PDU Utility

User Manual



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1. Introduction

General

PDU Utility is PDU monitoring, management software. It has been designed to provide information about power conditions and status of PDU and power environment.

Its functions have

- 1. Monitor a large amount of PDU power consumption simultaneously.
- 2. Group Management of a large amount of the PDU.
- 3. Provide power consumption chart for daily monthly or the user-defined period report.
- 4. Send the email and trap to the specific account when the power event occurs.
- 5. Forward the trap to the user-defined account.
- 6. Events can be logged and exported to the Syslog server.

2. Installation

Install procedure:

CD Auto play screen. Please install the software step by step.



Note:

- **1.** It will take several minutes if your operation system had not been installed Microsoft .NET Framework yet.
- 2. Recommend that install the PDU Utility to the server level of Windows operation system.
- 3. If install utility under Windows Vista and Win 7, you must first go to the folder of PDU and select the Properties of "PDU.exe", shown as below to check the "Run this program as an administrator". Then the utility will work normally.

 Organize • III Vie Favorite Links Documents Pictures Music Recently Changed Searches Public 	Very Copen Control Burn Name defaults Accounting.dll BaseClasses.dll DatabaseWizard DbDao.dll PDU PDU.ldb PDU.ndb PDU.rdb PDUService PDUService PDUService PDUService.InstallStat ServiceCtrl.dll SmpProtocol.dll SysConfig.dll UtilLib.dll ZedGraph.dll	PDU Properties General Compatibility Security Details Previous Versions If you have problems with this program and it worked correctly on an earlier version of Windows, select the compatibility mode that matches that earlier version. Compatibility mode Run this program in compatibility mode for: Windows XP (Service Pack 2) Settings Run in 540 x 480 screen resolution Disable visual themes Disable display scaling on high DPI settings Privilege Level Run this program as an administrator	
Folders /	`	Show settings for all users	

First time to use PDU software, you must select what kind of database that you want to record the PDU information.

- The default database is set to Microsoft Access.
- If you want to use MySQL database, you may download it from <u>http://www.mysql.org</u>
- Please note that MS-SQL are verified for MS SQL 2005.

Database Setting	10 Bread	
Database Type	MySQL/MSSQL Settings	
Microsoft Access	Host : 127.0.0.1	
🔘 МуSQL	Database :	
MSSQL	Usemame : root	
Microsoft Access Settings	Password :	
File PathName :		
C:\Program Files\ePDU\ePDU.mdb		
Select File Default File	OK	Cancel

3. PDU Utility Interface

Start

•

The Login Screen.

The default User Name is **admin**, Password is **1234**

PDU Login		ß
EL	IFOLAN	r
User Name:		
Password:		
	OK	Cancel

Easy Mode: Display all power information by graphic interface.

Note: If it is the first time to use the PDU utility, please enter "Expert Mode" to setup the utility in advance.

PDU (Easy Mode)					_ 0 X
Selection group 192.168.0.33	Information PDU Nam Model Nur IP Addres	e: PDU mber: SWH-1511A-08N s: <u>192.168.0.33</u>	n 1	Report Duration Start: 2012年 1月18日 🔍 上午 12:0 End: 2012年 1月18日 🔍 下午 11:5	9:59
	Power Inf	formation		Power Consumption Chart Currer	t 👻
2 0.1 A 12 14 16 10 10 10 10 10 10 10 10 10 10 10 10 10	A 18 20 22 24 26 28 30 32 Amp.)	Current 1 2 3 4 Temper Humi Wa Volta	5 6 7 8 ature dity tt	Power Consumption Chart 0.12 0.10 0.08 0.06 0.02 0.02 0.00 0.02 0.00 00:00 06:00 12:00 18:0 Date Time	0 00:00
	Energy in	ronnation		Event Report	
Time Today This Month Total	kWh 0.000 0.000 0.000	Kgs 0.000 0.000 0.000	\$ 0.000 0.000 0.000	2012/1/18 上午 11:37:41 PDUService - add a r	iew PDU
Normal - 5	- Warnir	ng - 0 🗸	Other PDU Status Critical - 0	Out of Reach - 0 ▼ Expert	Mode

System Information:

1. User can choose the PDU that want to monitor by "Selection". It will display PDU name, Model Number and this PDU IP address.

Power Information:

- 2. Graphic display for the PDU information.
- **3.** Selection area, use can monitor PDU by selecting Current, Temperature, Humidity, Watt and Voltage when the button light with green color.

Energy Information:

- **4.** Provide quick look by selecting "Today", "This Month" and "Total" for the following information.
- a. Main Energy that unit is kWh.
- b. Carbon Emission Data that unit is kg.
- c. Rate unit is \$ for Reference.

Data Log and Report:

5. Provide Data and Event log. Data log provide 3 different charts- Current, kWh and Voltage.

PDU Status:

 Provide all PDU status that monitored by PDU utility, included Normal, Warning, Overload, Out of Reach.
 Expert Mode: Click to enter Expert Mode.

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Expert Mode: Display all power information by table and txt interface. Provide more detail information.

PDU						
Device Data Management Sys	tem Manag	jement Help	Easy Mode		Functio	n Menu
	Group In	o Device Info	PDU Info Data Log Ever	ts Report		
	Group	Name: All De	vices			Update
	Icon	Name	IP 🔺	Group	Status	Update Time
	1	test	192.168.0.108	group	Normal	8/30/2011 1:34:54 PM
	~	PDU	192.168.0.109	group	Normal	8/30/2011 1:34:54 PM
PDU List	•	PDU	192.168.0.110	group	Power Lost or Break	8/30/2011 1:34:54 PM
	1	PDU	192.168.0.111	group	Normal	8/30/2011 1:34:54 PM
	~	PDU	192.168.0.113	group	Normal	8/30/2011 1:34:54 PM
	1	Server	192.168.0.35	group		
	 Image: A set of the set of the	PDU	192.168.0.38	group	PDU Inf	ormation
	1	PDU	192.168.0.44	group	Normal	8/30/2011 1:34:54 PM
	1	DEMO	192.168.0.51	group	Normal	8/30/2011 1:34:54 PM
	1	PDU	192.168.0.69	group	Normal	8/30/2011 1:34:54 PM
De		_				
PDU Status Su	mma	ry				
O Unreachable: 0						
✓ Normal: 9						
Service Status: Start						

1. Function Menu:

PDU Utility functions bar.

2. PDU List:

List all the PDU in the network; user can define the group to easily manage a large amount of the PDU.

3. PDU Information:

This area provides all detail information about the PDU.

4. Device Summary:

Indicate the status of the monitored PDU in the network.

Function Menu

Device

Add Device

Administrator can add the PDU by manually if the IP address of PDU had been setup before.

group	
Device IP:	
community:	
Trap IP:	
Syslog IP	

Device Group: SNMP Community:	Select the PDU belongs to which group Set the community, it must the same with the PDU in order to communicate with it. Default setting is "private"
	Note1: This community is set for the authority of "WRITE".
	Note2: The "READ" community is set to "public", and user can not change.
Trap forward IP:	When event occurs, it can forward the event trap to the certain NMS.
Syslog server IP:	Forward the log to the certain Syslog server.

Edit Device

Administrator can redefine the PDU information here, including

ocal Settings	SNMP Settings		Total Current Thre	shold Settings
)evice Groups:	Name:	PDU	Warning Current:	10.0
30 d)	Location:	Office	Critical Current:	12.0
	Contact:	Admin	ENV Threshold Se	tting
			Temperature	
	Network Settings		Lower Bound:	1
Community: public	IP Address:	192.168.0.37	Upper Bound:	99
rap Forward IP:		Modify	Humidity	
vslog Server IP:			Lower Bound:	1
	Carbon Emission		Upper Bound:	99
	Rate	0.636	_	

Device Group:	Change the PDU belongs to which group
SNMP Community:	Set the community, it must the same with the PDU.
	Note: This community is set for the authority of "WRITE".
Trap forward IP:	Change the trap receiver IP.
Syslog server IP:	Change the Syslog server IP.
SNMP Settings:	Modify the SNMP information for the PDU.
Network Settings: Total Current	Re-defined the IP address of PDU. It is only available when there is not only one PDU under this IP
The shore setting	address.
	User can input the current threshold to prevent total PDUs'
	power consumption exceed the facility capacity.
ENV Threshold	When the temperature or humidity
Setting	exceeds the pre-setting, utility will send mail to notify manager.

Manager can change the method that PDU Utility to get the IP.

Oynamic Static IP Settings	(DHCP)	OK Cancel
Original IP:	192.168.0.34	
New IP:	192.168.0.34	
Netmask:	255.255.255.0	
Gateway:	192.168.0.254	

Remove Selected Device	Delete the selected t	he IP address of PDU	
Edit PDU Config	Modify PDU configura	ation.	
	PDU Name: Voltage: Threshold: Outlet Name: (Option)	User defines the PDU name. User defines the voltage PDU Threshold. User defines the outlet name.	
	Edit PDU Config		
	Hostname: PDU		

	(manufacture)			Outlet	Outlet Name	
PDU Name:	PDU		•	Outlet-A	OutletA	
Voltage:	115			Outlet-B	OutletB	
				Outlet-C	OutletC	=
Thresholds				Outlet-D	OutletD	
Warning (Current:	12		Outlet-E	OutletE	
	. .	15		Outlet-F	OutletF	
Maximum	Current:	15		Outlet-G	OutletG	

Remove Selected PDU	Delete the selected PDU
Update Device	Update the PDU information manually.

Information	
Add Device Group	Create a new group.
	Add Group
	Group Name:
	OK Cancel
	The default group is named "Lab".
Edit Group	Rename the group
	Edit Group Name
	Orignal: group
	New: group
Remove Device Group	Delete an existing group. All PDU listed under this group must be removed first.
Data Management	
Export kW*hr Account to CSV	Export power data with CSV format.
Export Data Log to CSV	Export current data log with CSV format.
Export Events to CSV	Export events data with CSV format
Remove kW*hr Account Records	Delete power consumption data.
Remove Data Log Records	Delete current data log.
Remove Event Records	Delete event log.
System Management	t

Scan Subnet	Search all IP addresses of PDU that are connected under the same subnet.						
	Procedure:						
	 Select the way to scan the PDU in the network. Scan network interface subnet Scan the specify subnet Press the "Scan" Button to search all PDU devices under this subnet. Checked the box of "ADD" that you want to add to PDU Utility. Select one of the groups in the "Device Group" to category the PDU. Select "OK" to finish the procedure. 						
	Scan Domain						
	Network Settings Scan network interface subnet Realtek RTL8101 Family PCI-E Fast Ethernet NIC (NDIS 6.0) Scan the specify subnet IP: 192.168.0.1 Net Mask: 255.255.255.0						
	Scan						
	MAC IP Description Add Modify Device Groups:						
	00:16:18:77:04:5F 192.168.0.36 Switched PDU V Modif:						
	00:16:18:77:04:51 192.168.0.38 Switched PDU 🕢 Modif;						
	00:16:18:77:04:4D 192.168.0.35 Switched PDU 📝 Modifi						
	00:16:18:76:50:F2 192.168.0.39 Switched PDU 📝 Modifi						
	00:16:18:77:05:2D 192.168.0.40 Switched PDU 📝 Modify						
	▶ 00:16:18:75:00:B3 192.168.0.42 Switched PDU Modify ▼						
	Select All UnSelect All OK Cancel						

General Setting

This setting contains two functions.

ail	Rate			
Enable	1 kWh = ?			
Sender:	Unit Price: 1			
Email Address(1):				
Email Address(2):	Temperature Unit			
Email Address(3):	© Celsius			
SMTP server:	💿 Fahrenheit			
Authentication (optional)				
Account:	Period			
Password:	Data Log: 1 minute(s)			

Mail:

When the event occurs, PDU Utility can send out the email message to the pre-defined account.

Rate:

User can input the electricity rate to calculate the bill for reference.

Temperature Unit: Switch the temperature unit between Celsius and Fahrenheit.

Period: Change the interval of log.

User List

Administrator can add, delete and manager all the user privilege here.



User can only change the password for the "Admin" account.

Add user

User can be assigned to the authority of Read only or Read/Write.

	Usemame:		
	Password:		
Passw	ord (again):		
	Group	Read Only	Read/ Write
F	group		



Change the password, authority for the user.

Database Setting	Modify the database setting.	
	Database Setting	
	Database Type	MySQL/MSSQL Settings
	Microsoft Access	Host : 127.0.0.1
	🔘 MySQL	Database :
	MSSQL	IIsemame : mot
	Microsoft Access Settings File PathName	Password :
	C:\Program Files\PDU\PDU.mdb	
	Select File Default File	OK Cancel

Service Control Service control.

Service Status:	Running	
Start	Stop	Restart

Note:

If the service can not start, it could be the SNMP port had been used by the other program in the Windows OS. Please close the program and then restart PDU.

Easy Mode

Shift to Graphic interface to monitor PDU.

PDU Information

Group Information:

Provide PDU information and the summary chart under group.

Device Summary

8	Critical:	Indicate	output	power	of	the	PDU
-		exceeds	the settir	ng of ov	erloa	ad.	ווסס
Δ	Warning:	exceeds	the settir	power ng of wa	or Irnin	g.	PDU
?	Unreachable:	Indicate the PDU.	that PDL	J Utility	can	not r	each
1	Normal: Service Status	Indicate PDU Utili	the PDU ty service	is worki e status	ng r	orma	ally.

When indicates "Stopped", please go to System Management> Service Control to "Start" the service.



Icon:Indicate the PDU status by different
icon.Name:The name of PDU.IP:The IP address of PDUStatus:Indicate the communication status
with PDU Utility.•Normal: The PDU Utility
communicates with PDU normally.

• Querying: The PDU Utility is

	 requesting data from the PDU. Communication Lost: The PDU Utility can not get data from the PDU.
	 Warning: The power consumption of PDU exceeds the threshold of warning. Overload: The power consumption of PDU exceeds the threshold of everload
Update Time:	The last time of update PDU
·	information.

Device Information:

Network Information:

Indicate the network and system information, Including

- IP Address
- MAC Address
- System Name
- System Contact
- System Location
- Trap Forward IP: Utility can forward the trap coming from the PDU to the given IP.
- Syslog Forward IP: Utility can send the log to the given IP which is syslog server.

General Information:

Indicate the detected information from total PDU device and attached device, Including

- Firmware Version
- Temperature
- Humidity
- Total Current: If this IP lists more than one PDU, utility can provide the function to accumulate all the current consumption under this IP.
- Device Warning: The warning threshold for all the current consumption under this IP.
- Device Critical: The critical threshold for all the current consumption under this IP.

Device Data Management	System Manag	gement	Help Easy Mode					
→ ● group → ✓ 192,168,0,108 → ✓ 192,168,0,109 ⊕ ✓ 192,168,0,110 ⊕ ✓ 192,168,0,111 ⊕ ✓ 192,168,0,111 ⊕ ✓ 192,168,0,113 ⊕ ✓ 192,168,0,38 ⊕ ✓ 192,168,0,38 ⊕ ✓ 192,168,0,38 ⊕ ✓ 192,168,0,38 ⊕ ✓ 192,168,0,51 ⊕ ✓ 192,168,0,51 ⊕ ✓ 192,168,0,51 ⊕ ✓ 192,168,0,51	Netwo IP Adc MAC / Systen Systen Trap F Syslog	nk Inform dress: Address: n Name: n Contac n Locati forward) Forward	hation 192.168.0.69 00:16:18:77:0C:A1 PDU 4: Admin n: Office P: N/A dIP: N/A	General Im Firmware \ Temperatu Humidty: Total Curre Device W Device Cri	formation /ersion: s4.8 N/A N/A ent: 0.00 aming: 10.0 tical: 12.0	2:110825-1cb08s		
								Update
	Icon	ID	Name	Status	Current	Time	Warning Current	Overload Current
	Icon	ID 1	Name PDU	Status Normal	Current 0	Time 8/30/2011 1:38:05 PM	Warning Current 12.00	Overload Current 15.00
Device Summary Critical: 1	Icon	1D 1	Name PDU	Status Normal	Current 0	Time 8/30/2011 1:38:05 PM	Warning Current 12:00	Overload Current 15.00
Device Summary Critical: 1 Warning: 0 Urreachable: 0	Icon	1D 1	Name PDU	Status Normal	Current 0	Time 8/30/2011 1:38:05 PM	Warning Current 12.00	Overload Current 15.00

The connected PDU information included:

Icon:	Indicate the PDU status by different icon.
ID:	The identification of PDU.
Name:	The name of PDU
Status:	Indicate the communication status with PDU Utility.
Current: Time: Warning Current Overload Current	 Normal: The PDU Utility communicates with PDU normally. Querying: The PDU Utility is requesting data from the PDU. Communication Lost: The PDU Utility can not get data from the PDU. Warning: The power consumption of PDU exceeds the threshold of warning. Overload: The power consumption of PDU exceeds the threshold of overload. The PDU power consumption. The current time. Display the setting of PDU for overload threshold.

PDU Information:

PDU System Information:

Provide the PDU information and status.

PDU Power Information:

Provide PDU power information; if the PDU support outlet control, you can click the hyperlink and enter to the PDU web page to control the outlet.



History Consumption Chart:

Provide the chart for the PDU power consumption record, temperature and humidity. Administrator can check the record by Daily, Monthly, Custom-defined time period.

Data Log:

Provide PDU current data and power record.

	system management melp easy me				
All Devices	Group Info Device Info PDU Info	Data Log Events	Report		
✓ 192,168.0,109 ● 192,168.0,111 ● √ ● 192,168.0,111 ● √ ● 192,168.0,113 ● 192,168.0,138 ● 192,168.0,138 ● 192,168.0,138 ● 192,168.0,48 ● 192,168.0,41 ● 192,168.0,51 ● 192,168.0,69	log Type Current Cog Type Cog Type Cog Time Monthly Month: 2011/08 Custom From: 2011/08 To: 2011/08 Records per page: 30	wer (kW/hr)	Statistics Average Current: 0.10 Average Temperature: N/A Average Humidity: N/A	Amp	
	<< < 1/2	> >>			
	Date	PDU	Current	Temperature	Humidity
	Date 2011/08/30 13:52	PDU 1	Current 0.10	Temperature 0	Humidity
	Date 2011/08/30 13:52 2011/08/30 13:51	PDU 1 1	Current 0.10 0.10	Temperature 0 0	Humidity 0 0
	Date 2011/08/30 13:52 2011/08/30 13:51 2011/08/30 13:50	PDU 1 1 1	Current 0.10 0.10 0.10 0.10	Temperature 0 0 0	Humidity 0 0 0
	Date 2011/08/30 13:52 2011/08/30 13:51 2011/08/30 13:50 2011/08/30 13:49	PDU 1 1 1 1 1	Current 0.10 0.10 0.10 0.10 0.10	Temperature 0 0 0 0 0	Humidity 0 0 0 0 0
	Date 2011/08/30 13:52 2011/08/30 13:51 2011/08/30 13:50 2011/08/30 13:49 2011/08/30 13:48	PDU 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Current 0.10 0.10 0.10 0.10 0.10 0.10	Temperature 0 0 0 0 0 0 0 0 0 0	Humidity 0 0 0 0 0 0
	Date 2011/08/20 13:52 2011/08/20 13:51 2011/08/30 13:50 2011/08/30 13:49 2011/08/30 13:48 2011/08/30 13:47	PDU 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Current 0.10 0.10 0.10 0.10 0.10 0.10 0.10	Temperature 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Humidity 0 0 0 0 0 0 0
Device Summary	Date 2011/08/20 13:52 2011/08/20 13:51 2011/08/20 13:50 2011/08/20 13:49 2011/08/20 13:49 2011/08/20 13:47 2011/08/20 13:46	PDU 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Current 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.1	Temperature 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Humidity 0 0 0 0 0 0 0 0 0 0
Device Summary	Date 2011/08/20 13:52 2011/08/20 13:51 2011/08/30 13:50 2011/08/30 13:49 2011/08/30 13:48 2011/08/30 13:46 2011/08/30 13:45	PDU 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Current 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.1	Temperature 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Humidity 0 0 0 0 0 0 0 0 0 0 0 0
Device Summary Critical: 1 Warning: 0	Date 2011/08/30 13:52 2011/08/30 13:51 2011/08/30 13:50 2011/08/30 13:49 2011/08/30 13:48 2011/08/30 13:47 2011/08/30 13:46 2011/08/30 13:45 2011/08/30 13:44	PDU 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Current 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10	Temperature 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Humidity 0 0 0 0 0 0 0 0 0 0 0 0
Device Summary Critical: 1 Warning: 0 Unreachable: 0	Date 2011/08/30 13:52 2011/08/30 13:51 2011/08/30 13:50 2011/08/30 13:49 2011/08/30 13:48 2011/08/30 13:47 2011/08/30 13:46 2011/08/30 13:45 2011/08/30 13:44 2011/08/30 13:43	PDU 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Current 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10	Temperature 0	Humidity 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Device Summary So Critical: 1 Ao Warming: 0 Urreachable: 0 ✓ Normal: 9	Date 2011/08/30 13:52 2011/08/30 13:51 2011/08/30 13:50 2011/08/30 13:45 2011/08/30 13:47 2011/08/30 13:46 2011/08/30 13:45 2011/08/30 13:45 2011/08/30 13:43 2011/08/30 13:42	PDU 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Current 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10	Temperature 0	Humidity 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Events:

Provide events log.



Report:

Provide data analysis.

- 1. Accumulated Power
- 2. Average Current
- 3. Average Temperature
- 4. Average Humidity

