Select the Display All Nodes in Detail option to display the selected data points along the graph. When the cursor is moved to an individual data point, information about that point will be shown. If this option is not selected, the graph will show only the line (without the points), so less time is needed to render.
Draw	A graph of the status records will be created.
Reset	Reset the <i>Graph Period</i> to default (1 day).
Launch Graph in New Window	A detailed view of the graph opens in a new browser window.

Log Tab > Energy Records

PDU Remote Management Administrator login from 192.168.25.28 [\[Logout\]](#)
 Summary | PDU | Envir | **Log** | System | Help

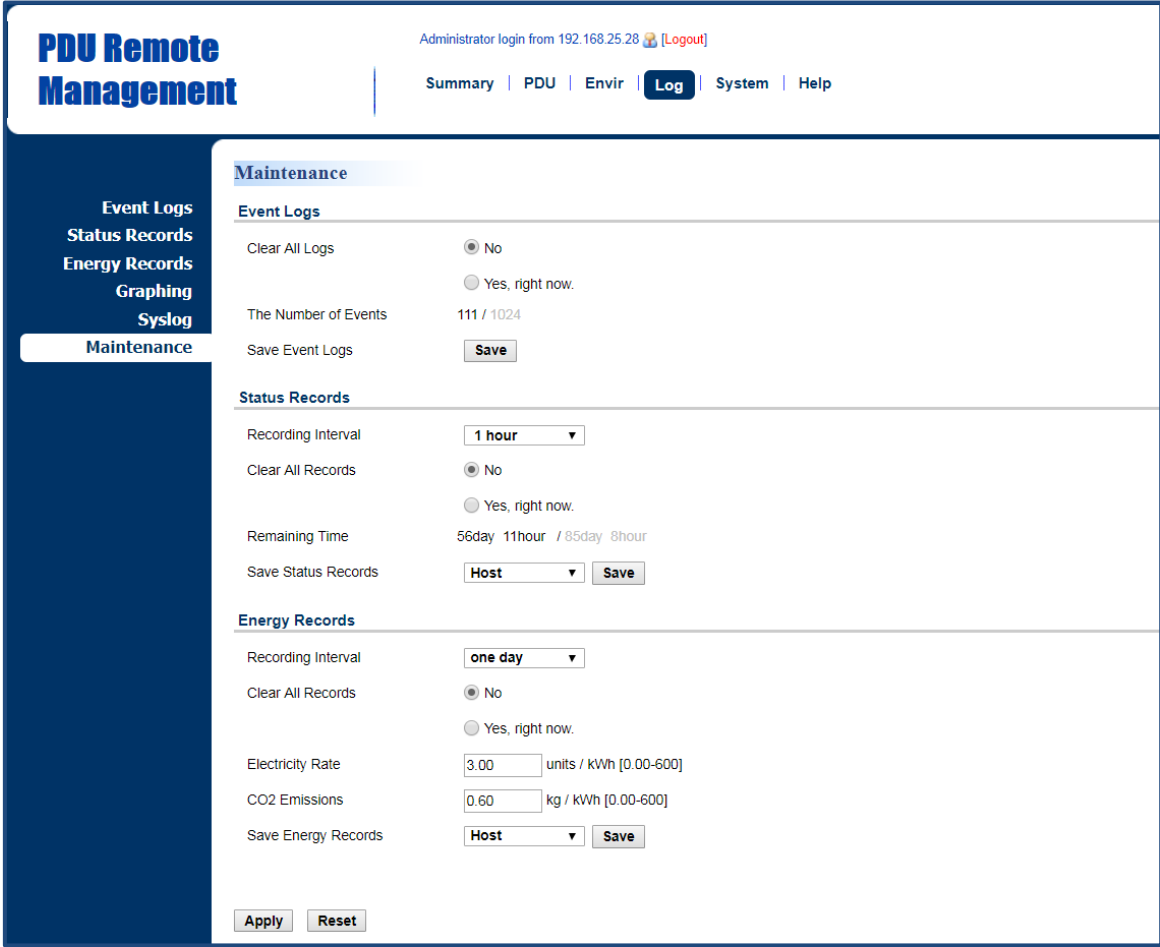
Energy Records Host

Time	Interval Energy(kWh)	Interval Cost(units)	Interval CO2(kg)	Energy (kWh)	Cost (units)	CO2 (kg)	Outlet 1 (kWh)
2017/07/25 00:00:00	0.0	0.00	0.000	0.0	0.00	0.000	0.0
2017/07/24 00:00:00	0.0	0.00	0.000	0.0	0.00	0.000	0.0
2017/07/23 00:00:00	0.0	0.00	0.000	0.0	0.00	0.000	0.0
2017/07/22 00:00:00	0.0	0.00	0.000	0.0	0.00	0.000	0.0
2017/07/21 00:00:00	0.0	0.00	0.000	0.0	0.00	0.000	0.0
2017/07/20 00:00:00	0.0	0.00	0.000	0.0	0.00	0.000	0.0
2017/07/19 00:00:00	0.0	0.00	0.000	0.0	0.00	0.000	0.0
2017/07/18 00:00:00	0.0	0.00	0.000	0.0	0.00	0.000	0.0
2017/07/01 00:00:00	0.0	0.00	0.000	0.0	0.00	0.000	0.0
2017/06/30 00:00:00	0.0	0.00	0.000	0.0	0.00	0.000	0.0

Item	Definition
HOST/GUEST#	Select the role of PDU (HOST or GUEST#) if PDUs are daisy chained. Up to 3 GUEST PDUs can connect to 1 HOST PDU.
Interval Energy (kWh)	Energy consumed by connected device(s) during a specific time interval, measured in kWh. This interval can be set in Log Tab > Maintenance .
Interval Cost (units)	Cost of the energy consumed by the connected device(s) during a specific time interval, equal to <i>Electricity Rate</i> multiplied by <i>Interval Energy</i> . The interval and electricity rate can be set in Log Tab > Maintenance .
Interval CO2 (kg)	Equivalent CO2 emission of the connected device(s) during a specific time interval, equal to <i>CO2 Emissions</i> multiplied by <i>Interval Energy</i> . The interval and CO2 emissions can be set in Log Tab > Maintenance .
Energy (kWh)	Accumulated <i>Interval Energy</i> since the last reset. The reset can be set in Log Tab > Maintenance .
Cost (units)	Accumulated <i>Interval Cost</i> since the last reset. The reset can be set in Log Tab > Maintenance .
CO2 (kg)	Accumulated <i>Interval CO2</i> since the last reset. The reset can be set in Log Tab > Maintenance .
Outlet # (kWh)*	Accumulated <i>Interval Energy</i> of a specific outlet since the last reset. The reset can be set in Log Tab > Maintenance .

*For Switched Metered by Outlet Series only.

Log Tab > Maintenance



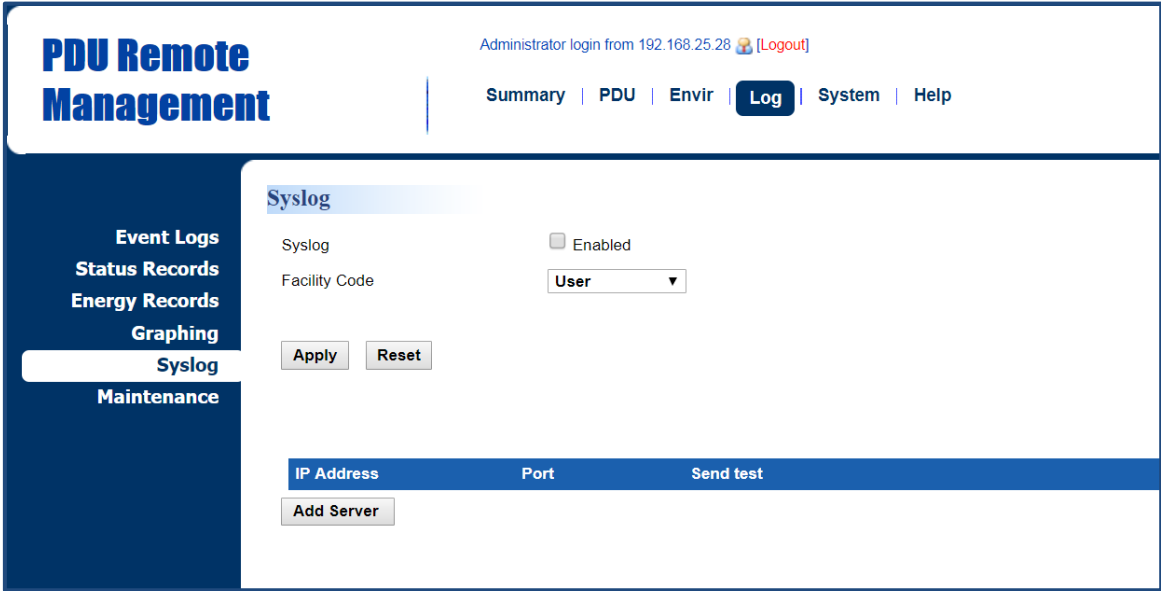
Item	Definition
Event Logs	
Clear All Logs	Clear the existing event logs.
The Number of Events	The number of the existing event logs and the maximum number of the event logs that can be recorded. Once the maximum number is reached, new events overwrite oldest events in memory.
Save Event Logs	Save the existing event logs as a text file.
Status Records	
Recording Interval	The frequency to record the status data. A smaller interval will provide more recordings, but the recordings are overwritten in a shorter period of time. A larger interval will provide fewer recordings, but the recordings are overwritten in a longer period of time.
Clear All Records	Clear the existing status records.

Item	Definition
Remaining Time	The time that records have been kept. A smaller recording interval leads to less remaining time while a larger recording interval leads to more remaining time. Once the maximum number is reached, new status records overwrite oldest status records in memory.
Save Status Records	Save the status records as a text file.
Energy Records	
Recording Interval	The frequency to record the energy data.
Clear All Records	Clear the existing energy records.
Electricity Rate	The cost (units) of energy per unit of energy consumed (kWh). Unit is a monetary value.
CO2 Emissions	The equivalent CO2 emission (kg) per unit of energy consumed (kWh).
Save Energy Records	Save the existing energy records as a text file.

2.3 Event Logging

Users can view all the events, including log in/out records and configuration changes. The timestamp is recorded in a 24-hour format. See **Log Tab > Syslog** and **Log Tab > Event Logs**. For event logs, Users can clear the existing event logs in [Log Tab > Maintenance](#)

Log Tab > Syslog



Item	Definition
Syslog	Check this box to enable Syslog function.
Facility Code	Classify syslog message

Click **Add Server** to enter **Syslog Server Page**.

Syslog Server Page

PDU Remote Management Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | **Log** | System | Help

Syslog Server

Server IP

Server Port

Item	Definition
Server IP	The IP address of Syslog server.
Server Port	The port number that Syslog server uses to communicate.

Logs Tab > Event Logs

PDU Remote Management Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | **Log** | System | Help

Event Logs

Time	Events
2017/07/25 16:12:48	Admin user login from 192.168.25.28.
2017/07/25 14:49:49	Admin user logout from 192.168.25.28.
2017/07/25 14:37:51	Admin user login from 192.168.25.28.
2017/07/25 14:31:57	Admin user logout from 192.168.25.28.
2017/07/25 14:21:53	Admin user login from 192.168.25.28.
2017/07/25 14:14:13	Admin user logout from 192.168.25.28.
2017/07/25 13:53:25	Admin user login from 192.168.25.28.
2017/07/25 13:53:14	Login authorization failure via HTTP from 192.168.25.28.
2017/07/25 13:30:36	Admin user logout from 192.168.25.28.
2017/07/25 13:20:33	Admin user login from 192.168.25.28.
2017/07/25 11:12:15	Admin user logout from 192.168.25.28.
2017/07/25 10:59:48	Admin user login from 192.168.25.28.
2017/07/24 22:03:10	Admin user logout from 192.168.25.28.
2017/07/24 21:44:02	Admin user login from 192.168.25.28.
2017/07/24 21:29:47	Admin user logout from 192.168.25.28.

2.4 Power Protection

The configurable load threshold can be set to prevent an overload condition. Coldstart and system configurations are also offered for different user needs. See **PDU Tab > Device Manager**.

PDU Tab > Manager > Device

PDU Remote Management

Administrator login from 192.168.25.28 [\[Logout\]](#)

Summary | PDU | Envir | Log | System | Help

Status Manager
 Device
 Outlet
 Outlet Action
 Daisy Chain
 Wake on Lan
 EnergyWise
 PowerPanel® List

Device Manager
Host ▼

Load Configuration

Overload Threshold	<input type="text" value="12"/>	A
Near Overload Threshold	<input type="text" value="9"/>	A
Low Load Threshold	<input type="text" value="0"/>	A
Outlet Restriction	<input style="width: 100%;" type="text" value="None"/>	

Power Restore

Peak Load	<input type="checkbox"/> Reset (last reset at 2017/06/26 16:30:43)
Energy	<input type="checkbox"/> Reset (from 2017/06/26 16:30:43)

ColdStart Configuration

ColdStart State	<input type="radio"/> Previous State <input checked="" type="radio"/> All On
ColdStart Delay	<input checked="" type="radio"/> Instant <input type="radio"/> Wait <input style="width: 40px;" type="text"/> Sec(s) <input type="radio"/> Never

System Configuration

Idle Time	<input style="width: 100%;" type="text" value="10 Minutes"/>
-----------	--

Item	Definition
HOST/GUEST#	Select the role of PDU (HOST or GUEST#) if PDUs are daisy chained. Up to 3 GUEST PDUs can connect to 1 HOST PDU.
Load Configuration	
Overload Threshold	Set the value for the total current on the PDU that will signal an overload warning. Must be higher than <i>Near Overload Threshold</i> and equal to or lower than the PDU <i>Rating</i> in the Summary Tab .
Near Overload Threshold	Set the value for the total current on the PDU that will signal a near overload warning. Must be between <i>Overload Threshold</i> and <i>Low Load Threshold</i> .

Item	Definition
Low Load Threshold	Set the value for the total current on the PDU that will signal a low load warning. Must be lower than <i>Near Overload Threshold</i> .
Outlet Restriction**	<p>When load current exceeds the corresponding threshold, no outlets will be allowed to turn on.</p> <p>*None: Users can turn on an outlet even if the device is in Near Overload or Overload state.</p> <p>*On Near Overload: Users cannot turn on an outlet when the device is in Near Overload or Overload state.</p> <p>*On Overload: Users cannot turn on an outlet when the device is in Overload state.</p>
Power Restore	
Peak Load	Reset the peak load to zero.
Energy	Reset the energy to zero.
ColdStart Configuration	
ColdStart State	<p>*Previous State: Outlets will return to the same state (on or off) they were in prior to the PDU turning off. The <i>ColdStart Delay</i> setting will apply when the PDU resumes power.</p> <p>*All On: All outlets will turn on when power is restored to the PDU.</p>
ColdStart Delay	<p>*Instant: Outlets will be turned on immediately when power is restored to the PDU.</p> <p>*Wait: Outlets will be turned on according to this setting when power is restored to the PDU.</p> <p>*Never: Outlets will not be turned on when power is restored to the PDU.</p>
System Configuration	
Idle Time	The PDU LCD screen will turn off automatically after it remains idle for the selected period of time.

**For some models, the Outlet Restriction only shows in the [Bank Manager Page](#).

2.5 Event Action Notification

Users decide the event actions for which they receive notifications. When a certain event happens, an automatic notification will be sent to users so that they can make timely decisions to prevent potential problems. See **System Tab > Notification**.

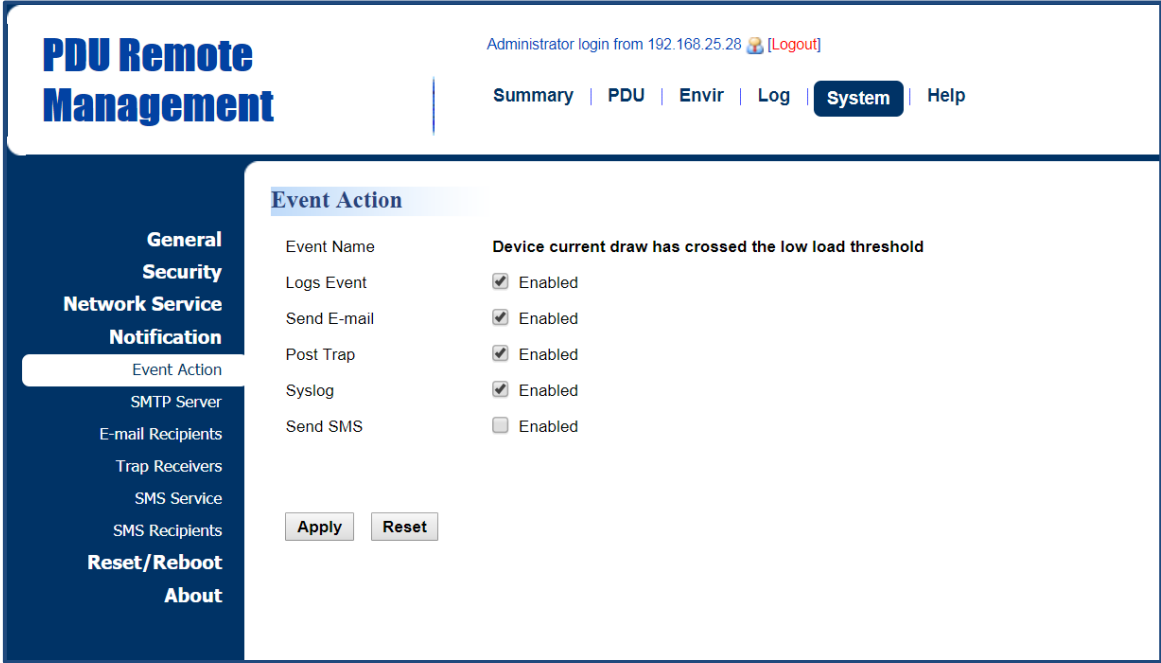
System Tab > Notification > Event Action

The screenshot shows the 'Event Action' configuration page in the PDU Remote Management interface. The page is divided into several sections:

- Header:** 'PDU Remote Management' logo on the left, user login information 'Administrator login from 192.168.25.28 [Logout]' in the center, and the 'CyberPower' logo on the right.
- Navigation:** A menu bar with 'Summary', 'PDU', 'Envir', 'Log', 'System' (selected), and 'Help'.
- Left Sidebar:** A navigation menu with categories: 'General', 'Security', 'Network Service', 'Notification' (expanded), 'SMTP Server', 'E-mail Recipients', 'Trap Receivers', 'SMS Service', 'SMS Recipients', 'Reset/Reboot', and 'About'. Under 'Notification', 'Event Action' is selected.
- Main Content Area:**
 - Event Action:** A sub-header for the current page.
 - Device Events:** A list of event categories including 'PDU Status', 'Power Status', 'Configuration', 'Communication', 'Outlet Control', 'Outlet Status', 'Daisy chain', and 'Environment Sensor'.
 - System Events:** A list of event categories including 'Security', 'System Information', and 'PowerPanel'.
 - Event Table:** A table with columns for 'Event', 'Log', 'E-mail', 'Trap', 'Syslog', and 'SMS'. The 'Event' column is highlighted with a red box. The table contains six rows of event descriptions, each with a set of checkboxes for notification methods.

Click the **Event** field to enter the **Event Action Page**.

Event Action Page



The **Event Action Page** enables users to modify the notification method.

Item	Definition
Logs Event	Record the device event in the <i>Event Logs</i> .
Send E-mail	Send an email to a specific user. An available SMTP server is necessary.
Post Trap	Send a SNMP trap to a specific IP address.
Syslog	Record the device event in Syslog server.
Send SMS	Send a short message to a specific mobile phone number. An available Short Message Service (SMS) provider is needed.

2.5.1 Event Action Recipient Settings

The following provides e-mail receiver configurations.

2.5.1.1 E-mail Notification

Set the proper SMTP server settings so that users can receive an email when a specific event occurs. See **System Tab > Notification > SMTP Server**.

System Tab > Notification > SMTP Server

The screenshot shows the 'SMTP Server' configuration page in the PDU Remote Management interface. The page has a dark blue header with the logo and user information. A navigation menu on the left lists various settings categories. The main content area is titled 'SMTP Server' and contains the following fields and options:

- Service Provider:** A dropdown menu set to 'General'.
- SMTP server address:** A text input field containing '0.0.0.0'.
- Sender E-mail address:** An empty text input field.
- Sender name:** An empty text input field.
- Authentication:** A checkbox labeled 'Required' which is currently unchecked.
- Account:** An empty text input field.
- Password:** An empty text input field.
- Secure connection:** Three radio button options: 'None' (selected), 'TLS', and 'SSL'.
- Service port:** A text input field containing '25' with a note '[default: 25]'.

At the bottom of the form, there are two buttons: 'Apply' and 'Reset'.

Item	Definition
Service Provider	The service provider of e-mail account. There are two options: Other and Gmail.
Other	Select other as service provider. Complete all field settings and click Apply to save.
Gmail	Select Gmail as the service provider. Click Authorize for an authorization to send a mail notification. Then complete the sender name and click Apply to save the settings.
SMTP server address	The IP or host Name of SMTP server used to notify users by e-mail.
Sender E-mail Address	The From field shown in the e-mail message.
Sender Name	The name of the sender.
Authentication	Select this option if the SMTP server requires Authentication.

Item	Definition
Account	Account used for Authentication.
Password	Password used for Authentication.
Secure connection	Enable/Disable TLS or SSL to encrypt the SMTP connection.
Service Port	The port number that the PDU uses to communicate with SMTP server.

Users can set up to five e-mail recipients in designated email address format. See **System > Notification > E-mail Recipients**.

System > Notification > E-mail Recipients

The screenshot shows the 'E-mail Recipients' configuration page in the PDU Remote Management interface. The page has a dark blue header with the logo and navigation links. A sidebar on the left contains a menu with options like 'General', 'Security', 'Network Service', 'Notification', 'Reset/Reboot', and 'About'. The main content area shows a table with the following data:

E-mail	Status	Send test	Result
ted_mosby@cyberpower.com	Enabled	TEST	

Below the table is a 'New Recipient' button.

Item	Definition
E-mail	Click the e-mail address of the recipient to enter the Configure E-mail Recipient Page . Users can modify the e-mail address, change its status, check test result, and delete an existing recipient.
TEST	Click this button to check if the SMTP setting and the email recipients are set correctly.
New Recipient	Click this button to enter the Add New E-mail Recipient Page . Users can add a new recipient.

Configure E-mail Recipient Page

The screenshot shows the 'Configure E-mail Recipient' page. At the top left is the 'PDU Remote Management' logo. The top right shows the user 'Administrator login from 192.168.25.28' with a [Logout] link. A navigation bar contains links for Summary, PDU, Envir, Log, System (highlighted), and Help. On the left is a sidebar menu with categories: General, Security, Network Service, Notification (with sub-items: Event Action, SMTP Server, E-mail Recipients, Trap Receivers, SMS Service, SMS Recipients), Reset/Reboot, and About. The main content area is titled 'Configure E-mail Recipient' and contains: 'Activate' with a checked 'Enabled' checkbox; 'E-mail' with a text input field containing 'ted_mosby@cyberpower.com'; and three buttons: 'Apply', 'Reset', and 'Delete'.

Add New E-mail Recipient Page

The screenshot shows the 'Add New E-mail Recipient' page. It has the same header and sidebar as the previous page. The main content area is titled 'Add New E-mail Recipient' and contains: 'Activate' with a checked 'Enabled' checkbox; 'E-mail' with an empty text input field; and two buttons: 'Apply' and 'Reset'.

2.5.1.2 SNMP Trap Notification

Set up to 10 SNMP trap receivers to be notified when an event occurs. See **System > Notification > Trap Receivers**.

System > Notification > Trap Receivers

The screenshot displays the 'Trap Receivers' configuration page in the PDU Remote Management interface. The page features a table with the following data:

Name	Status	Type	IP Address	Community/ User Name	Send test
Trap Name	Enabled	SNMPv1	0.0.0.0	public	TEST

Below the table is a 'New Receiver' button. The left sidebar contains navigation links for General, Security, Network Service, Notification, Event Action, SMTP Server, E-mail Recipients, Trap Receivers, SMS Service, SMS Recipients, Reset/Reboot, and About. The top right corner shows the CyberPower logo and the user is logged in as Administrator from 192.168.25.28.

Item	Definition
Name	Click on the trap name to enter the Configure Trap Receiver Page . Users can modify or delete an existing receiver.
TEST	Click this button to check if the trap can be sent.
New Receiver	Click this button to enter the Add New Trap Receiver Page . Users can add a new recipient.

Configure Trap Receiver Page

PDU Remote Management Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | Log | **System** | Help

- General
- Security
- Network Service
- Notification
 - Event Action
 - SMTP Server
 - E-mail Recipients
 - Trap Receivers**
 - SMS Service
 - SMS Recipients
- Reset/Reboot
- About

Configure Trap Receiver

Active Enabled

Name

IP Address

SNMPv1

Community

SNMPv3

User Name

Add New Trap Receiver Page

PDU Remote Management Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | Log | **System** | Help

- General
- Security
- Network Service
- Notification
 - Event Action
 - SMTP Server
 - E-mail Recipients
 - Trap Receivers**
 - SMS Service
 - SMS Recipients
- Reset/Reboot
- About

Add New Trap Receiver

Active Enabled

Name

IP Address

SNMPv1

Community

SNMPv3

User Name

Item	Definition
Name	The name of trap receiver.
IP Address	The IP address of the trap receiver.
SNMPv1	If choosing the SNMPv1 option as the trap type for a trap receiver, select the corresponding community. See System Tab > Network Service > SNMPv1 Service .
SNMPv3	If choosing the SNMPv3 option as the trap type for a trap receiver, select the corresponding user name. See System Tab > Network Service > SNMPv3 Service .

2.5.1.3 SMS Notification

Short Message Service (SMS) is used by mobile communication systems to send a short message to a specific mobile phone number. Standardized communication protocols allow the exchange of short text messages between mobile devices. The system provides four methods for users to choose how they want to send a message. See **System > Notification > SMS Service**.

System > Notification > SMS Service

The screenshot shows the 'SMS Service' configuration page in the PDU Remote Management interface. The page has a dark blue header with the 'PDU Remote Management' logo and a navigation menu including 'Summary', 'PDU', 'Envir', 'Log', 'System', and 'Help'. A sidebar on the left contains a menu with categories like 'General', 'Security', 'Network Service', 'Notification', 'Reset/Reboot', and 'About'. Under 'Notification', 'SMS Service' is selected. The main content area shows the 'SMS Service' configuration form with the following fields: 'Service Provider' (dropdown menu set to 'Clickatell'), 'User Name' (text input 'tedmosby'), 'Password' (text input 'himym'), and 'HTTP API ID' (text input '2014331'). There are 'Apply' and 'Reset' buttons at the bottom of the form.

Clickatell method:

Clickatell is one of the supported SMS service providers. Go to the Clickatell website to sign up and get an API ID.

Item	Definition
User name	The account username created on Clickatell website.
User password	The user password created on Clickatell website.
HTTP API ID	The API ID acquired on Clickatell website.

System > Notification > SMS Service

PDU Remote Management

Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | Log | **System** | Help

SMS Service

Service Provider: **Using HTTP GET**

URL: `http://api.clickatell.com/http/sendmsg?user=tedmosby&password=himym&api_id=2014331&to=E_PHONE_NUMBER&text=E_PHONE_MESSAGE`

Apply Reset

Using HTTP GET:

Use the example where Clickatell is the SMS provider.

The basic form of URL using the HTTP GET method is:

`http://api.clickatell.com/http/sendmsg?user=tedmosby&password=himym&api_id=2014331&to=E_PHONE_NUMBER&text=E_PHONE_MESSAGE`

Query String in the URL	Definition
user=tedmosby	Replace “tedmosby” with the user name created at the Clickatell website.
password=himym	Replace “himym” with the password created at the Clickatell website.
api_id=2014331	Replace “2014331” with the API ID acquired at the Clickatell website.
to=E_PHONE_NUMBER	Do not replace this information. It refers to the receiver phone number entered in System Tab > Notification > SMS Recipients .
text=E _MESSAGE	Do not replace this information. It refers to the event action sent by the SMS service provider. For configurations, see System Tab > Notification > Event Action .

System > Notification > SMS Service

PDU Remote Management

Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | Log | **System** | Help

SMS Service

Service Provider: **Using HTTP P**

URL: `http://api.clickatell.com/http/sendmsg`

Content: `user=tedmosby&password=himym&api_id=2014331&to=E_PHONE_NUMBER&text=E_MESSAGE`

Apply Reset

Using HTTP POST:

Use the example where Clickatell is the SMS provider.

The basic form of URL is: `http://api.clickatell.com/http/sendmsg`

The basic form of body is:

`user=tedmosby&password=himym&api_id=2014331&to=E_PHONE_NUMBER&text=E_MESSAGE`

Query String in Body	Definition
<code>user=tedmosby</code>	Replace “tedmosby” with the user name created at the Clickatell website.
<code>password=himym</code>	Replace “himym” with the password created at the Clickatell website.
<code>api_id=2014331</code>	Replace “2014331” with the API ID acquired at the Clickatell website.
<code>to=E_PHONE_NUMBER</code>	Do not replace this information. It refers to the receiver phone number entered in System Tab > Notification > SMS SMS Recipients .
<code>text=E_MESSAGE</code>	Do not replace this information. It refers to the event action sent by SMS service provider. For configurations, see System Tab > Notification > Event Action .

System > Notification > SMS Service



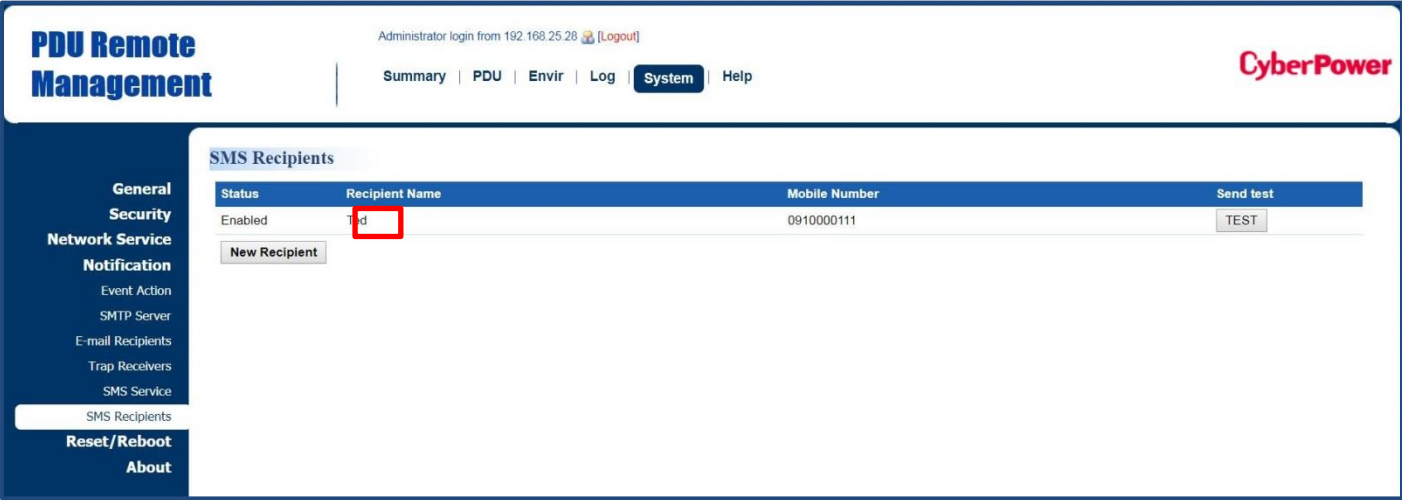
Using Mail:

Users set the SMTP server in [System Tab > Notification > SMTP Server](#) first, and then enter the following information.

Item	Definition
Address	Enter the e-mail of the recipient.
Subject	The Subject field shown in the e-mail message, entered by user.
Content	
E_ MESSAGE	Do not replace this information. It refers to the event action sent by SMS service provider. For configurations, see System Tab > Notification > Event Action .
E_PHONE_NUMBER	Do not replace this information. It refers to the receiver phone number entered in System Tab > Notification > SMS SMS Recipients .

Users can set up to 10 mobile phone numbers as SMS recipients who will receive a short message notification when a specific event occurs. See **System Tab > Notification > SMS Recipients**.

System Tab > Notification > SMS Recipients



Item	Definition
Recipient Name	Click the name of the recipient to open the Configure SMS Receiver Page . Users can modify or delete an existing receiver.
TEST	Click this button to check whether the test message is correctly sent.
New Recipient	Click this button to open the Add New SMS Receiver Page . Users can add a new recipient.

Configure SMS Receiver Page

PDU Remote Management Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | Log | **System** | Help

General
Security
Network Service
Notification
Event Action
SMTP Server
E-mail Recipients
Trap Receivers
SMS Service
SMS Recipients
Reset/Reboot
About

Configure SMS Recipient

Active Enabled

Recipient Name

Mobile Number

Add New SMS Receiver Page

PDU Remote Management Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | Log | **System** | Help

General
Security
Network Service
Notification
Event Action
SMTP Server
E-mail Recipients
Trap Receivers
SMS Service
SMS Recipients
Reset/Reboot
About

Add New SMS Recipient

Active Enabled

Recipient Name

Mobile Number

3. Outlet Management

The following provides the outlet configurations to meet different application scenarios.

3.1 Remote Outlet On/Off/Reboot

Users can turn on, turn off, or reboot individual outlet. See **PDU Tab > Outlet Action > Control**. (For Switched Metered by Outlet Series and Switched Series only.)

PDU Tab > Outlet Action > Control

The screenshot shows the 'PDU Remote Management' interface. The breadcrumb trail is 'PDU Tab > Outlet Action > Control'. The user is logged in as 'Administrator' from IP '192.168.25.28'. The navigation menu on the left includes 'Status Manager', 'Outlet Action', 'Control', 'Schedule', 'Daisy Chain', 'Wake on Lan', 'EnergyWise', and 'PowerPanel® List'. The main content area is titled 'Control' and has a 'Host' dropdown menu. The 'Control Action' is set to 'Turn On'. There are checkboxes for 'Delay' (Yes) and 'Outlet Selection' (All). A table lists 8 outlets, all with a status of 'ON'. The table has columns for 'Status', '#', and 'Name'. At the bottom, there are 'Next »' and 'Reset' buttons.

Status	#	Name
ON	1	Outlet1
ON	2	Outlet2
ON	3	Outlet3
ON	4	Outlet4
ON	5	Outlet5
ON	6	Outlet6
ON	7	Outlet7
ON	8	Outlet8

Item	Definition
HOST/GUEST#	Select the role of PDU (HOST or GUEST#) if PDUs are daisy chained. Up to 3 GUEST PDUs can connect to 1 HOST PDU.
Control Action	
Turn On	Selected outlets will be immediately turned on.
Turn On + Delay	Selected outlets will be turned on according to each outlet's <i>Power On Delay</i> in PDU Tab > Manager > Outlet .
Turn Off	Selected outlets will be immediately turned off.
Turn Off + Delay	Selected outlets will be turned off according to each outlet's <i>Power Off Delay</i> in PDU Tab > Manager > Outlet . This action could signal a computer to shut down, if PowerPanel® Business Edition Client software is installed on it.

Item	Definition
Reboot	Selected outlets will be immediately turned off and then be turned on again according to each outlet's <i>Reboot Duration</i> in PDU Tab > Manager > Outlet .
Reboot + Delay	Selected outlets will be turned off according to each outlet's <i>Power Off Delay</i> . They will be synchronized with the longest <i>Power Off Delay</i> and the longest <i>Reboot Duration</i> of the selected outlets. Then they will be turned on according to each outlet's <i>Power On Delay</i> in PDU Tab > Manager > Outlet .
Cancel Pending Command	Any pending commands of the selected outlet(s) will be cancelled. Any outlet in a pending command state will be notated with an asterisk (*).
Outlet Selection	Outlets selected for action.

3.2 Scheduled Outlet On/Off/Reboot

Outlet(s) can be set to automatically turn on, turn off, or reboot at scheduled times. See **PDU Tab > Outlet Action > Schedule**. (For Switched Metered by Outlet Series and Switched Series only.)

PDU Tab > Outlet Action > Schedule

Select the role of PDU (HOST or GUEST#) first if PDUs are daisy chained. Up to 3 GUEST PDUs can connect to 1 HOST PDU. Select the **Once**, **Daily** or **Weekly** option, and then click the **Next** button to enter the **Add New Action Schedule Page**.

Item	Definition
Frequency	
Once	Scheduled action takes place once at the configured date and time.
Daily	Scheduled action takes place daily at the configured time.
Weekly	Scheduled action takes place once a week for the configured day and time.

Add New Action Schedule Page

PDU Remote Management Administrator login from 192.168.25.28 [Logout]

Summary | **PDU** | Envir | Log | System | Help

Add New Action Schedule - Once Host

Enable

Name

Control Action **Turn On**

Delay Yes

Action Time / at :

Outlet Selection All

#	Name
<input type="checkbox"/>	1 Outlet1
<input type="checkbox"/>	2 Outlet2
<input type="checkbox"/>	3 Outlet3
<input type="checkbox"/>	4 Outlet4
<input type="checkbox"/>	5 Outlet5
<input type="checkbox"/>	6 Outlet6
<input type="checkbox"/>	7 Outlet7
<input type="checkbox"/>	8 Outlet8

Up to 10 scheduled settings are allowed.

Item	Definition
Enable	Check this box to activate the scheduled action function.
Name	The name entered by the user to identify the specific scheduled event.
Control Action	The action will be performed when the scheduled event takes place. For reboot action, selected outlets will be immediately turned off and then be turned on again according to outlet's <i>Reboot Duration</i> in PDU Tab > Manager > Outlet . The duration is within 5 to 60 seconds.
Delay	Click this box to activate outlet delay function. For configurations, see PDU Tab > Manager > Outlet
Action Time	The time at which the scheduled event takes place.
Outlet Selection	Outlets selected for the scheduled event.

3.3 Sequencing Power On/Off

Enable users to turn on, turn off, or reboot the outlets in sequence. When powering on the connected devices, the sequential power-on method is recommended to avoid high inrush current. See **PDU Tab > Manager > Outlet**. (For Switched Metered by Outlet Series and Switched Series only.)

PDU Tab > Manager > Outlet

The screenshot shows the 'PDU Remote Management' web interface. The top navigation bar includes 'Summary', 'PDU', 'Envir', 'Log', 'System', and 'Help'. The main content area is titled 'Outlet Manager' and shows a dropdown menu set to 'Host'. Below this is a table of outlets with the following data:

#	Outlet Name	On Delay	Off Delay	Reboot Duration	Overload Threshold	Near Overload Threshold	Low Load Threshold
<input type="checkbox"/> 1	Outlet1	3 sec.	3 sec.	5 sec.	1440 (W)	1080 (W)	0 (W)
<input type="checkbox"/> 2	Outlet2	3 sec.	3 sec.	5 sec.	1440 (W)	1080 (W)	0 (W)
<input type="checkbox"/> 3	Outlet3	3 sec.	3 sec.	5 sec.	1440 (W)	1080 (W)	0 (W)
<input type="checkbox"/> 4	Outlet4	3 sec.	3 sec.	5 sec.	1440 (W)	1080 (W)	0 (W)
<input type="checkbox"/> 5	Outlet5	3 sec.	3 sec.	5 sec.	1440 (W)	1080 (W)	0 (W)
<input type="checkbox"/> 6	Outlet6	3 sec.	3 sec.	5 sec.	1440 (W)	1080 (W)	0 (W)
<input type="checkbox"/> 7	Outlet7	3 sec.	3 sec.	5 sec.	1440 (W)	1080 (W)	0 (W)
<input type="checkbox"/> 8	Outlet8	3 sec.	3 sec.	5 sec.	1440 (W)	1080 (W)	0 (W)

A 'Next >' button is located at the bottom of the table.

Select the role of PDU (HOST or GUEST#) first if PDUs are daisy chained. Up to 3 GUEST PDUs can connect to 1 HOST PDU. Click the box to select one outlet or multiple outlets for power sequencing and then click **Next** to open the **Outlet Configuration Page** for configuration.

Outlet Configuration Page

PDU Remote Management Administrator login from 192.168.25.28 [Logout]

Summary | **PDU** | Envir | Log | System | Help

Configuration Host

Name

Action Configuration

Power On Delay Instant
 Delay Sec(s) [1-7200]
 Never

Power Off Delay Instant
 Delay Sec(s) [1-7200]
 Never

Reboot Duration Sec(s) [5-60]

Load Configuration

Overload Threshold W
Near Overload Threshold W
Low Load Threshold W

Power Restore

Peak Load Reset
Energy Reset

Item	Definition
Name	The name entered by the user to identify the selected outlet or multiple outlet configuration.
Action Configuration	
Power On/Off Delay	<p>*Instant: Turn on/off the outlet immediately.</p> <p>*Delay: Delay time before turning on/off the outlet. Valid values are within the range of 1 to 7,200 seconds.</p> <p>*Never: Never turn on/off the outlet.</p>
Reboot Duration	The length of time the outlet will remain off during a Reboot action. Valid values are within the range of 5 to 60 seconds.
Load Configuration	
Overload Threshold	Set the value for individual outlet that will signal an overload warning in Watts. Must be higher than <i>Near Overload Threshold</i> .
Near Overload Threshold	Set the value for individual outlet that will signal a near overload warning in Watts. Must be between <i>Overload Threshold</i> and <i>Low Load Threshold</i> .
Low Overload Threshold	Set the value for individual outlet that will signal a low overload warning in Watts. Must be lower than <i>Near Overload Threshold</i> .
Power Restore	

Item	Definition
Peak Load	Restore the peak load of each outlet to zero.
Energy	Restore the energy of each outlet to zero.

3.4 Wake on LAN (WoL)

When turning on an outlet, a Wake on LAN packet can be sent to the connected computer to awaken it. It is necessary for the computer to support this function and is configured as "Enabled" in its BIOS settings. See **PDU Tab > Wake on LAN > Features** and **PDU Tab > Wake on LAN > Lists**. (For Switched Metered by Outlet Series and Switched Series only.)

PDU Tab > Wake on LAN > Features

Item	Definition
PowerPanel Client	Load/Sync with PowerPanel Client List. To achieve synchronization, make sure the PDU has established communication with PowerPanel® Business Edition Client software. See System Tab > Security > Authentication .
Wake Conditions	Enable or disable the Wake on LAN function.

PDU Tab > Wake on LAN > Lists

The screenshot shows the 'PDU Remote Management' interface. At the top, it says 'Administrator login from 192.168.25.28 [Logout]'. Below that are navigation tabs: Summary, PDU (selected), Envir, Log, System, and Help. The left sidebar contains a menu with 'Status Manager', 'Outlet Action', 'Daisy Chain', 'Wake on Lan', 'Features', 'Lists', 'EnergyWise', and 'PowerPanel® List'. The main content area is titled 'WoL Lists' and contains two sections: 'WoL Client List' and 'WoL Manual List'. Both sections have a table with columns: Status, IP Address, MAC Address, Outlet, and Send test. The 'WoL Manual List' section includes a 'New' button.

Item	Definition
WoL Client List	If the PowerPanel Client option in PDU Tab > Wake on LAN > Features is selected, the PowerPanel® List will be automatically added to the WoL Client list.
WoL Manual List	Click New to enter the Add Wake on LAN Receiver Page . Users can manually add WoL receivers.

Add Wake on LAN Receiver Window

PDU Remote Management

Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | Log | System | Help

Status Manager

Outlet Action

Daisy Chain

Wake on Lan

Features

Lists

EnergyWise

PowerPanel® List

Add Wake on Lan Receiver

Active Enabled

IP Address

Outlet

#	Name
<input checked="" type="radio"/>	1 Outlet1
<input type="radio"/>	2 Outlet2
<input type="radio"/>	3 Outlet3
<input type="radio"/>	4 Outlet4
<input type="radio"/>	5 Outlet5
<input type="radio"/>	6 Outlet6
<input type="radio"/>	7 Outlet7
<input type="radio"/>	8 Outlet8

Item	Definition
Active	Enable/Disable the Wake on LAN function.
IP Address	The IP address of the computer. This IP must be within the same subnet as the PDU. Up to 50 IP addresses are supported.
Outlet	Select the outlet that provides power to the computer.

3.5 Graceful Computer Shutdown

After the connected computer is installed with PowerPanel Business Edition Client or Center and establishes communication with the PDU, its IP address will be automatically displayed in the PowerPanel® List shown below. This computer can perform a safe shutdown before the outlet powering the computer turns off, thus avoiding data loss. To achieve communication between the computer and PDU, see **System > General > Security**.

Up to 50 computers having PPBE Client or Center installed can be listed. A Client or Center computer will be removed when it has been disconnected from the PDU for an hour. See **PDU Tab > PowerPanel® List**. (For Switched Metered by Outlet Series and Switched Series only.)

PDU Tab > PowerPanel® List

The screenshot displays the 'PDU Remote Management' web interface. At the top right, it shows 'Administrator login from 192.168.25.28 [Logout]'. Below this is a navigation bar with 'Summary', 'PDU' (selected), 'Envir', 'Log', 'System', and 'Help'. The left sidebar contains a menu with 'Status Manager', 'Outlet Action', 'Daisy Chain', 'Wake on Lan', 'EnergyWise', and 'PowerPanel® List' (highlighted). The main content area is titled 'PowerPanel® List' and contains a table with the following data:

IP Address	Type	Outlet	Name	Location	Contact
192.168.26.107	Client	1	Lab03	Lab03	admin

Click the IP address of a client to access configuration settings.

3.6 Cisco EnergyWise

Users can manage and control all Cisco EnergyWise entities and configure settings. See **PDU Tab > EnergyWise > Configuration** and **PDU Tab > EnergyWise > Children List**.

PDU Tab > EnergyWise > Configuration

The screenshot displays the 'EnergyWise Configuration' page in the PDU Remote Management interface. The page header shows 'Administrator login from 192.168.25.28' and a '[Logout]' link. The navigation menu includes 'Summary', 'PDU', 'Envir', 'Log', 'System', and 'Help'. The left sidebar lists various management options, with 'EnergyWise' and 'Configuration' highlighted. The main configuration area includes the following fields:

- Version: 1.2.0
- EnergyWise: Enable
- Service port: 43440
- Domain Name: [Text Input Field]
- Off-State Cache:
- Secure Mode:
- Shared Secret: [Text Input Field]

Buttons for 'Apply' and 'Reset' are located at the bottom of the configuration area.

Item	Definition
Version	The version of EnergyWise supported.
EnergyWise	Enable/Disable EnergyWise support.
Service Port	The port number is used to communicate with EnergyWise. This number must be the same as that of a Cisco switch that the PDU connects to.
Domain Name	The EnergyWise domain name. This must be the same as that of a Cisco switch that the PDU connects to.
Off-State Cache	Enable/Disable endpoint to cache EnergyWise list in the Cisco switch after the PDU has rebooted.
Secure Mode	Enable EnergyWise use of a shared secret.
Shared Secret	The secret for the EnergyWise domain.

PDU Tab > EnergyWise > Children List

PDU Remote Management

Administrator login from 192.168.25.28 [\[Logout\]](#)

Summary | **PDU** | Envir | Log | System | Help

EnergyWise Children List

Parent

#	Name	Role	Keywords	importance
1	PDU_Base	base,role	endpoint,child,base	1

Children

#	Name	Role	Keywords	importance
1	Outlet1	outlet,role	endpoint,child,outlet	1
2	Outlet2	outlet,role	endpoint,child,outlet	1
3	Outlet3	outlet,role	endpoint,child,outlet	1
4	Outlet4	outlet,role	endpoint,child,outlet	1
5	Outlet5	outlet,role	endpoint,child,outlet	1
6	Outlet6	outlet,role	endpoint,child,outlet	1
7	Outlet7	outlet,role	endpoint,child,outlet	1
8	Outlet8	outlet,role	endpoint,child,outlet	1
9	Bank1	bank,role	endpoint,child,bank	1

Click the **Name** field in parent and/or children list to enter the **EnergyWise Parent Configuration Page** and **EnergyWise Child Configuration Page**.

EnergyWise Parent Configuration Page

PDU Remote Management

Administrator login from 192.168.25.28 [\[Logout\]](#)

Summary | PDU | Envir | Log | System | Help

EnergyWise Parent Configuration

Name	<input type="text" value="PDU_Base"/>
Role	<input type="text" value="base,role"/>
Keywords	<input type="text" value="endpoint,child,base"/>
importance	<input type="text" value="1"/>

Apply
Reset

Status Manager

Outlet Action

Daisy Chain

Wake on Lan

EnergyWise Configuration

Children List

PowerPanel® List

EnergyWise Child Configuration Page

PDU Remote Management

Administrator login from 192.168.25.28 [\[Logout\]](#)

Summary | PDU | Envir | Log | System | Help

EnergyWise Child Configuration

Name	<input type="text" value="Outlet1"/>
Role	<input type="text" value="outlet,role"/>
Keywords	<input type="text" value="endpoint,child,outlet"/>
importance	<input type="text" value="1"/>

Apply
Reset

Status Manager

Outlet Action

Daisy Chain

Wake on Lan

EnergyWise Configuration

Children List

PowerPanel® List

Item	Definition
Name	The name entered by the user to identify an EnergyWise entity. The maximum length is 31 characters.
Role	This parameter is a string entered by the user to describe the function of the entity. Maximum length is 31 characters.
Keywords	This parameter is a string entered by the user to describe the entity. Maximum length is 31 characters.

Item	Definition
Importance	This parameter, entered by the user, shows the value of an entity's importance and must be between 1 and 100.

4. Security

The following provides account configurations to protect against unauthorized entry.

4.1 Login Authentication

There are five options for login authentication. **Only one user can log in to the web interface at a time.**

System Tab > Security > Authentication

Item	Definition
Login Authentication	
Local	Log in with user name and password configured in Local Account. See System Tab > Security > Local Configuration .
RADIUS, Local	Log in with user name and password to authenticate with RADIUS server first. If the RADIUS server fails to respond, then the user name and password configured in Local Configuration can be used. See System Tab > Security > RADIUS Configuration .
RADIUS Only	Log in with user name and password to authenticate with RADIUS server only. See System Tab > Security > RADIUS Configuration .

Item	Definition
LDAP, Local	Log in with user name and password to authenticate with LDAP server first. If the LDAP server fails to respond, then the user name and password configured in Local Configuration can be used. See System Tab > Security > LDAP configuration .
LDAP Only	Log in with user name and password to authenticate with LDAP server only. See System Tab > Security > LDAP configuration .
Software Authentication	
Secret Phrase	The authentication phrase is used to communicate with PowerPanel® Business Edition software. This phrase should be the same Secret Phrase as the field on PowerPanel® Business Edition software interface.

4.1.1 Using Local Configuration for Authentication

System Tab > Security > Local Configuration

Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | Log | **System** | Help

Local Configuration

Status	Identity	User Name	Password	Manageable Outlets
Enabled	Administrator	cyber	*****	All
Enabled	Viewer	device	cyber	None

[New](#)

General
Security
 Authentication
 Local Configuration
 RADIUS Configuration
 LDAP Configuration
 Session Control
Network Service
Notification
Reset/Reboot
About

There are two types of account: administrator and viewer. Click **User Name** or **Password** field to enter **Administrator Page** or **Viewer Page**. Users can also click **NEW** to enter **Add Outlet User Page** to create an outlet account.

Administrator Page

PDU Remote Management

Administrator login from 192.168.25.28 [Logout]

[Summary](#) | [PDU](#) | [Envir](#) | [Log](#) | [System](#) | [Help](#)

General

Security

Authentication

Local Configuration

RADIUS Configuration

LDAP Configuration

Session Control

Network Service

Notification

Reset/Reboot

About

Administrator

User Name	<input type="text" value="cyber"/>
Current Password	<input type="password"/>
New Password	<input type="password"/>
Confirm Password	<input type="password"/>
Admin Manager IP	
<input checked="" type="checkbox"/> Enabled	<input type="text" value="0.0.0.0"/>
<input type="checkbox"/> Enabled	<input type="text" value="0.0.0.0"/>

Viewer Page

PDU Remote Management

Administrator login from 192.168.25.28 [Logout]

[Summary](#) | [PDU](#) | [Envir](#) | [Log](#) | [System](#) | [Help](#)

General

Security

Authentication

Local Configuration

RADIUS Configuration

LDAP Configuration

Session Control

Network Service

Notification

Reset/Reboot

About

Viewer

Allow Access	<input checked="" type="checkbox"/> Enabled
User Name	<input type="text" value="device"/>
New Password	<input type="password"/>
Confirm Password	<input type="password"/>
Viewer Manager IP	
<input checked="" type="checkbox"/> Enabled	<input type="text" value="0.0.0.0"/>
<input type="checkbox"/> Enabled	<input type="text" value="0.0.0.0"/>

Item	Definition
Administrator	The administrator can access all functions, including Enable/Disable the Viewer account. For login configuration, users can only create one administrator account.
User Name	Enter the new user name.
Current Password	Enter the current password for authentication.
New Password	Enter the new password.
Confirm Password	Enter the new password again to confirm it.
Admin Manager IP (optional)	Set the Admin IP which is allowed to access. If you want access from any IP address, you can set one of them as 0.0.0.0 or 255.255.255.255. Note: You can also set a range of IP addresses to access, for example, 192.168.16.1/24.
Viewer	The viewer can view the settings but cannot control or change any settings.
Allow Access	Check this box to enable view account.
Viewer Manager IP(optional)	Set the Viewer IP which is allowed to access. If you want access from any IP address, you can set one of them as 0.0.0.0 or 255.255.255.255. Note: You can also set a range of IP addresses to access, for example, 192.168.16.1/24.

Add Outlet User Page*

PDU Remote Management Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | Log | **System** | Help

Add Outlet User

Active Enable

User Name

Password

Outlet Selection All

#	Name
<input type="checkbox"/>	1 Outlet1
<input type="checkbox"/>	2 Outlet2
<input type="checkbox"/>	3 Outlet3
<input type="checkbox"/>	4 Outlet4
<input type="checkbox"/>	5 Outlet5
<input type="checkbox"/>	6 Outlet6
<input type="checkbox"/>	7 Outlet7
<input type="checkbox"/>	8 Outlet8

*The above **Add Outlet User Page** is available for Switched Metered by Outlet Series and Switched Series only.

Users can create an outlet account that is allowed to control assigned outlet(s).

Item	Definition
Active	Enable or disable the user account.
User Name	Set a name for the user account.
Password	Set the user password.
Outlets Selection	Outlets that the user can control.

4.1.2 Using RADIUS Configuration for Authentication

System Tab > Security > RADIUS Configuration

The screenshot displays the PDU Remote Management web interface. At the top left, the logo "PDU Remote Management" is visible. In the top right, it shows "Administrator login from 192.168.25.28" with a user icon and a "[Logout]" link. Below this, a navigation menu includes "Summary", "PDU", "Envir", "Log", "System" (highlighted), and "Help".

The main content area is titled "RADIUS Configuration". It features a table with two columns: "RADIUS Server" and "Port". Below the table, there is a button labeled "Add Server".

On the left side, there is a sidebar menu with the following categories and sub-items:

- General**
- Security**
 - Authentication
 - Local Configuration
 - RADIUS Configuration**
 - LDAP Configuration
 - Session Control
- Network Service**
- Notification**
- Reset/Reboot**
- About**

Click **Add Server** to enter **Radius Server Configuration Page** to create a server.

Radius Server Configuration Page

PDU Remote
Management

Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | Log | System | Help

General

Security

Authentication

Local Configuration

RADIUS Configuration

LDAP Configuration

Session Control

Network Service

Notification

Reset/Reboot

About

RADIUS Server Configuration

Server IP

Shared Secret

Server Port [default:1812]

Test Setting

User Name

Password

Skip Test

Item	Definition
Server IP	The IP address of RADIUS server.
Shared Secret	The shared secret of RADIUS server.
Server Port	The UDP port used by the RADIUS server.
Test Setting	Use user name and password to authenticate with RADIUS server, and save information of RADIUS server if authentication succeeds.
Skip Test	Save information of the RADIUS server without test.

4.1.3 Using LDAP Configuration for Authentication

System Tab > Security > LDAP configuration

The screenshot displays the PDU Remote Management web interface. At the top left, the logo "PDU Remote Management" is visible. In the top right, there is a user status bar showing "Administrator login from 192.168.25.28" and a "[Logout]" link. Below this is a navigation menu with items: "Summary", "PDU", "Envir", "Log", "System" (highlighted), and "Help".

The main content area is titled "LDAP Configuration". It features a table with the following structure:

LDAP Server	Type	LDAP SSL
<input type="button" value="Add Server"/>		

On the left side of the interface, there is a dark blue sidebar menu with the following categories and items:

- General
- Security
 - Authentication
 - Local Configuration
 - RADIUS Configuration
 - LDAP Configuration (highlighted)
 - Session Control
- Network Service
- Notification
- Reset/Reboot
- About

Click **Add Server** to enter **LDAP Server Configuration Page** to create a server.

LDAP Server Configuration Page

PDU Remote Management

Administrator login from 192.168.25.28 [\[Logout\]](#)

Summary |
 PDU |
 Envir |
 Log |
 System |
 Help

LDAP Server Configuration

General

Security

Authentication

Local Configuration

RADIUS Configuration

LDAP Configuration

Session Control

Network Service

Notification

Reset/Reboot

About

LDAP Server

LDAP SSL Enable

Port [default:389]

Base DN

Login Attribute

Generic LDAP Server
 Active Directory
 AD Domain

Test Setting
 User Name
 Password

Skip Test

Item	Definition
LDAP Server	The IP address of LDAP server.
LDAP SSL	To communicate with LDAP server by LDAPS.
Port	The TCP port used by the LDAP(S) server.
Base DN	The base DN of LDAP server.
Login Attribute	The login attribute of LDAP user entry. (ex: cn or uid)
Generic LDAP Server	The type of LDAP server.
Active Directory	Select LDAP server type as Windows AD
AD Domain	The AD Domain of the Active Directory server.
Test Setting	Use user name and password to authenticate with LDAP server, and save information of LDAP server if authentication succeeds.
Skip Test	Save information of the RADIUS server without test.

Intelligent PDU Web Interface

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4.2 Timeout Setting

Configure the idle login sessions. See **System > Security > Session Control**.

System > Security > Session Control

The screenshot shows the PDU Remote Management web interface. At the top left is the logo 'PDU Remote Management'. At the top right, it says 'Administrator login from 192.168.25.28 [Logout]'. Below that is a navigation menu with 'Summary', 'PDU', 'Envir', 'Log', 'System' (highlighted), and 'Help'. On the left side, there is a sidebar menu with categories: 'General', 'Security' (highlighted), 'Authentication', 'Local Configuration', 'RADIUS Configuration', 'LDAP Configuration', 'Session Control' (highlighted), 'Network Service', 'Notification', 'Reset/Reboot', and 'About'. The main content area is titled 'Session Control' and 'Login'. It contains a 'Timeout' field with a dropdown menu set to '10' and the text 'minute(s)'. Below the field are 'Apply' and 'Reset' buttons.

Item	Definition
Login Session	
Timeout	The time in minutes that the system waits before automatically logging off.

5. Network Service

The following provides the network configurations.

5.1 TCP/IPv4 Setting

Display the current TCP/IPv4 settings and allow users to select the option to obtain TCP/IP settings by DHCP. See **System > Network Service > TCP/IPv4**.

System > Network Service > TCP/IPv4

The screenshot shows the 'PDU Remote Management' web interface. The top navigation bar includes 'Summary', 'PDU', 'Envir', 'Log', 'System', and 'Help'. The left sidebar lists various services under 'Network Service', with 'TCP/IPv4' selected. The main content area is titled 'TCP/IPv4' and is divided into three sections: 'Current Configuration', 'DHCP', and 'Manual'. The 'Current Configuration' section displays the following values: IP Address (192.168.26.21), Subnet Mask (255.255.255.0), Gateway (192.168.26.254), and DNS Server (0.0.0.0). The 'DHCP' section has two checked options: 'Enable DHCP' and 'Obtain DNS Address from DHCP'. The 'Manual' section has input fields for IP Address (192.168.26.21), Subnet Mask (255.255.255.0), Gateway (192.168.26.254), and DNS Server (0.0.0.0). At the bottom, there are 'Apply' and 'Reset' buttons.

Item	Definition
Current Configuration	Display the current TCP/IP settings: IP Address, Subnet Mask, Gateway, and DNS server.
DHCP	<p>*Enable DHCP: Select this option to get IP address, Subnet Mask, and Gateway from DHCP.</p> <p>*Obtain DNS Address from DHCP: Select this option to get DNS by DHCP if DHCP is enabled.</p>
Manual	<p>Unselect Enable DHCP first.</p> <p>Enter the TCP/IP settings manually and click Apply.</p>

5.2 TCP/IPv6 Setting

Display the current TCP/IPv6 settings and allow users to assign the IPv6 address either by router control or manually. See **System > Network Service > TCP/IPv6**.

System > Network Service > TCP/IPv6

The screenshot shows the PDU Remote Management web interface. At the top, it displays the administrator login information and a navigation menu with options: Summary, PDU, Envir, Log, System (selected), and Help. The main content area is titled 'TCP/IPv6' and contains several sections:

- IPv6 Interfaces:** A table with columns 'Type' and 'IPv6 Address'.
- IPv6 Gateway:** Displays 'N/A'.
- IPv6 Configuration:** Includes three settings:
 - Access: Enabled
 - Address Mode: Router Control
 - Address Mode: Manual
- Manual IPv6 Address:** A section with a 'System IP Address' label and an input field containing '::'. Below this are 'Apply' and 'Reset' buttons.

Item	Definition
IPv6 Interface	Displays the current IPv6 address.
IPv6 Gateway	Displays the current IPv6 gateway.
IPv6 Configuration	
Allow Access	Enable/Disable IPv6 service.
Address Mode: Router Control	The IPv6 address is assigned through the method (Stateless Address Auto configuration, Stateless DHCPv6, or Stateful DHCPv6) determined by the router's configuration.
Address Mode: Manual	The IPv6 address is assigned manually.
Manual IPv6 Address	Enter the IPv6 address manually and click Apply when the Address Mode: Manual option is selected.

5.3 SNMPv1 Service Setting

Allow users to perform SNMPv1 configurations. See **System Tab > Network Service > SNMPv1 Service**.

System Tab > Network Service > SNMPv1 Service

The screenshot shows the PDU Remote Management web interface. The top navigation bar includes the logo, user information (Administrator login from 192.168.25.28), and a menu with options: Summary, PDU, Envir, Log, System (highlighted), and Help. The left sidebar contains a menu with categories: General, Security, Network Service (highlighted), and Notification. Under Network Service, the following options are listed: TCP/IPv4, TCP/IPv6, SNMPv1 Service (highlighted), SNMPv3 Service, Web Service, Console Service, and FTP Service. Under Notification, the options are: Reset/Reboot and About. The main content area is titled 'SNMPv1' and contains the following sections:

- SNMPv1 Service**: A section with a checkbox for 'Allow Access' which is checked. Below it are 'Apply' and 'Reset' buttons.
- SNMPv1 Access Control**: A table with the following data:

Community	IP Address	Access Type
public	0.0.0.0	Read Only
private	0.0.0.0	Read/Write
public2	0.0.0.0	Forbidden
public3	0.0.0.0	Forbidden

Item	Definition
SNMPv1 Service	
Allow Access	Enable or disable the SNMPv1 service.

Click the **SNMP Trap Community** field to enter the **SNMPv1 Page**. Users can configure the SNMPv1 settings.

SNMPv1 Page

PDU Remote Management

Administrator login from 192.168.25.28 [\[Logout\]](#)

Summary | PDU | Envir | Log | **System** | Help

SNMPv1

Community:

IP Address:

Access Type: ▼

Item	Definition
Community	The name used to access the SNMP community from a Network Management System (NMS). Its maximum length is 15 characters.
IP Address (IPv6 Support)	The IP address or IP address mask can be accessed by the NMS. A specific IP address allows access only by the NMS with the specified IP Address. The “255” is regarded as the subnet mask and the rules are as follows: *192.168.20.255: Access only by an NMS on the 192.168.20.0 segment. *192.255.255.255: Access only by an NMS on the 192.0.0.0 segment. *0.0.0.0 (the default setting) or 255.255.255.255: Access by any NMS on any segments.
Access Type	The allowable action for the NMS through the community and IP address. *Read Only: GET at any time but cannot SET. *Write/Read: GET at any time. SET at any time unless someone logs in to the Web interface. *Forbidden: No GET or SET.

5.4 SNMPv3 Service Setting

Users can perform SNMPv3 configurations. Authentication type or privacy type are provided to strengthen security. See **System Tab > Network Service > SNMPv3 Service**.

System Tab > Network Service > SNMPv3 Service

The screenshot shows the 'SNMPv3 Service' configuration page. The 'Allow Access' checkbox is unchecked. Below it are 'Apply' and 'Reset' buttons. The 'SNMPv3 Access Control' table is as follows:

User Name	Status	IP Address	Authentication Protocol	Privacy Protocol
cyber snmpv3 user1	Disabled	0.0.0.0	None	None
cyber snmpv3 user2	Disabled	0.0.0.0	None	None
cyber snmpv3 user3	Disabled	0.0.0.0	None	None
cyber snmpv3 user4	Disabled	0.0.0.0	None	None

Item	Definition
SNMPv3 Service	
Allow Access	Enable or disable the SNMPv3 service.

Click the **User Name** field to enter the **SNMPv3 Page**. Users can configure SNMPv3 settings.

SNMPv3 Page

PDU Remote Management

Administrator login from 192.168.25.28 [\[Logout\]](#)

Summary | PDU | Envir | Log | System | Help

General

Security

Network Service

TCP/IPv4

TCP/IPv6

SNMPv1 Service

SNMPv3 Service

Web Service

Console Service

FTP Service

Notification

Reset/Reboot

About

SNMPv3

Access Enabled

User Name

Authentication Password

Privacy Password

IP Address

Authentication Key

Privacy Key

Item	Definition
Access	Enable or disable the SNMPv3 service.
User Name	The name that identifies the SNMPv3 user. It must be 1 to 31 characters long.
Authentication Password	The password used to generate the key for authentication. It must be 16 to 31 characters long.
Privacy Password	The password used to generate the key for encryption. It must be 16 to 31 characters long.
IP Address (IPv6 Support)	<p>The IP address or IP address mask that can be accessed by the NMS. A specific IP address allows access only by the NMS with the specified IP Address. The “255” is regarded as the subnet mask and the rules are as follows:</p> <p>*192.168.20.255: Access only by an NMS on the 192.168.20.0 segment.</p> <p>*192.255.255.255: Access only by an NMS on the 192.0.0.0 segment.</p> <p>*0.0.0.0 (the default setting) or 255.255.255.255: Access by any NMS on any segments.</p>
Authentication Key	The hash type for authentication.
Privacy Key	The privacy type for encrypting and decrypting data.

5.5 Web Service

Select the **Enable HTTP/HTTPS** option to access the HTTP/HTTPS Service and configure HTTP/HTTPS port settings. See **System Tab > Network Service > Web Service**.

System Tab > Network Service > Web Service

The screenshot shows the 'Web Service' configuration page in the PDU Remote Management interface. The page is titled 'Web Service' and has a navigation menu on the left. The main content area is divided into three sections: 'Access', 'Http Settings', and 'Https Settings'. The 'Access' section has three radio buttons: 'Enabled HTTP' (selected), 'Enabled HTTPS', and 'Disabled'. The 'Http Settings' section has an input field for 'Http Port' with the value '80' and a range '[80 or 5000-65535]'. The 'Https Settings' section has an input field for 'Https Port' with the value '443' and a range '[443 or 5000-65535]'. Below the 'Https Settings' section, there are two links: 'Valid Certificate' and 'Upload Certificate'. At the bottom of the page, there are two buttons: 'Apply' and 'Reset'.

Item	Definition
Access	
Allow Access	<p>Enable or disable HTTP/HTTPS service.</p> <p>HTTPS supports the following encryption algorithms:</p> <ul style="list-style-type: none"> ● AES (256/128 bits) ● Camellia (256/128 bits) ● 3DES (168 bits) ● DES (168 bits) ● RC4 SHA (128) ● RC4 MD5 (128)
Http Settings	

Item	Definition
HTTP Port	<p>The TCP/IP port of the Hypertext Transfer Protocol (HTTP); 80 is the default value.</p> <p>Users can also change the port setting to any unused port from 5000 to 65535 to enhance security.</p>
Https Settings	
Https Port	<p>The TCP/IP port of the Hypertext Transfer Protocol Secure (HTTPS); 443 is the default value.</p> <p>Users can also change the port setting to any unused port from 5000 to 65535 to enhance security.</p>
Certificate Status	<p>*Valid Certificate: Display the detailed certificate information.</p> <p>*Upload Certificate: Upload a certificate and replace the current one. The certificate must be uploaded in standard PEM (Privacy Enhanced Mail) format.</p>

Click the **Valid Certificate** link, and the **Installed Certificate Page** will appear.

Installed Certificate Page

PDU Remote Management Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | Log | **System** | Help

Installed Certificate

Issue to

Common Name(CN)	Power Distribution Unit
Organization(O)	CyberPower Systems, Inc.
Organization Unit(OU)	PDU
Locality(L)	Unknown
Country	Unknown
Serial Number	11:1C:76:14

Issue by

Common Name(CN)	Power Distribution Unit
Organization(O)	CyberPower Systems, Inc.
Organization Unit(OU)	PDU

Validity

Issued from	2013/05/28
Expires on	2023/05/26

Fingerprints

SHA	44 C0 C5 CF 64 41 A0 A5 98 DF 0A B9 B1 BA 2F 3E FD 2B 84 CF
MD5	DD 84 A4 A3 38 3C BE 3E D9 09 FF 73 6D 53 3E 5C

« Back

Click the **Upload Certificate** link, and the **Change Certificate Page** will appear.

Change Certificate Page

PDU Remote Management Administrator login from 192.168.25.28 [Logout]

Summary | PDU | Envir | Log | **System** | Help

Upload and Replace

Upload Certificate

« Back

5.6 Console Service

Select the **Enable** options to allow access using Telnet/SSH service and configure Telnet/SSH port settings. See **System Tab > Network Service > Console Service**.

System Tab > Network Service > Console Service

PDU Remote Management Administrator login from 192.168.25.28 [Logout](#)

Summary | PDU | Envir | Log | **System** | Help

Console

Access

Allow Access Enable Telnet
 Enable SSH
 Disabled

Telnet Settings

Telnet Port [23 or 5000-65535]

SSH Settings

SSH Port [22 or 5000-65535]
 Hostkey Status **Valid**
[Upload Hostkey](#)
 Hostkey Fingerprint: **D6 58 DD D3 A6 DF 01 29 50 02 B7 0C 76 03 91 29**

Item	Definition
Access	
Allow Access	Enable access using Telnet or SSH version 2, which transmits user names, passwords, and data in an encrypted format.
Telnet Settings	
Telnet Port	The TCP/IP port that Telnet uses to communicate; 23 is the default value. Users can change the port setting to any unused port from 5000 to 65535 to enhance security. Note: Telnet Client requires users to enter a space and the port number after the PDU IP address on the command line to access the control console.
SSH Settings	

Item	Definition
SSH Port	The TCP/IP port that SSH uses to communicate; 22 is the default value. Users can change port setting to any unused port from 5000 to 65535 to enhance security.
Hostkey Status	Display the status of hostkey fingerprint to show whether it is valid or invalid. Click Upload Hostkey to upload or change hostkey.
Hostkey Fingerprint	The hostkey fingerprint uploaded by users will be displayed in this field.

5.7 FTP Service

Allow users to enable/disable the FTP server service and configure the TCP/IP port of the FTP server. **The FTP server is used for upgrading Firmware.** See [System Tab > Network Service > FTP Service](#).

System Tab > Network Service > FTP Service

Item	Definition
Allow Access	Enable FTP server access.
Access Port	The TCP/IP port of the FTP server; 21 is the default value. Users can change port setting to any unused port from 5000 to 65535 to enhance security.

6. PDU Information

Display the system information of the PDU. See **System > About**.

PDU Remote Management

Administrator login from 192.168.25.28 [\[Logout\]](#)

Summary | PDU | Envir | Log | System | Help

General
Security
Network Service
Notification
Reset/Reboot
About

About

Information

Model	PDU81001
Serial Number	123456789011
Hardware Version	1.0
Firmware Version	1.0.5
Firmware Update Date	2017/07/20
MAC Address	00-0C-15-40-50-72

Save/Restore Configuration

Save Configuration	<input type="button" value="Save"/>
Restore Configuration	<input type="button" value="Select File"/>
<input type="button" value="Submit"/>	

Item	Definition
Information	
Model Name	Model name of the PDU.
Serial Number	Serial Number of the PDU.
Hardware Version	The hardware version of the PDU.
Firmware Version	The current firmware version installed on the PDU.
Firmware Updated Date	The date the firmware was last updated.
MAC Address	MAC address of the PDU. Note: The MAC address is shown on the label on the back of the PDU and via the LCD screen on the PDU.
Save/Restore Settings	
Save Configuration	Click Save to save the PDU configuration file to local computer. The text file name will have a default format of YYYY_MM_DD_HHMM.txt.
Restore Configuration	To restore a configuration that has been saved earlier. Click Select File to import an existing configuration file and then click Submit .

Appendix A: PDU Network Daisy Chain

The daisy-chain function allows up to four PDUs to be connected together to be monitored and controlled from one IP address.

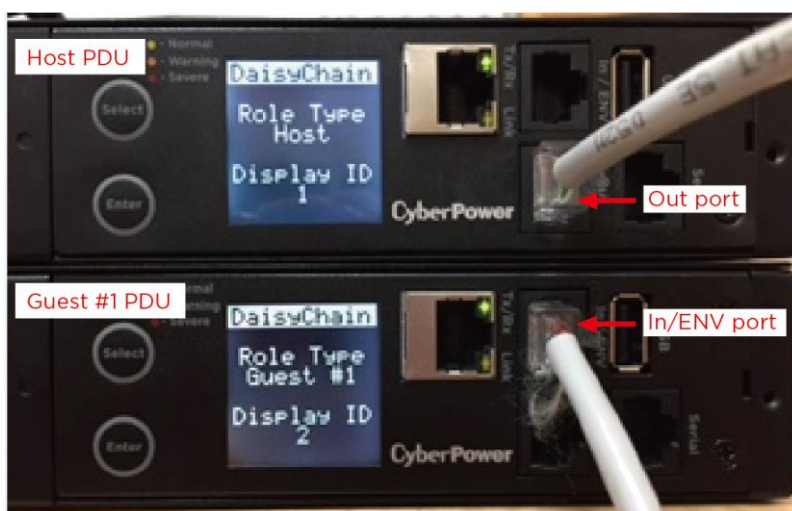


When PDUs are connected, two roles are defined: Host and Guest. Up to three Guest PDUs can be connected to one Host PDU. The Guest PDUs will be recognized by serial number and their order within the daisy-chain.

Note: To perform the daisy-chain function, the firmware version of the connected PDUs needs to be the same (v1.08 or above).

How to connect the PDUs together?

Use one Ethernet cable and connect one end of it to the daisy-chain (Out) port on the Host PDU and the other end to the daisy-chain (In/ENV) port on the Guest 1 PDU to connect the PDUs (as shown below).



What remote management protocols are supported in PDU daisy-chains?

Currently users can monitor and control daisy-chained PDUs through Web interface (HTTP/HTTPS) or SNMP protocols.

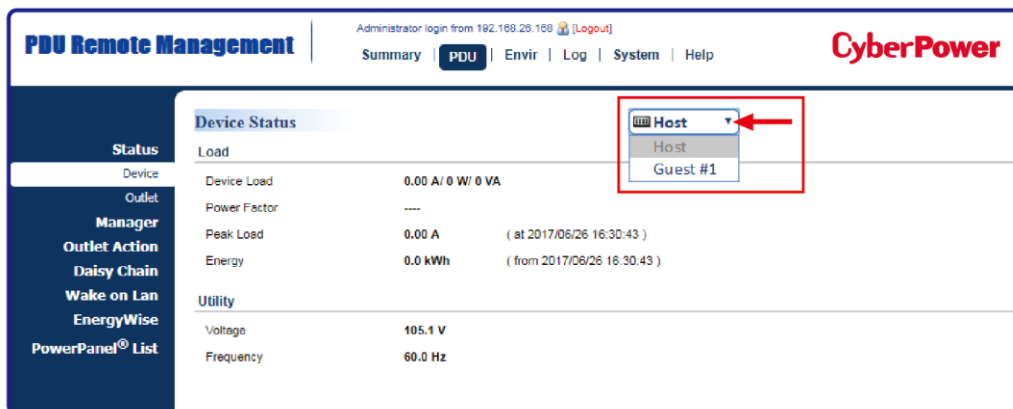
What functions on the Web pages does daisy-chain support?

Please find in below table:

Summary	
PDU	Device Status
	Outlet Status
	Device Manager
	Outlet Manager
	Outlet Control
	Outlet Schedule
Log	Status Records
	Energy Records
	Graphing
System	Identification

How to switch between Host and Guest PDUs on the Web interface?

Functionality supported by daisy-chained PDUs will have the Host/ Guest # drop down menu displayed on the Web interface (as shown below).

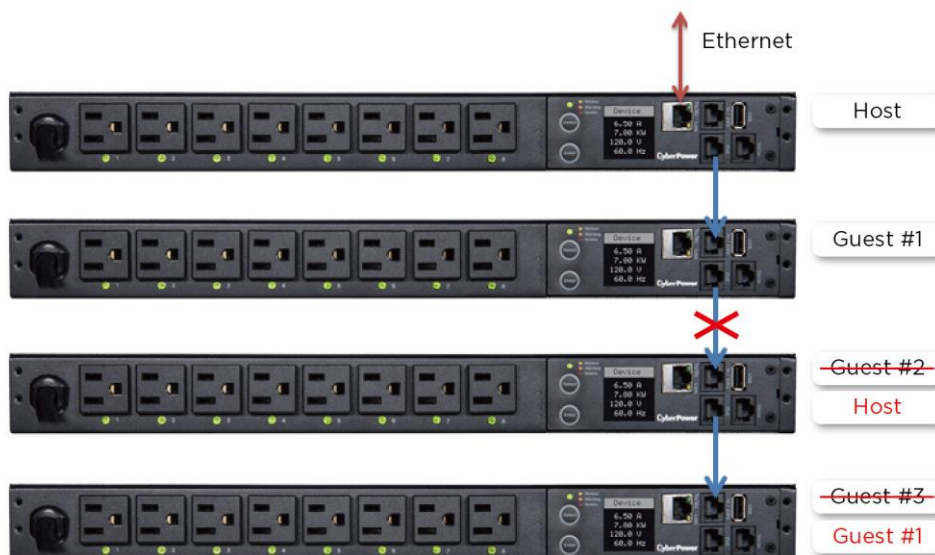


Can I upgrade the firmware version of the Guest PDUs through the Host PDU?

Yes, you can upgrade the firmware using the Upgrade and Configuration Utility, FTP (network connection required), or USB port. Once the Host completes the PDU firmware upgrade, it will trigger its Guest PDUs to upgrade the firmware automatically. It takes about 5 minutes for the Guest PDUs to upgrade, regardless of the number of PDUs in the series.

What will happen if an Ethernet cable is disconnected in the PDU daisy-chain?

For example, if four PDUs are connected and the cable connecting Guest 1 and 2 is disconnected, then Guest 2 and 3 will no longer be detected by the Host PDU. An event showing that Guest 2 and 3 are removed will be recorded in the Host PDU. Meanwhile, Guest 2 and 3 will create a new daisy-chain where Guest 2 becomes a Host and Guest 3 becomes Guest 1 to the new Host.



In the above example, if the disconnected Ethernet cable is re-connected, will the role of the PDUs stay the same?

Yes, when the disconnected cable between Guest 1 and 2 is re-connected, Guest 2 and 3 will revert to their previous roles.

What happens if one PDU in the daisy-chain is powered off?

For example, if four PDUs are connected and Guest 1 is powered off, an event showing that Guest 1, 2 and 3 are removed will be recorded in the Host PDU. Guest 2 and 3 will not create another daisy-chain.

Does the Host PDU record the logs of the Guest PDUs and itself?

Yes, the Host PDU records the logs from all Guest PDUs daisy-chained to it.

Will the Logs of the Guest PDUs recorded in the Host PDU be cleared if the Guest PDUs are removed from the Host PDU?

No, the Logs of the Guest PDUs will remain even after the Guest PDUs are removed.

Does the Host PDU record the Status Records of the Guest PDUs and itself?

Yes, the Host PDU records the Status Records for all the PDUs in the daisy-chain.

Will the Status Records of the Guest PDUs logged in the Host PDU be cleared if the Guest PDUs are disconnected from the Host PDU?

Yes, once the Guest PDUs are removed, the Status Records logged in the Host PDU will be cleared. As long as the Host PDU does not connect to other PDUs, the Status Records of the disconnected PDU can be displayed when it is re-connected to the Host PDU. If the Host PDU connects to different PDUs, the Status Records of the removed PDU will be entirely cleared.

Are the Guest PDUs able to connect to the network when they are daisy-chained?

Yes, even when the PDUs are daisy-chained, the Guest PDUs are able to connect to the network directly. Note that a Guest PDU will require having its own Ethernet cable connected to the network.

What will happen if a 5th PDU is added to a daisy-chain?

The maximum number of PDUs that can be connected in one daisy-chain is 4. The daisy-chain functionality will not work until the fifth PDU is removed.

What is the maximum recommended length of the Ethernet cable to daisy-chain the PDUs?

50 ft (15 m)

Troubleshooting

Problem	Possible Cause	Solution
The PDUs are connected but the daisy chain function is not working.	-The firmware version does not support daisy chain. -The PDUs have different firmware version.	Check the firmware version of each PDU and upgrade to v1.08 or above.
I cannot set the EnergyWise configuration for Guest PDUs.	Only the Host PDU supports this function.	N/A
I cannot set the WoL for Guest PDUs.	Only the Host PDU supports this function.	N/A

Appendix B: Firmware Upgrade

By upgrading the Firmware, you can obtain new features and updates/improvements to existing functionality. To ensure the firmware is kept up to date, please regularly visit our website to see if there is any updated firmware version available. There are three methods for upgrading the PDU firmware. Please follow the instructions below for the method that is appropriate for your application. There are two files to update in order to upgrade the firmware version:

- * cpsmpdumafw_XXX.bin
- * cpsmpdumadata_XXX.bin

Note that the XXX is not part of the file name but is where the version number in the filename is given.

Prior to performing a firmware update, please:

- Download the latest firmware from www.cyberpower.com
- Extract the downloaded firmware file to your local "C:\\" drive

Note:

1. The FTP service needs to be enabled before attempting to execute a firmware upgrade. Please refer to 5.7 FTP Service to make sure that FTP is enabled.
2. Please do not turn the PDU off when processing the Firmware upgrade. PDU outlets will remain powered on while the firmware update takes place. Only the PDU LCD screen will reboot.
3. The PDU LCD screen will reboot during the firmware update process. This DOES NOT cause the PDU outlets to reboot.

Option 1: Single Device Upgrade via FTP

Use the following steps to upgrade the firmware.

1. Open a command prompt window and navigate to "C:\\".
2. Login to the PDU with FTP command, type
 - C:\>ftp
 - ftp> open 192.168.22.126 21 (for example: 192.168.22.126 is the current IP of the PDU and 21 is the default ftp port for the PDU)
 - Connected to 192.168.22.126.
 - 220 CyberPower FTP Server Ready.
 - User (192.168.22.126:(none)):cyber
 - 331 User name okay, need password.
 - Password:
 - 230 User logged in, proceed.
 - ftp>

3. Upload the cpsmpdumafw_XXX.bin, type
 - ftp > bin
 - ftp > put cpsmpdumafw_XXX.bin
4. Upgrade complete, type
 - ftp > quit
5. The system will reboot after you type "quit". This reboot will take approx. 30 seconds.
6. Login to the PDU via FTP again, type
 - C:\>ftp
 - ftp> open 192.168.22.126 21 (for example: 192.168.22.126 is the current IP of the PDU and 21 is the default ftp port for the PDU)
 - Connected to 192.168.22.126.
 - 220 CyberPower FTP Server Ready.
 - User (192.168.22.126:(none)):cyber
 - 331 User name okay, need password.
 - Password:
 - 230 User logged in, proceed.
 - ftp>
7. Upload cpsmpdumadata_XXX.bin, type
 - ftp > bin
 - ftp > put cpsmpdumadata_XXX.bin
8. Upgrade complete, type
 - ftp > quit
9. The system will reboot after you type "quit".

Option 2: Single or Multiple Device Upgrade (recommended)

Use the following steps to upgrade the firmware.

1. Download the **Upgrade and Configuration Utility** from www.cyberpower.com
2. Open the **Upgrade and Configuration Utility** from Start > All Programs > CyberPower Upgrade and Configuration Utility.
3. Wait for search to finish (shown in Figure 1).

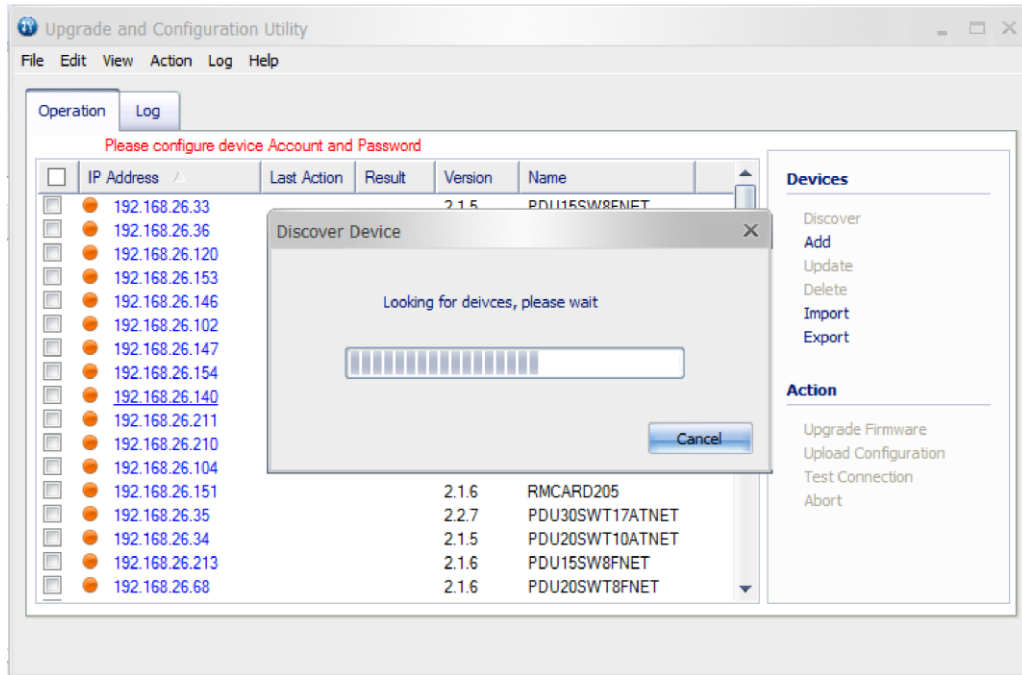


Figure 1.

4. Check the checkbox to select devices listed in the **Operation View** (Shown in Figure 2).

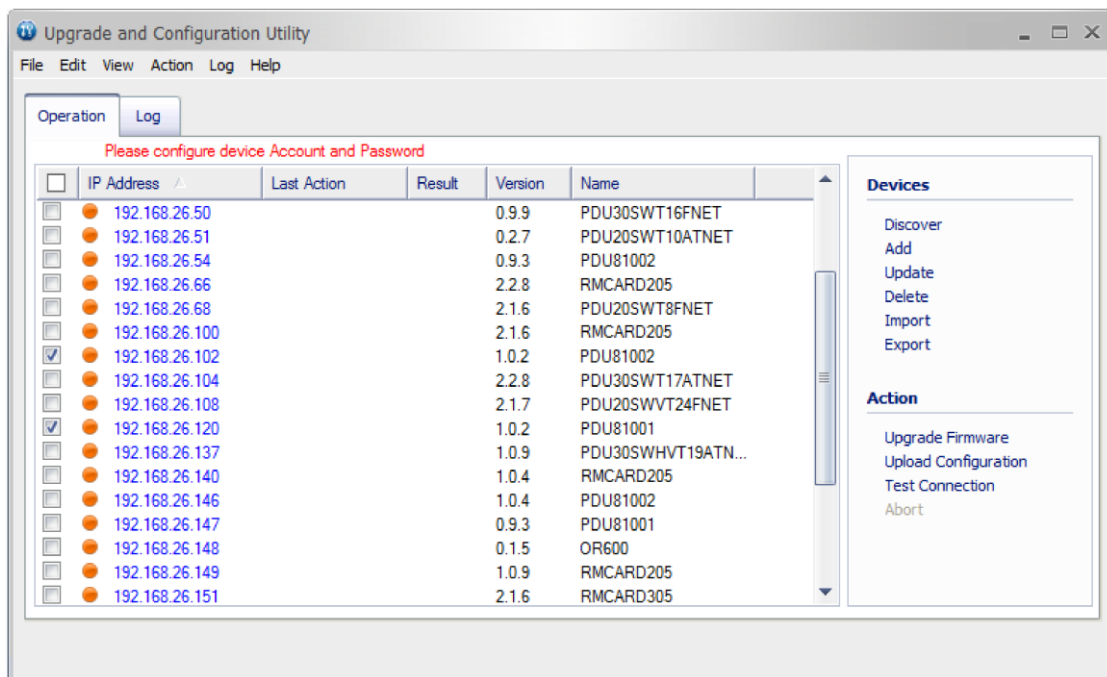


Figure 2

5. Make sure **Account** and **Password** are valid on selected devices (Shown in Figure 3).

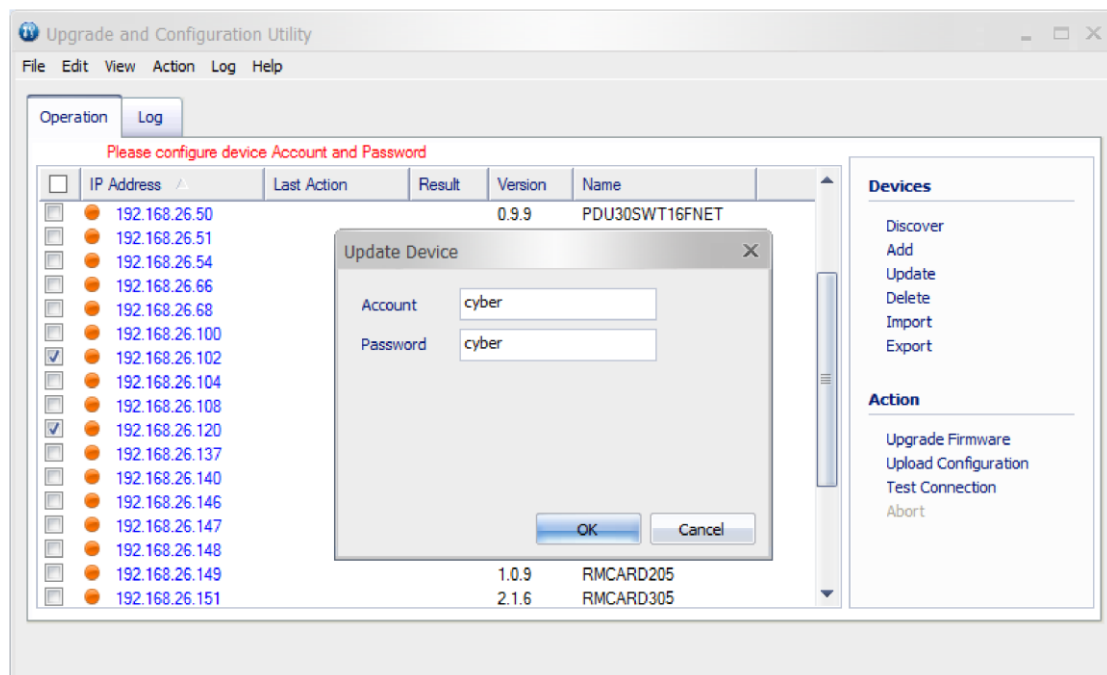


Figure 3.

6. Select **Upgrade Firmware**.

7. Click **Browse** to locate and select the firmware and data file to be updated (Shown in Figure 4).

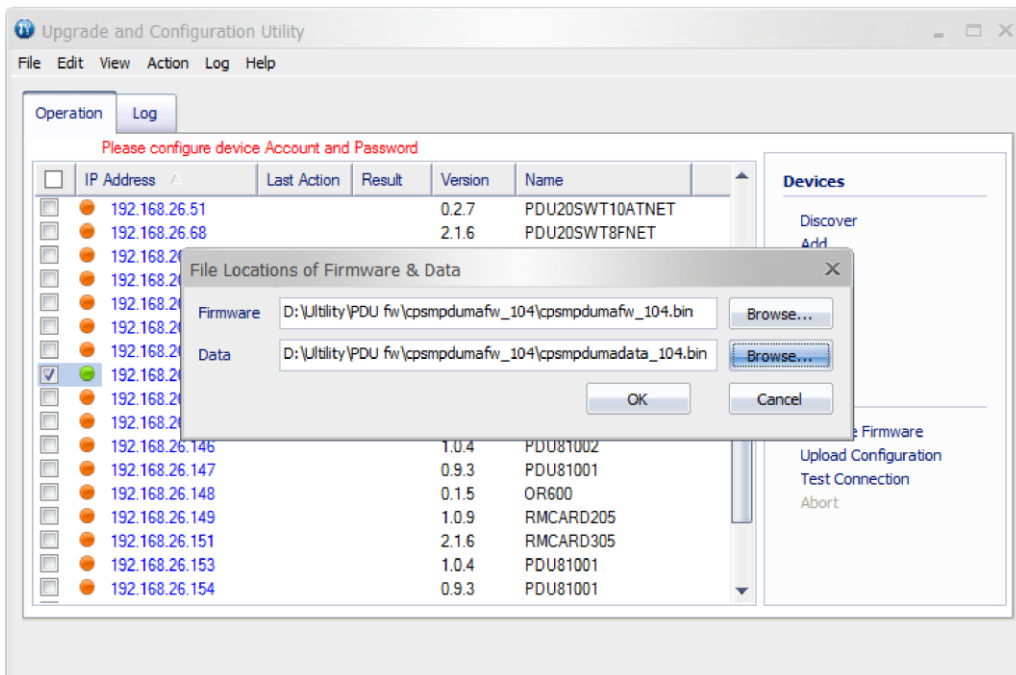


Figure 4.

8. Click **OK** in the **Upgrade Firmware** confirmation window (Shown in Figure 5).

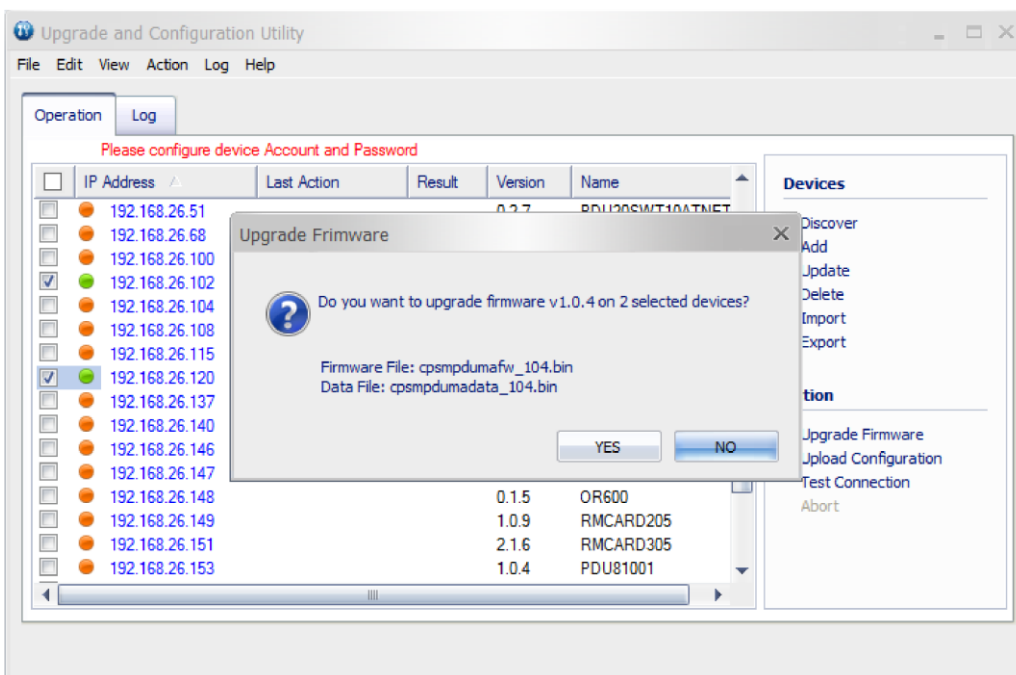


Figure 5.

9. The upgrade progress bar will show in **Last Action** column (Shown in Figure 6).

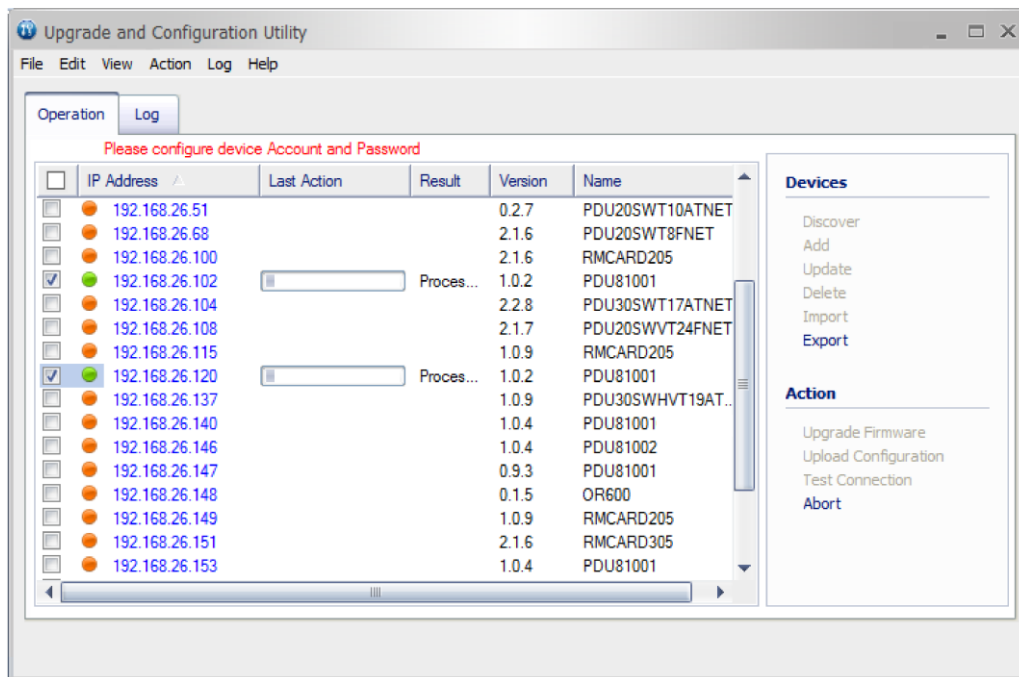


Figure 6.

10. The result of firmware upgrade will show in **Result** column (Shown in Figure 7).

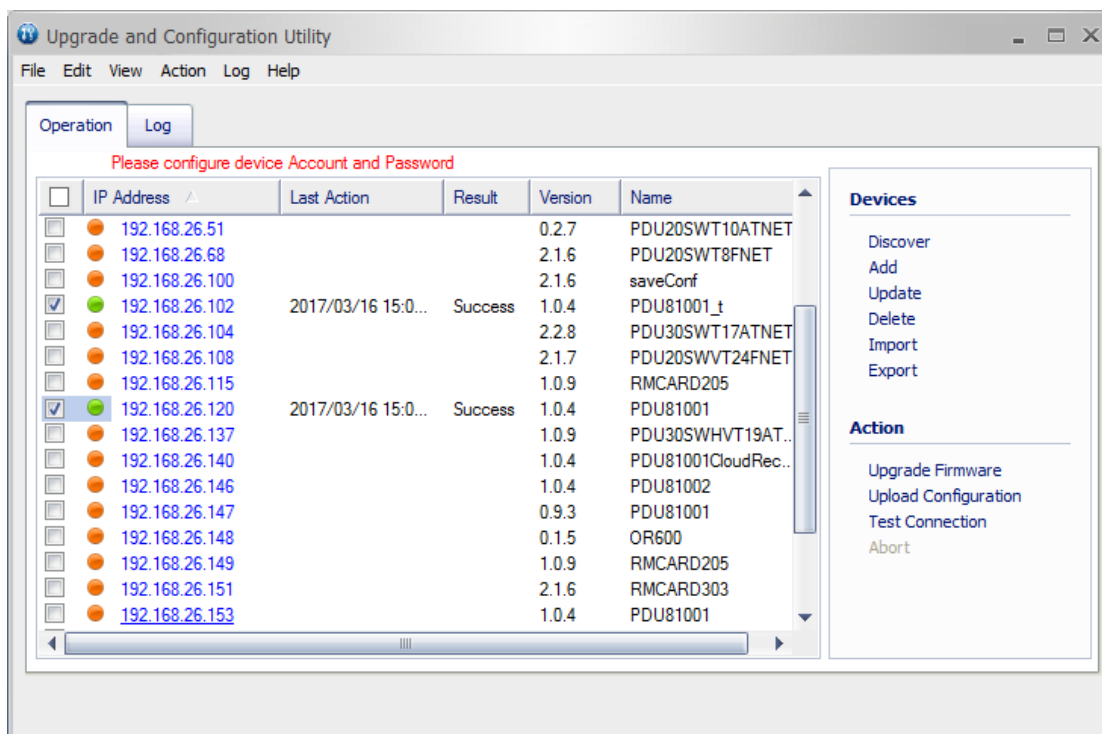


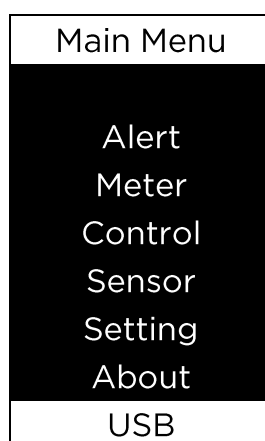
Figure 7.

Note: If you don't want to wait for the firmware upgrade, you can stop the process by clicking **Abort** in the **Action** menu. However, this is not recommended because the **Abort** action may cause the device to malfunction.

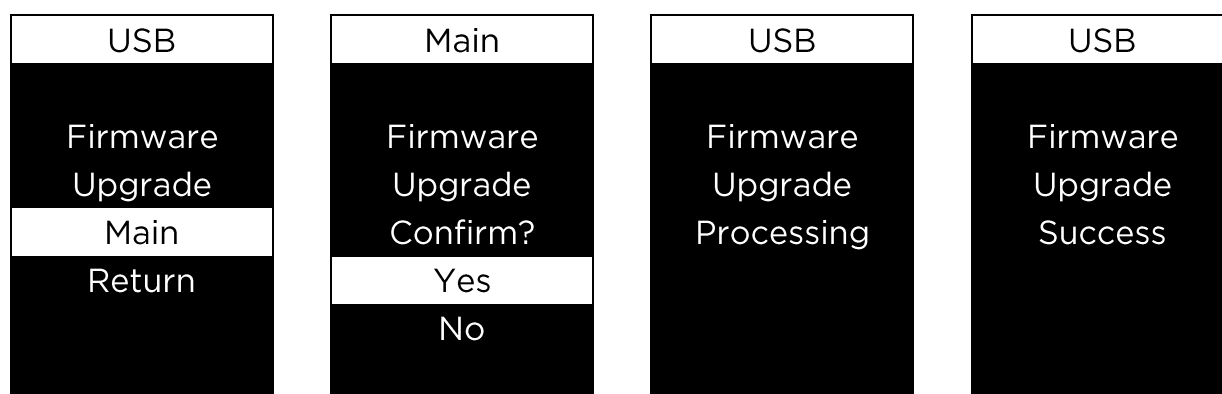
Option 3: Use a USB Flash Drive

Use the following steps to upgrade the firmware.

1. Download the latest firmware from www.cyberpower.com
2. Extract the file to the root directory of a USB flash drive with **FAT32 formatting**. Please note that the two files below should be available in order to complete the firmware upgrade process:
 - *cpsmpdumadata_xxx.bin
 - *cpsmpdumafw_xxx.bin
3. Plug the USB drive into the PDU USB port and press **Enter** on the PDU LCD screen to enter **Main Menu**. The USB option will be displayed.



4. Select **USB** and press **Enter** button to enter **Firmware Upgrade** menu.
5. Select **Main** and **Yes** to start the upgrade process.



6. The PDU will reboot after the process is completed.

Note: You can check to see if the firmware upgrade is successful by checking the “Firmware version” on the [System->About] webpage. You can also check Firmware Version on LCD screen. Press **Enter** on the LCD screen to enter **Main Menu**. Select **About** and press **Enter** to see the PDU information. Select **Firmware Version** to check the PDU Firmware Version.

Option 4: Use Secure Copy (SCP) command

Use the following steps to update the firmware via SCP.

Note: Only firmware version 1.10 and above supports the functionality to update firmware via SCP.

For Windows Users:

1. Download any PuTTY Secure Copy client (PSCP) utility.
2. Save the firmware files and the PSCP Utility in the same folder.
3. Open the Command Line Interface and change the path to where the firmware files and the PSCP Utility are saved.
4. Enter the following command to perform the firmware update:
`pscp -scp <filename> <user>@<IP address of PDU>:`

Note:

- (1) The SSH setting on the PDU must be Enabled.
- (2) <filename> is the filename of the firmware file. There are two firmware files to upload: `cpsmpdumafw_XXX.bin` and `cpsmpdumadata_XXX.bin`. In order to upgrade the firmware version both files need to be uploaded. Only one firmware file can be uploaded at a time, it is recommended to upload the firmware file `cpsmpdumafw_XXX.bin` first followed by the data file `cpsmpdumadata_XXX.bin`.
- (3) <user> is the username of the SSH account on the PDU.
- (4) Ensure to add ":" after the IP address.

For example:

```
pscp -scp cpsmpdumafw_XXX.bin cyber@192.168.1.100:
```

Note: `cpsmpdumafw_XXX.bin` is the firmware file of the version being updated.

5. After executing the command, a message may appear asking if you trust the host. To continue type "y" for yes within 10 seconds.
6. On the next screen enter the PDU password. The firmware file transfer may take a couple minutes to complete. Please wait until the progress indicator displays 100%. The system will automatically log out and reboot after the transfer is complete.
7. Repeat steps 4 through step 6 to upload the data file `cpsmpdumadata_XXX.bin` to complete the firmware update process.
8. If the firmware file transfer is unsuccessful you will see an error message. Attempt to retype the command and execute it again.

For Linux, MacOS and Unix Users:

1. Install the related distribution of an SSH or SCP client, for example Openssh client.
2. Open the Terminal and change the path to where the firmware files are saved.
3. Enter the following Command to perform firmware update:

```
scp <filename> <user>@< IP address of PDU>:
```

Note:

- (1) The SSH setting on the PDU must be Enabled.
- (2) <filename> is the filename of the firmware file. There are two firmware files to upload: `cpsmpdumafw_XXX.bin` and `cpsmpdumadata_XXX.bin`. In order to upgrade the firmware version both files need to be uploaded. Only one firmware file can be uploaded at a time, it is recommended to upload the firmware file `cpsmpdumafw_XXX.bin` first followed by the data file `cpsmpdumadata_XXX.bin`.
- (3) <user> is the username of the SSH account on the PDU.
- (4) Ensure to add ":" after the IP address.

For example:

```
scp cpsmpdumafw_XXX.bin cyber@192.168.1.100:
```

Note: `cpsmpdumafw_XXX.bin` is the firmware file of the version being updated.

4. After executing the command, a message may appear asking if you trust the host. To continue type "y" for yes within 10 seconds.
5. On the next screen enter the PDU password. The firmware file transfer may take a couple minutes to complete. Please wait until the progress indicator displays 100%. The system will automatically log out and reboot after the transfer is complete.
6. Repeat steps 3 through step 5 to upload the data file `cpsmpdumadata_XXX.bin` to complete the firmware update process.
7. If the firmware file transfer is unsuccessful you will see an error message. Attempt to retype the command and execute it again.

Contact Information

Feel free to contact our Tech Support department with installation, troubleshooting, or general product questions.

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