

PDU Utility

User Manual

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1. Introduction

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 to the specific account when the power event occurs.
5. Manage PDU by multiple user and different privilege.

2. Installation

Install procedure:

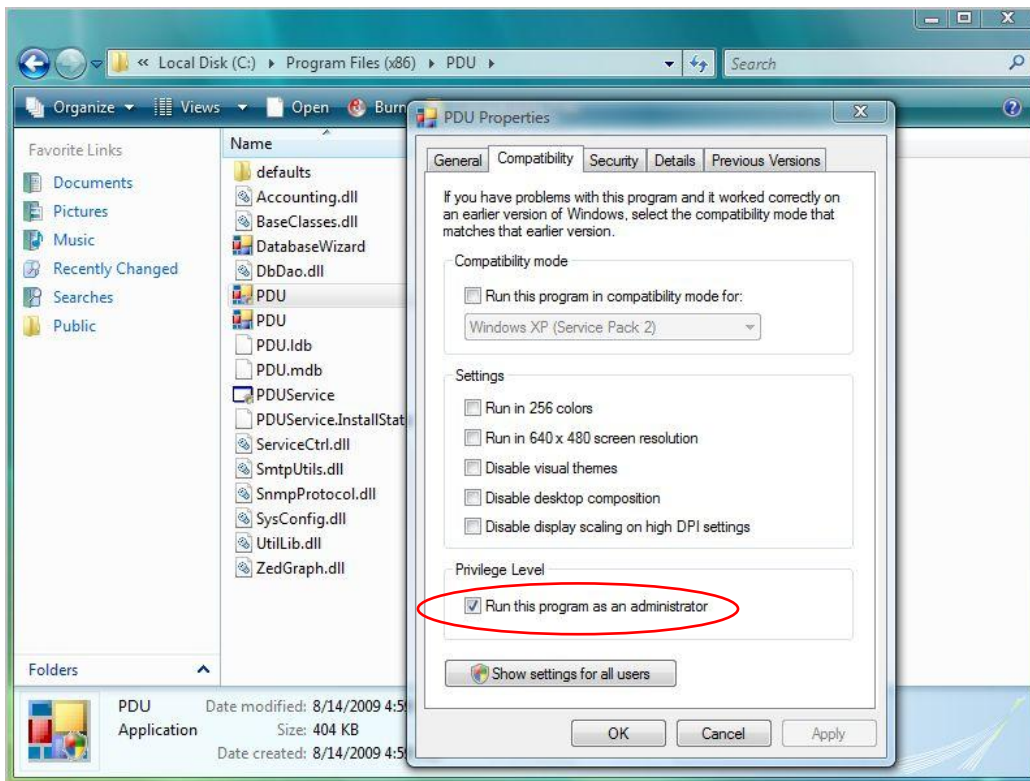
CD Auto play screen. Please install the software step by step.



中文

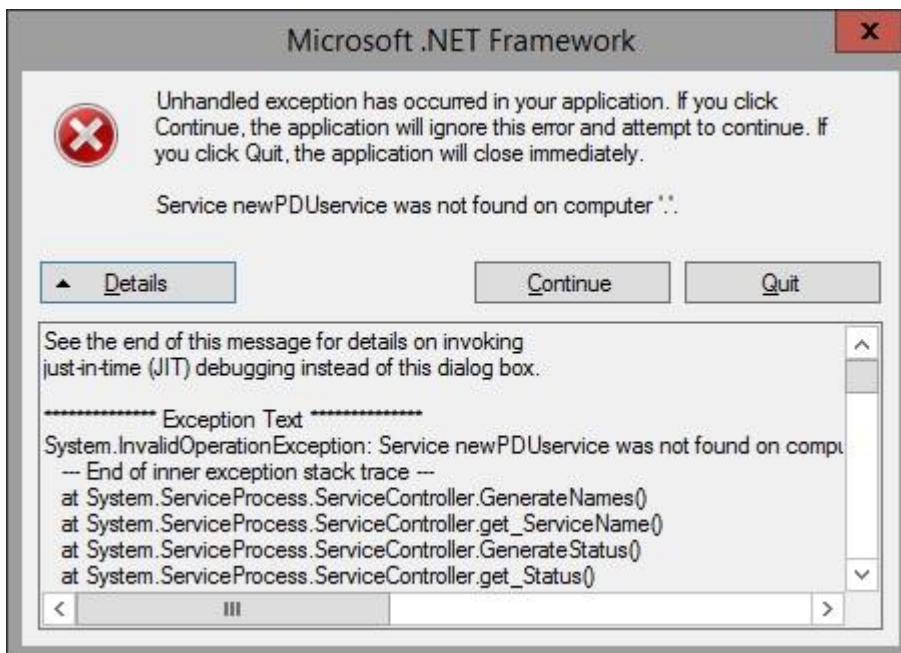
Note:

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 on **Windows Vista, Win 7 or higher Windows OS version**, please 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.
4. After the PDU Utility is installed, the IP list of the PDU will appear directly because the PC has previously installed the PDU Utility. Remove the PDU Utility; the original database will be retained, causing the newly installed PDU Utility to read the original database data. To remove the database, go to the root directory of hard drive C and delete the pdu.mdb.

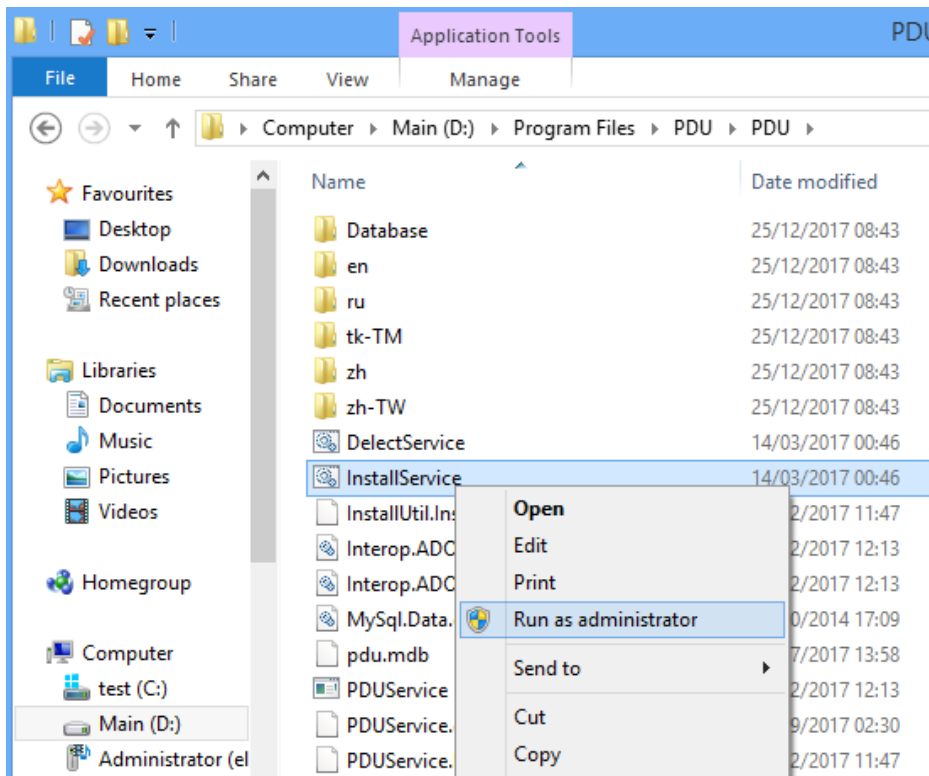


Note:

If the software indicates the following message when running in the first time,



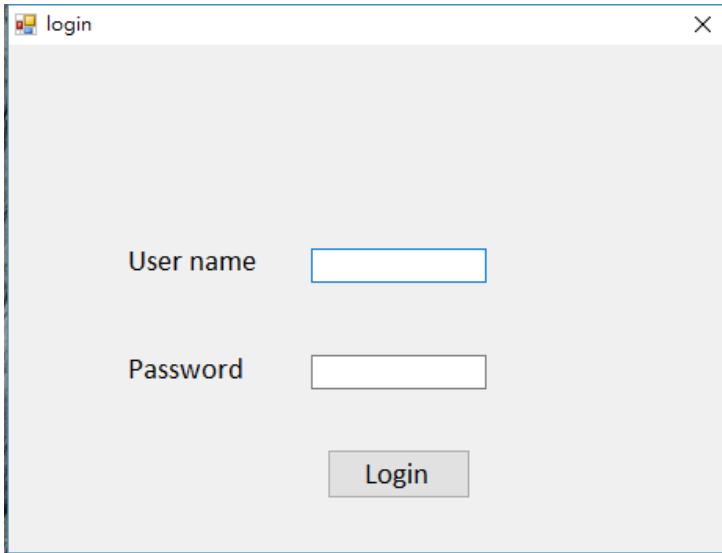
Please run the batch file "InstallService.bat" as the following shown.



3. PDU Utility Interface

LOGIN SCREEN.

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

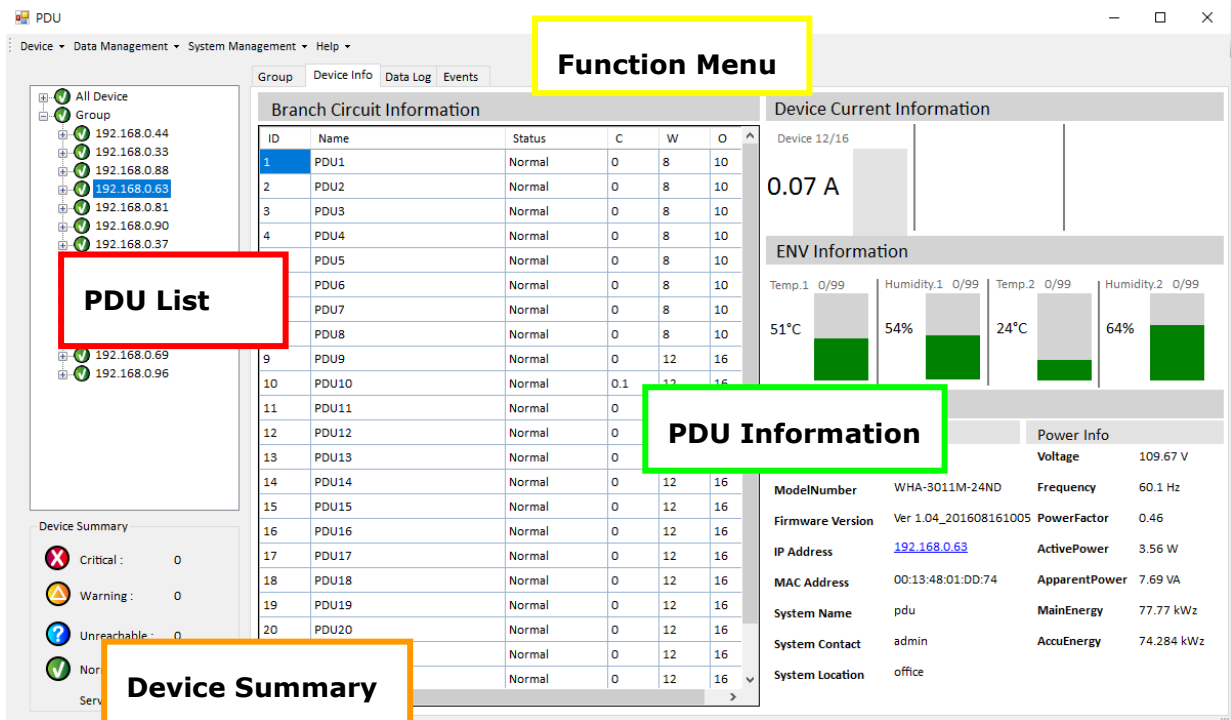


The image shows a screenshot of a web browser window titled "login". The window contains a simple login form with the following elements:

- A label "User name" followed by a text input field.
- A label "Password" followed by a text input field.
- A "Login" button centered below the input fields.

MAIN SCREEN

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



Function Menu:	PDU Utility functions bar.
PDU List:	List all the PDU in the network; user can define the group to easily manage a large amount of the PDU.
PDU Information:	This area provides all detail information about the PDU.
Device Summary:	Indicate the status of the monitored PDU in the network.

Device Summary

	Critical:	Indicate PDU output power exceeds the setting of overload.
	Warning:	Indicate PDU output power exceeds the setting of warning.
	Unreachable:	Indicate that PDU Utility cannot reach out the PDU.
	Normal:	Indicate the PDU is working normally.

Service Status

PDU Utility service status

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

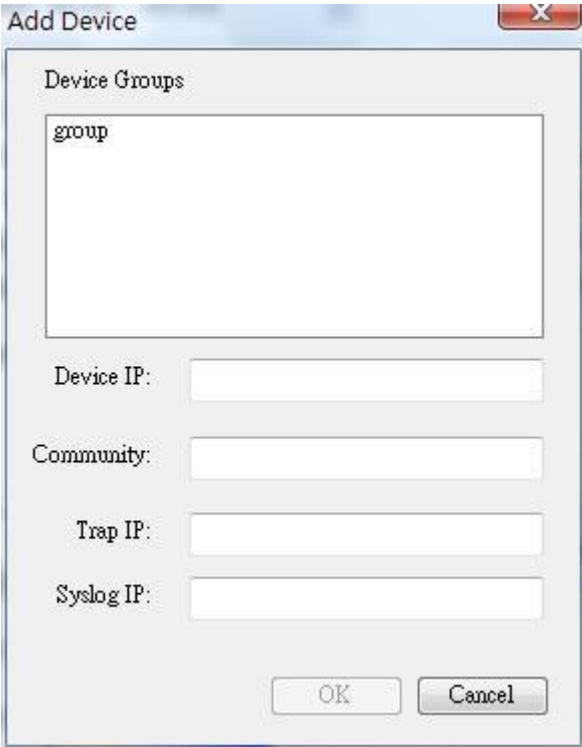
FUNCTION MENU

Device

Add Device

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

Device Group:	Select the PDU belongs to which group
Device IP	Enter the known PDU IP
SNMP Community:	Set the community, it must the same with the PDU in order to communicate with it.



Edit Device

Administrator can redefine the PDU information here, including

Device Group:	Change the PDU belongs to which group
Community:	Set the community, it must the same with the PDU.
ENV Threshold Setting	Set threshold for ENV 1 and ENV 2
SNMP Settings:	Display SNMP information for the PDU.
Network Settings:	Display PDU network configuration.
Total Current Threshold Setting	It is only available when there is not only one PDU under this IP address. User can input the current threshold to prevent total PDUs' power consumption exceed the facility capacity.
Carbon Emissions	Set carbon emissions rate

The screenshot shows the 'Edit Device' window with the following settings:

- Hostname:** 192.168.0.44
- Local Settings:**
 - Device Groups: Group
 - Community: private
 - submit
- SNMP Settings:**
 - Name: PDU
 - Location: Office
 - Contact: Admin
- Network Settings:**
 - IP Address: 192.168.0.44
- Total Current Threshold Settings:**
 - Warning Current: 15
 - Critical Current: 18
- Carbon Emission:**
 - Rate 1: N/A
 - Rate 2: N/A
 - Rate 3: N/A
- ENV Threshold Setting 1:**
 - Temperature:
 - Lower Bound: 12
 - Upper Bound: 99
 - Humidity:
 - Lower Bound: 10
 - Upper Bound: 85
- ENV Threshold Setting 2:**
 - Temperature:
 - Lower Bound:
 - Upper Bound:
 - Humidity:
 - Lower Bound:
 - Upper Bound:

Buttons: ok, cancel

Remove Selected Device

Delete the selected the IP address of PDU

Edit PDU Config.

Modify PDU configuration.

Hostname	User defines the PDU name.
Voltage	Display PDU voltage
PDU Name	User defines the circuit name.
Threshold	PDU circuit threshold.

The screenshot shows a window titled "Edit PDU" with the following configuration:

- Hostname: 192.168.0.44
- Community: private
- PDU ID: 1
- Voltage: 230
- PDU name: PDU1
- Thresholds:
 - Warning Circuit: 15
 - Overload Circuit: 18

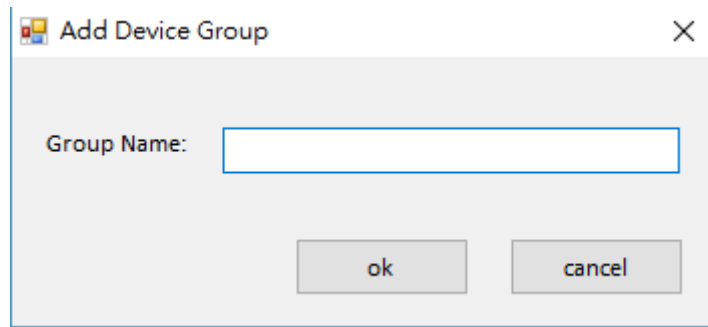
Buttons for "ok" and "cancel" are located at the bottom of the dialog.

Update Device Information

Update the PDU information manually.

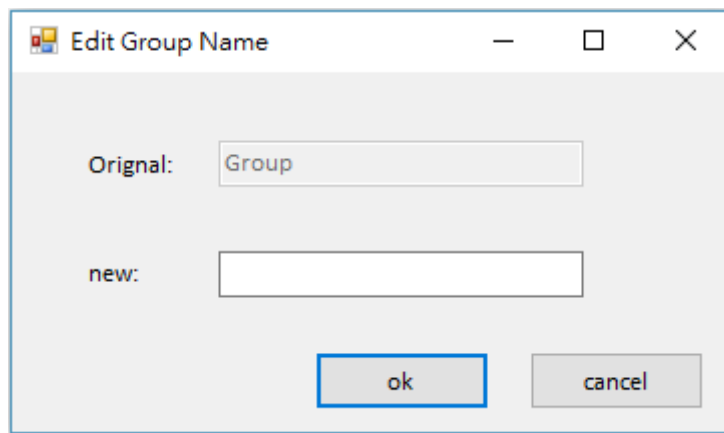
Add Device Group

Create a new group.



Edit Group

Rename the group



Remove Device Group

Delete an existing group. All PDU listed under this group must be removed first.

Change Device Name

Change the display from IP to PDU name

Data Management

Export Device Power Info to CSV

Table Content

pdudate	ip	pduname	pducurent	pduv	pdufreq	pdutemp	pduhumidity
Date	IP Address	PDU Name	Current	Voltage	Frequency	Temp.	Humidity

Export Per Outlet Data log to CSV

Table Content

Ip	Name	Time	Current
IP Address	Circuit Name	Time	Current

Export Events to CSV

Table Content

time	ip	pdu	event
Time	IP Address	Circuit Name	Description

Export Group Current Summary to CSV

Table Content

Group	pdudate	pducurent
Group Name	Time	Current

Remove Data Log Records

Remove Group Current Summary

Remove Per Outlet Data Log

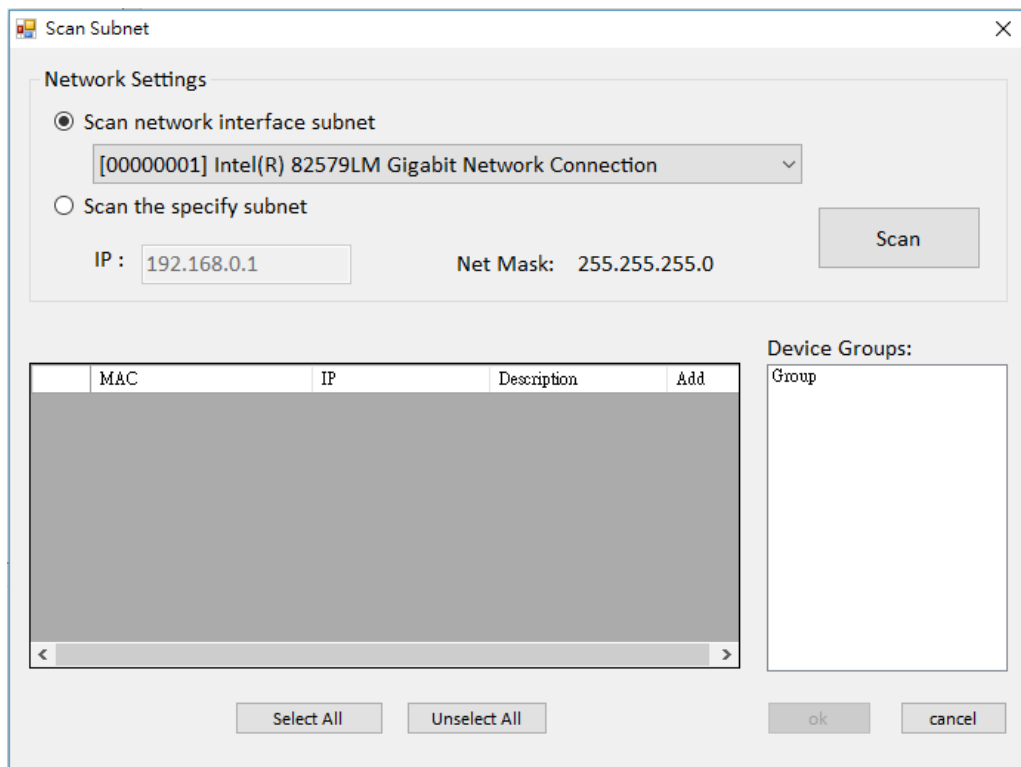
System Management

Scan Subnet

Search all IP addresses of PDU that are connected under the same subnet.

Procedure:

1. Select the way to scan the PDU in the network.
 - i. Scan network interface subnet
 - ii. Scan the specify subnet
2. Press the “Scan” Button to search all PDU devices under this subnet.
3. Checked the box of “ADD” that you want to add to PDU Utility.
4. Select one of the groups in the “Device Group” to category the PDU.
5. Select “OK” to finish the procedure.



General Setting

This setting contains two functions.

Mail	When the event occurs, PDU Utility can send out the email message to the pre-defined account.
Temperature Unit	Switch the temperature unit between Celsius and Fahrenheit.
Period	Change the interval of log.

General Settings

Mail

Enable

Sender:

Email Address(1):

Email Address(2):

Email Address(3):

SMTP server:

SMTP port:

Authentication

Account:

Password:

Temperature Unit

Celsius

Fahrenheit

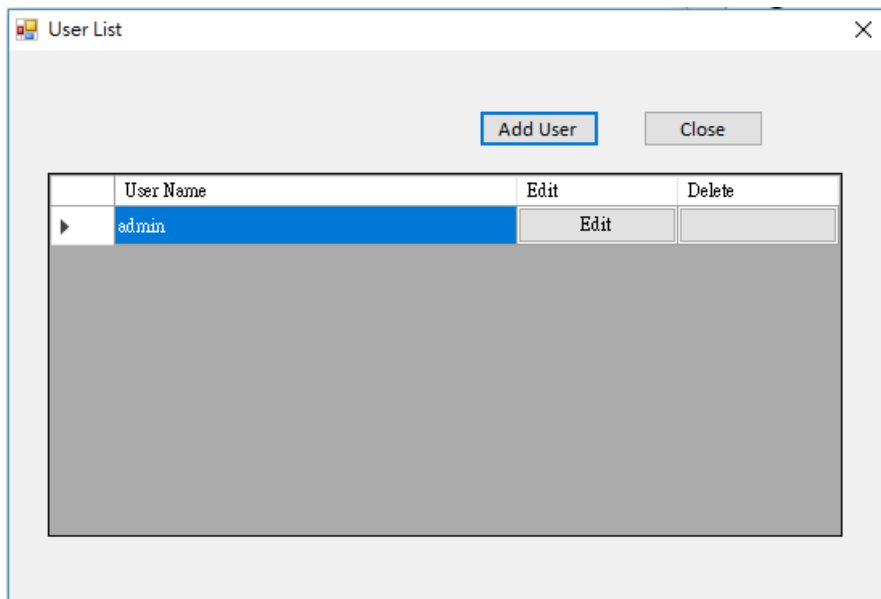
Period

data Log minute(s)

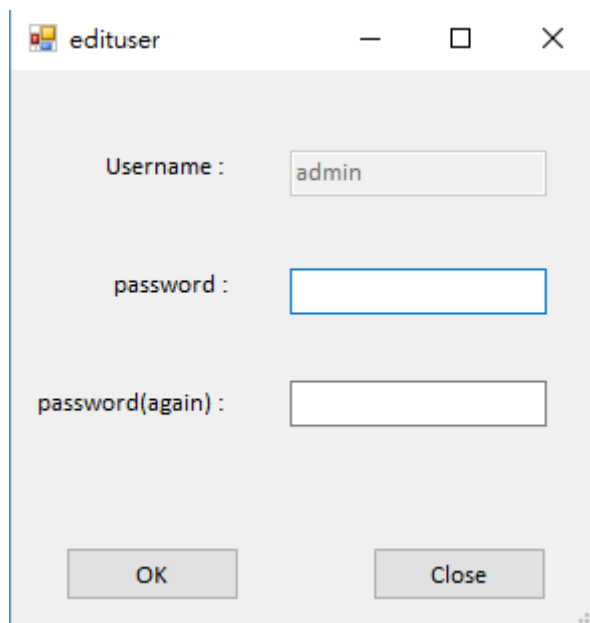
ok cancel

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.

Username :

Password :

Password (again) :

	Group	Read Only	Read/Write
▶	Group	<input type="checkbox"/>	<input type="checkbox"/>

< >

ok cancel

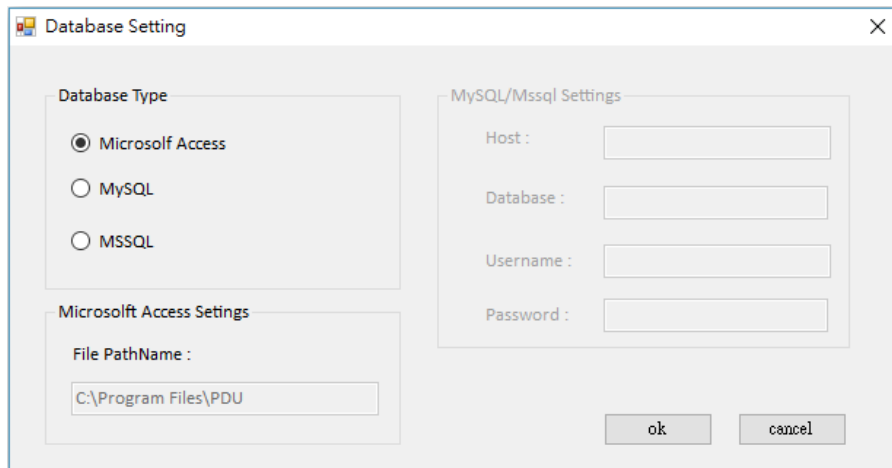
Edit User:

Change the password, authority for the user.

Database Setting

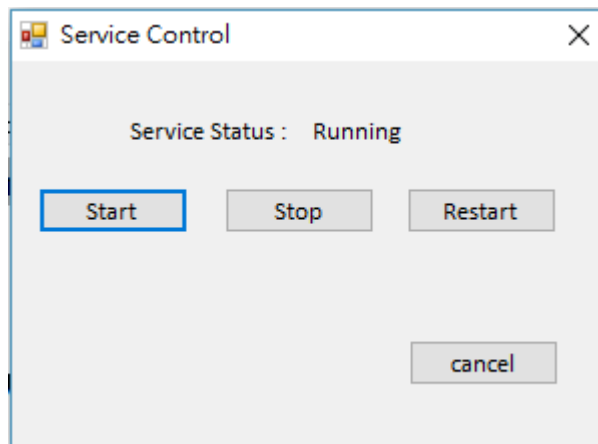
Modify the database setting.

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



Service Control

Service control.



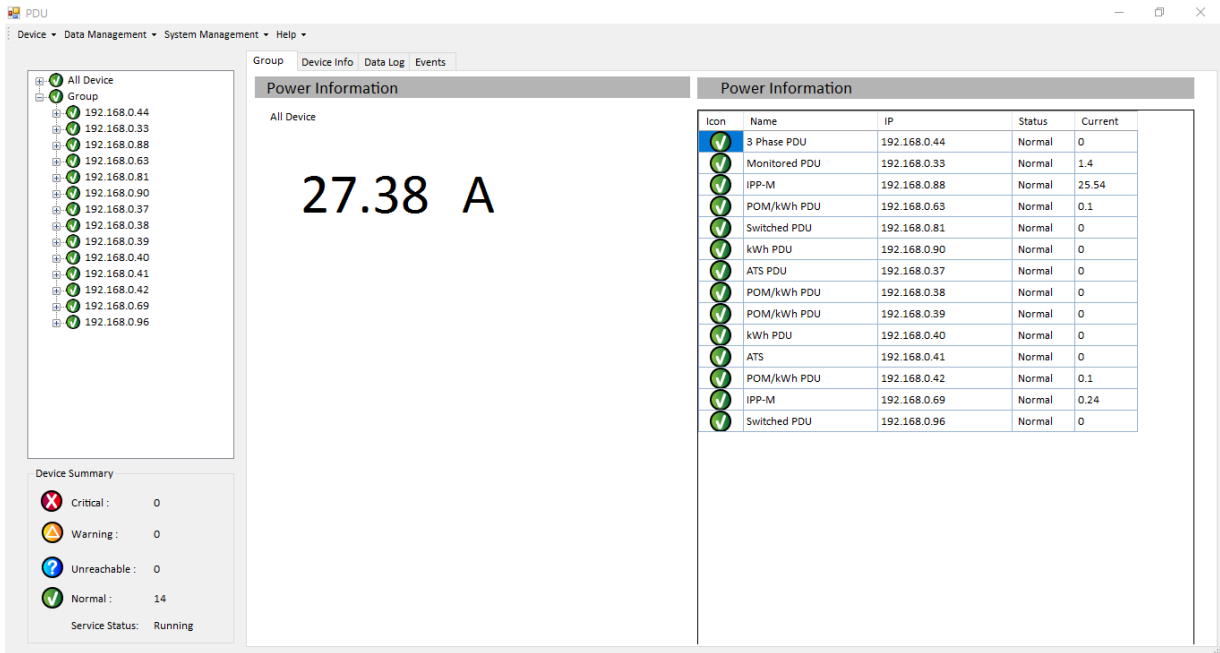
Note:

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.

PDU INFORMATION

Group Information:

Provide PDU information and the summary chart under group.



Icon:	Indicate the PDU status by different icon.
Name:	The name of PDU.
IP:	The IP address of PDU
Status:	<p>Indicate PDU status.</p> <ul style="list-style-type: none"> ● 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.

Device Information:

Indicate the detected information from total PDU device and attached device, Including current, ENV, device and power information.

The screenshot displays the PDU Utility software interface with the following sections:

- Device List:** A tree view on the left shows a group of 24 devices, all with a green status icon and IP addresses ranging from 192.168.0.44 to 192.168.0.96.
- Device Summary:** A panel at the bottom left shows:
 - Critical: 0
 - Warning: 0
 - Unreachable: 0
 - Normal: 14
 - Service Status: Running
- Branch Circuit Information:** A table with columns: ID, Name, Status, C, W, O.

ID	Name	Status	C	W	O
1	PDU1	Normal	0	8	10
2	PDU2	Normal	0	8	10
3	PDU3	Normal	0	8	10
4	PDU4	Normal	0	8	10
5	PDU5	Normal	0	8	10
6	PDU6	Normal	0	8	10
7	PDU7	Normal	0	8	10
8	PDU8	Normal	0	8	10
9	PDU9	Normal	0	12	16
10	PDU10	Normal	0.1	12	16
11	PDU11	Normal	0	12	16
12	PDU12	Normal	0	12	16
13	PDU13	Normal	0	12	16
14	PDU14	Normal	0	12	16
15	PDU15	Normal	0	12	16
16	PDU16	Normal	0	12	16
17	PDU17	Normal	0	12	16
18	PDU18	Normal	0	12	16
19	PDU19	Normal	0	12	16
20	PDU20	Normal	0	12	16
21	PDU21	Normal	0	12	16
22	PDU22	Normal	0	12	16
23	PDU23	Normal	0	12	16
24	PDU24	Normal	0	12	16
- Device Current Information:** A gauge showing a current of 0.07 A for Device 12/16.
- ENV Information:** Four bar charts showing environmental data:
 - Temp.1: 51°C (0/99)
 - Humidity.1: 53% (0/99)
 - Temp.2: 24°C (0/99)
 - Humidity.2: 64% (0/99)
- Device Information:** A table with two columns: Device Info and Power Info.

Device Info		Power Info	
Model Name	PDM	Voltage	109.48 V
ModelNumber	WHA-3011M-24ND	Frequency	60.1 Hz
Firmware Version	Ver 1.04_201608161005	PowerFactor	0.46
IP Address	192.168.0.63	ActivePower	3.5 W
MAC Address	00:13:48:01:DD:74	ApparentPower	7.66 VA
System Name	pdu	MainEnergy	77.777 kWz
System Contact	admin	AccuEnergy	74.291 kWz
System Location	office		

Data Log:

Provide PDU current data and power record.

The screenshot shows the PDU Data Log interface. On the left, there is a tree view of devices under the 'All Device' group, listing IP addresses from 192.168.0.44 to 192.168.0.96. Below this is a 'Device Summary' section showing 0 Critical, 0 Warning, 0 Unreachable, and 14 Normal devices, with a 'Service Status: Running'.

The main area is titled 'Data Log' and shows the following data table:

Date	Current	Voltage	Freq.	PF	Temp.	Humidity
2016/08/26 11:50:08	0.07//	109.22///	59.98///	0.46///	51/24	53/64
2016/08/26 11:35:08	0.07//	109.28///	60.11///	0.46///	51/24	53/64
2016/08/26 11:18:45	0.07//	107.26///	60.1///	0.46///	51/24	53/63
2016/08/26 11:03:45	0.07//	109.73///	59.98///	0.46///	51/24	53/63
2016/08/26 10:48:45	0.07//	107.21///	59.98///	0.47///	51/24	54/63
2016/08/26 10:33:45	0.07//	109.83///	59.98///	0.46///	51/24	53/63
2016/08/26 10:07:52	0.07//	109.44///	60.1///	0.46///	51/24	54/63
2016/08/26 09:52:52	0.07//	108.94///	59.98///	0.53///	51/24	54/64

Below the table is a 'Device Current Information' section with a 'Voltage' tab. It contains a 'Power Consumption Chart' showing Voltage (V) on the y-axis (0 to 120) and time on the x-axis. The chart displays three data series: Voltage (blue line), Voltage2 (green line), and Voltage3 (purple line). The Voltage line is consistently around 100V, while Voltage2 and Voltage3 are around 60V.

Events:

Provide events log.

The screenshot displays the PDU Utility software interface. On the left, a tree view shows a group of devices with IP addresses ranging from 192.168.0.44 to 192.168.0.96. Below this is a 'Device Summary' section showing 0 Critical, 0 Warning, 0 Unreachable, and 14 Normal devices, with a 'Service Status' of 'Running'. The main area is titled 'Events' and shows a filter for 'Monthly' in '2016/08'. A table below lists the events:

Time	IP	PDU	Event
2016/08/26 11:56:34	192.168.0.88		The current is back to normal
2016/08/26 11:54:34	192.168.0.88		The current value is higher than the overload threshold
2016/08/26 11:44:45	192.168.0.88		The current is back to normal
2016/08/26 11:44:33	192.168.0.88		The current value is higher than the warning threshold
2016/08/26 11:19:01	192.168.0.88		The current is back to normal
2016/08/26 11:18:49	192.168.0.88		The current value is higher than the warning threshold
2016/08/26 10:56:24	192.168.0.88		The current is back to normal
2016/08/26 10:56:11	192.168.0.88		The current value is higher than the warning threshold
2016/08/26 09:50:10	192.168.0.41	5	PDUService-add a new PDU
2016/08/26 09:50:10	192.168.0.41	6	PDUService-add a new PDU
2016/08/26 09:50:10	192.168.0.41	7	PDUService-add a new PDU
2016/08/26 09:50:10	192.168.0.41	8	PDUService-add a new PDU
2016/08/26 09:50:10	192.168.0.42	1	PDUService-add a new PDU
2016/08/26 09:50:10	192.168.0.42	2	PDUService-add a new PDU
2016/08/26 09:50:10	192.168.0.42	3	PDUService-add a new PDU
2016/08/26 09:50:10	192.168.0.41	4	PDUService-add a new PDU
2016/08/26 09:50:10	192.168.0.42	5	PDUService-add a new PDU
2016/08/26 09:50:10	192.168.0.40	5	PDUService-add a new PDU
2016/08/26 09:50:10	192.168.0.42	4	PDUService-add a new PDU