



## **User Manual**

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# 1. Introduction

The ServerLink PDU is a network ready device designed and equipped with an Intelligent True RMS Current Meter to indicate the total power consumption of connected devices.

The ServerLink PDU offers an easy to set up and user-friendly interface. The software enables you to remotely monitor power consumption of a single PDU or multiple PDUs.

## Features

- Built-in web server allowing real time monitoring of current consumption.
- Built-in True RMS current meter.
- Web Interface allows real time switching control of each outlet.
- Easy Setup. The meter can display the IP address of the PDU.
- Provides audible alarm when the power consumption exceeds the warning threshold or overload threshold.
- Send email and traps when the power consumption exceeds the warning threshold or overload threshold.
- Utility software can monitor a large amount of ServerLink PDUs at the same time.
- Supports SNMP and provides MIB for the PDU to be monitored by NMS.
- Provides power protection via the circuit breaker.
- Standard 1U horizontal mounting or 0U vertical mounting.
- LED to indicate status of each outlet.
- Supports power on sequence.

## 2. Package Contents

The standard ServerLink PDU package contains a Power Distribution Unit with supporting hardware and software.

- Power Distribution Unit
- Rack Mount Brackets
- CD-ROM containing:
  1. ServerLink PDU User Manual
  2. ServerLink PDU Utility User Manual
  3. ServerLink PDU Utility Software
  4. MIB: Management Information Base for Network (ServerLinkMIB.mib)
  5. Adobe Acrobat Reader

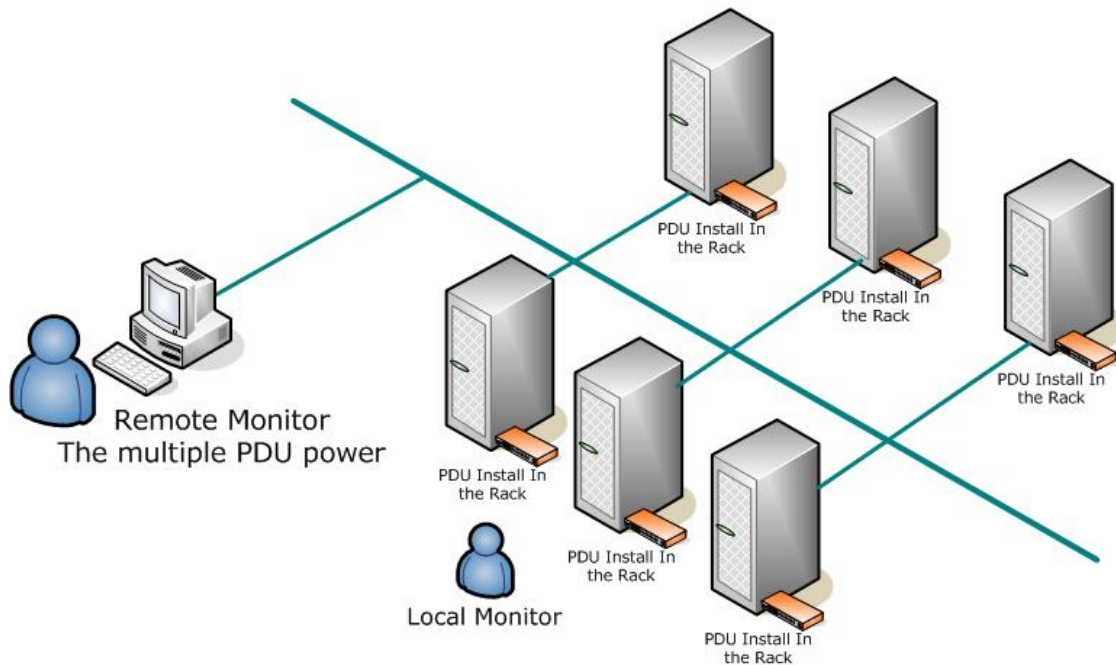
### 3. Function



No.	Functions	Description
1	<b>Ethernet</b>	The Network connection for the built-in web server.
2	<b>Audible Alarm</b>	<ul style="list-style-type: none"> <li>• PDU exceeds warning threshold - 1 beep per second</li> <li>• PDU exceeds overload threshold - 3 beeps per second</li> </ul> <p><b>Note:</b> The audible alarm will not change beeping status until the current drops more than 0.5A below the warning or overload threshold.</p>
3	<b>Function Button</b>	<ul style="list-style-type: none"> <li>• Press and release to turn off the warning beep. The overload beeping cannot be cancelled.</li> <li>• Press and hold, after 2 beeps the Meter Display will show the IP address of the PDU.</li> <li>• Press and hold, after 4 beeps you can select to assign IP address by DHCP or Fixed IP.</li> <li>• Press and hold, after 6 beeps the PDU will reset the power to all outlets and restore all settings to factory default.</li> </ul>
4	<b>Meter</b>	Displays the current consumption or IP Address.
5	<b>LED Indicator</b>	<p>Current LED: When lit, the Meter Display indicates the power consumption with the True RMS current meter.</p> <p>IP Address LED: When lit, the Meter Display indicates the current IP address of the PDU.</p>

## 4. Installation

### Diagram



### Hardware

1. Install mounting brackets.  
The ServerLink PDU comes with brackets for mounting in a rack. To mount the ServerLink PDU into a rack, perform the following procedure:
  - I. Attach the mounting brackets to the unit using the four retaining screws provided for each of the brackets.
  - II. Choose a location for the brackets.
  - III. Align the mounting holes of brackets with the notched hole on the vertical rail and attach with the retaining screws.
2. Connect input and output power.
3. Connect Ethernet cable to the ServerLink PDU.
4. Switch on the ServerLink PDU.

#### Note 1:

The default setting to assign the IP address is DHCP. If the ServerLink PDU cannot get the IP from DHCP server, the IP address will default to 192.168.0.216

## 5. Web Interface

The Web Interface provides a quick and simple way to check the status of the ServerLink PDU. It also allows you to remotely switch each individual Outlet on or off.

### Index:


#### System Information

Provides General Information about the ServerLink PDU, including:

- Model No.
- Name
- Location
- Contact
- Version
- MAC address

#### Status

Note: Depending on the different model, the status will display different information.

	
System Information	
Model No.	SLP-S1008-H
Name	ServerLink PDU
Location	PDU
Contact	Admin
Version	v4.02-20080716h08
MAC	00-16-18-76-06-C2
Threshold	
Warning	8.0(A)
Overload	10.0(A)
Status	
Load	0.0(A)
Status	Normal
Index <a href="#">Control</a> <a href="#">Network ID</a> <a href="#">Email</a> <a href="#">Trap</a>	

**Control:**

Note: Depending on the different model, the status will display different information.

**Status**

Indicates the power consumption and status of the PDU.

**Outlet Name & Status**

Select the outlet check box you want to switch ON or OFF. Enter your ID and Password and then click the ON or OFF button to control the PDU power output.

The default ID is **snmp** and password is **1234**

SERVERLINK PDU		
Status		
Load	0 (A)	
Status	Normal	
Outlet Name	Status	<input type="checkbox"/>
OutletA	ON	<input type="checkbox"/>
OutletB	ON	<input type="checkbox"/>
OutletC	ON	<input type="checkbox"/>
OutletD	ON	<input type="checkbox"/>
OutletE	ON	<input type="checkbox"/>
OutletF	ON	<input type="checkbox"/>
OutletG	ON	<input type="checkbox"/>
OutletH	ON	<input type="checkbox"/>
Control		
ID	<input type="text"/>	
Password	<input type="text"/>	
<input type="button" value="ON"/> <input type="button" value="OFF"/>		
<a href="#">Index</a> <a href="#">Control</a> <a href="#">Network</a> <a href="#">ID</a> <a href="#">Email</a> <a href="#">Trap</a>		

**Network:**

1. Enter your ID and Password.
2. Enter network setting here for the PDU
3. Click the Update button

The default ID is **snmp** and password is **1234**

SERVERLINK PDU	
Configuration	
ID	<input type="text"/>
Password	<input type="text"/>
IP Address	<input type="text" value="192.168.10.1"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
Gateway	<input type="text" value="192.168.10.254"/>
Primary DNS Server IP	<input type="text" value="192.168.10.254"/>
DHCP	<input type="checkbox"/>
<input type="button" value="Update"/>	
<a href="#">Index</a> <a href="#">Control</a> <a href="#">Network</a> <a href="#">ID</a> <a href="#">Email</a> <a href="#">Trap</a>	



**ID:**

Allows you to change the ID and password.

The default ID is **snmp** and password is **1234**

SERVERLINK PDU	
Change ID Password	
Original ID	<input type="text"/>
Original Password	<input type="text"/>
New ID	<input type="text"/>
New Password	<input type="text"/>
<input type="button" value="Update"/>	
<a href="#">Index</a> <a href="#">Control</a> <a href="#">Network</a> <a href="#">ID</a> <a href="#">Email</a> <a href="#">Trap</a>	

**Email:**

1. When the status of an Outlet changes, the ServerLink PDU Utility can send an email message to a specified email address.
2. Email Server must be a local or public fully qualified domain name.  
Eg. mailserver.domain.local or mail.domain.com.au
3. The emailed message is shown below:

**Subject:** AMz Outlet Status Changed.

10101010

4. 10101010 represents the status of Outlets A~H  
0 indicates power off.  
1 indicates power on.

SERVERLINK PDU	
Email Notification	
Email Server	<input type="text" value="mail.domain.local"/>
Sender's Email	<input type="text" value="pdu@domain.com.au"/>
Authentication	<input type="button" value="NO"/> ▾
Account Name	<input type="text"/>
Password	<input type="text"/>
Recipient's Email	
Email Address	<input type="text" value="admin@domain.com.au"/>
<input type="button" value="Apply"/>	
<a href="#">Index</a> <a href="#">Control</a> <a href="#">Network</a> <a href="#">ID</a> <a href="#">Email</a> <a href="#">Trap</a>	

**Trap:**

Sends the event trap to the specific IP address to alert manager.

The default ID is **snmp** and password is **1234**

SERVERLINK PDU	
Trap Notification	
ID	<input type="text"/>
Password	<input type="text"/>
Receiver IP	<input type="text"/>
<input type="button" value="Update"/>	
<a href="#">Index</a> <a href="#">Control</a> <a href="#">Network</a> <a href="#">ID</a> <a href="#">Email</a> <a href="#">Trap</a>	

## 6. Specification

### Interface

RJ45	Ethernet
Nominal Input Frequency	47~63 Hz Full Range

### LED Indicator

Indicator	(1) yellow LED ; (1) red LED
Current Meter	3 digits
Range	0A~20A (True RMS)
Resolution	0A~20A: 0.1A
Precision	0A~20A: +/-2%/+/-0.1AMP

### Alarm

Audible	1. Warning - 1 beep per second 2. Overload - 3 beeps per second
Seven Segment	Warning and Overload - Meter will flash once per second

### Operation & Environment

Operating Temperature	-5 - 45 degree C
Relative Humidity	0 - 95%
Storage Temperature	-25 - 65 degree C



## Utility User Manual

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# 1. Introduction

## General

ServerLink PDU Utility is a monitoring & management software utility. It has been designed to provide information about power conditions and status of the ServerLink PDU and power environment.

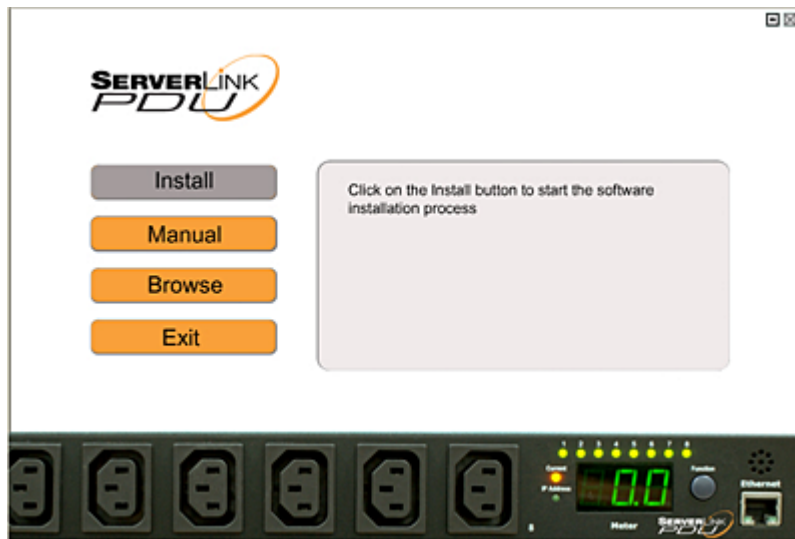
## Functions

1. Group Management of a large amount of ServerLink PDUs.
2. Provides power consumption charts for daily, monthly or user-defined period report.
3. Sends email and traps to a specific account when a power event occurs.
4. Forwards the trap to a user-defined account.
5. Events can be logged and exported to a Syslog server.

## 2. Installation

### Install procedure:

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

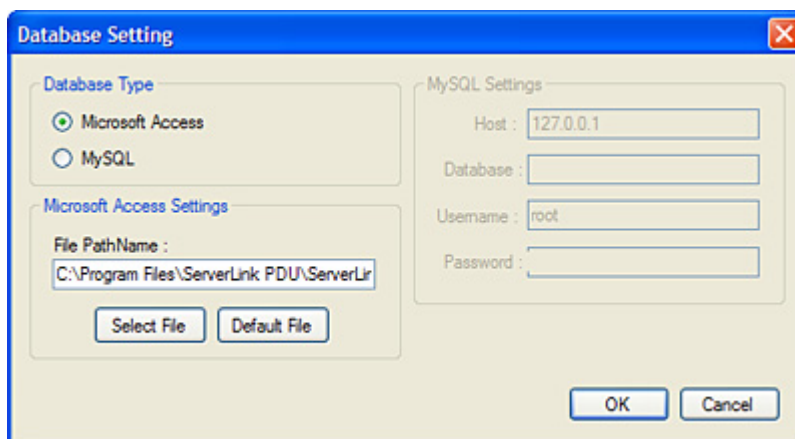


### Note:

1. It will take several minutes if your operating system has not previously installed Microsoft .NET Framework.

The first time you use the ServerLink PDU utility software, you must select what type of database you want to use to record the ServerLink PDU information.

- The default database is set to Microsoft Access.
- If you want to use MySQL database, you may download it from <http://www.mysql.org>

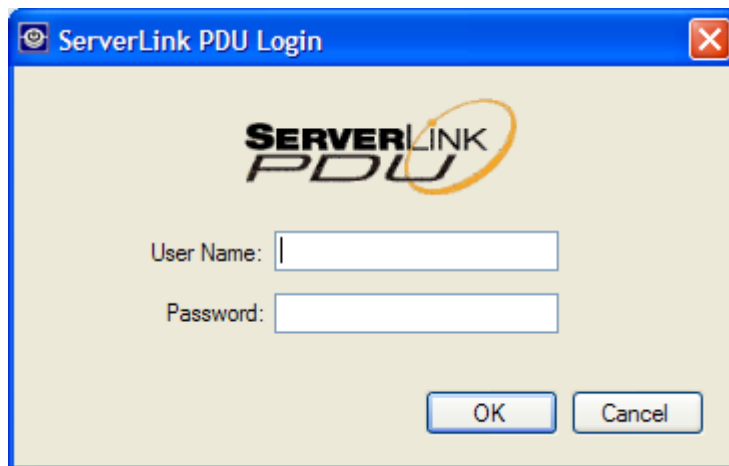


### 3. ServerLink PDU Utility Interface

The Login Screen.

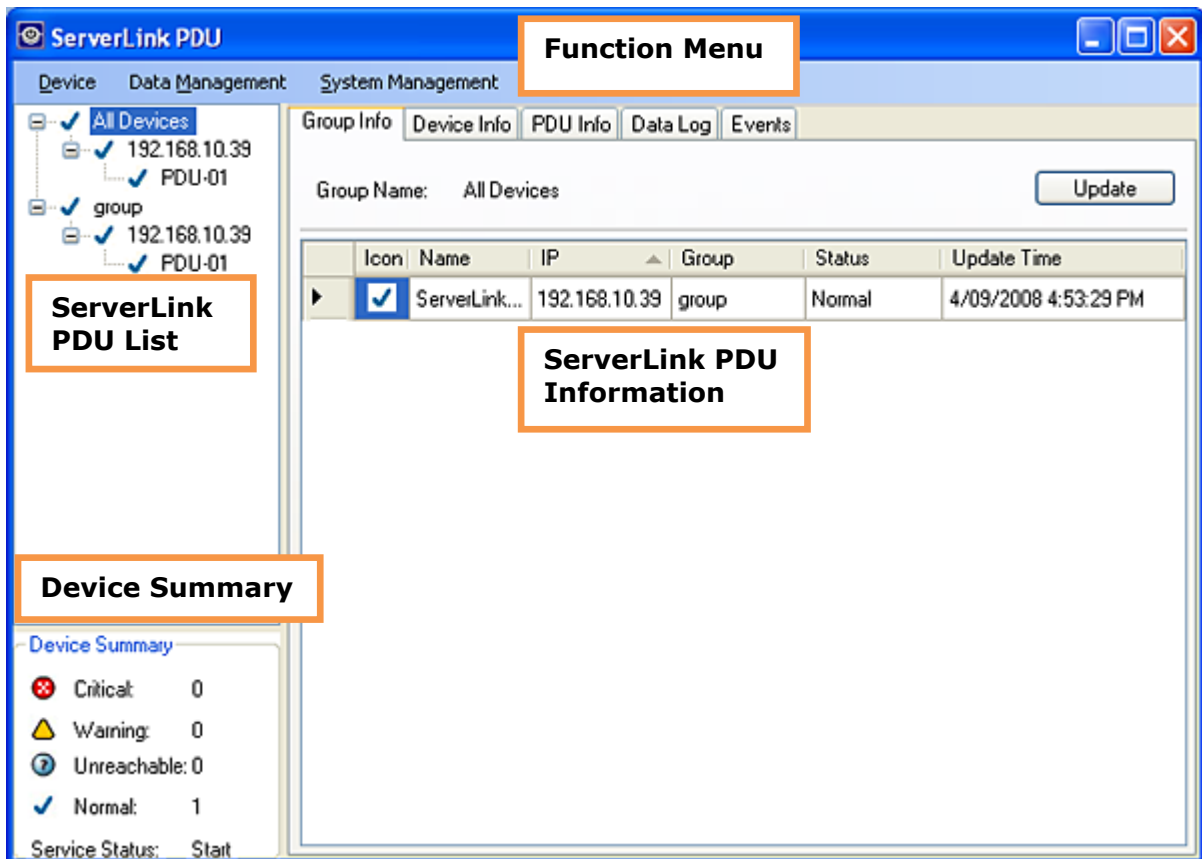
Default User Name is **admin**

Default Password is **1234**



After you login to the software, you will see the software interface as follows. It contains four sections:

1. **Function Menu:**  
ServerLink PDU Utility Function Menu.
2. **ServerLink PDU List:**  
Lists all the ServerLink PDUs on the network. User can define groups to easily manage a large amount of ServerLink PDUs.
3. **ServerLink PDU Information:**  
This area provides all the detailed information about the ServerLink PDU.
4. **Device Summary:**  
Indicates the status of the monitored ServerLink PDUs on the network.



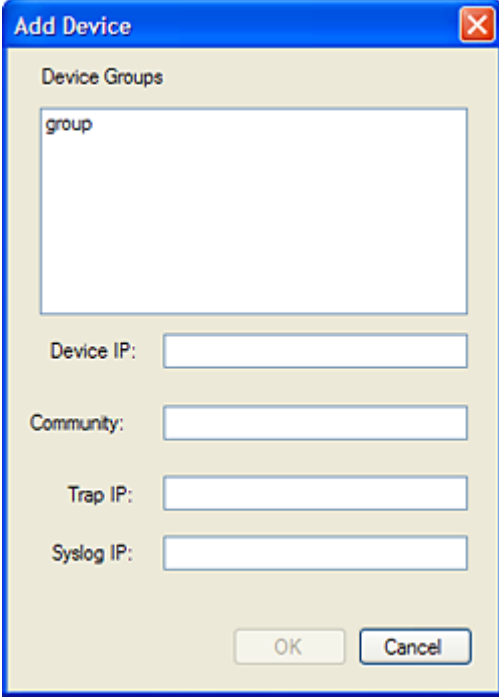


## Function Menu

### Device

#### Add Device

Manually add a ServerLink PDU if the IP address of the ServerLink PDU has been setup.



**Device Group:** Select the group you want to add the ServerLink PDU to.

**SNMP Community:** Set the community. It must be the same as the ServerLink 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 an event occurs, it can forward the event trap to the specified NMS.

**Syslog server IP:** Forward the log to the specified Syslog server.

## Edit Device

To edit a device it must be highlighted

Device Group: Change which group the ServerLink PDU belongs to.

SNMP Community: Set the community. It must be the same as the ServerLink 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 ServerLink PDU.

Network Settings: Change the IP address of the ServerLink PDU.

Device Edit

Hostname: ServerLinkOffice

Local Settings

Device Groups:

- group

Community: public

Trap Forward IP:

Syslog Server IP:

SNMP Settings

Name: ServerLinkOffice

Location: Office

Contact: Admin

Network Settings

IP Address: 192.168.10.35

Modify

OK Cancel

Change how the IP address is assigned to the ServerLink PDU.

Modify IP

Dynamic (DHCP)  Static

IP Settings

Original IP: 192.168.10.39

New IP: 192.168.10.39

Netmask: 255.255.255.0

Gateway: 192.168.10.253

OK Cancel

Remove Selected Device

To remove a device it must be highlighted. A Device cannot be removed from the "All Devices" group.

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Edit PDU Config

To edit PDU config, the PDU must be highlighted.

PDU Name: Enter a name for the PDU.

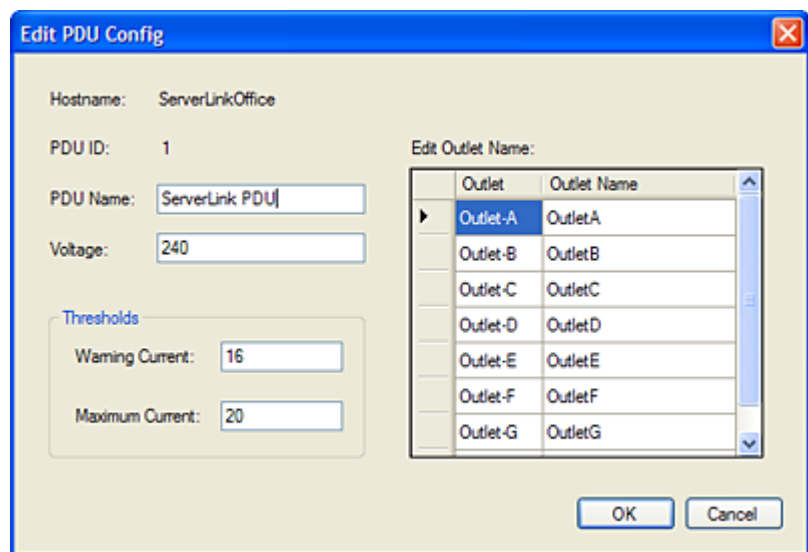
Voltage: Enter the voltage.

Thresholds:

Warning Current Enter Warning threshold setting.

Maximum Current Enter Maximum threshold setting.

Edit Outlet Name: Change the outlet name.



Remove Selected PDU

To remove a PDU it must be highlighted.

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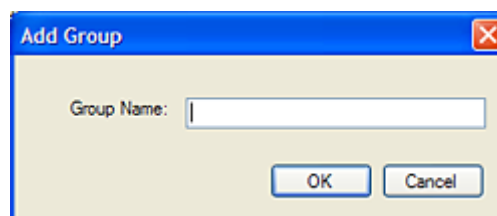
Update Device Information

To update device information manually, the device must be highlighted.

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Add Device Group

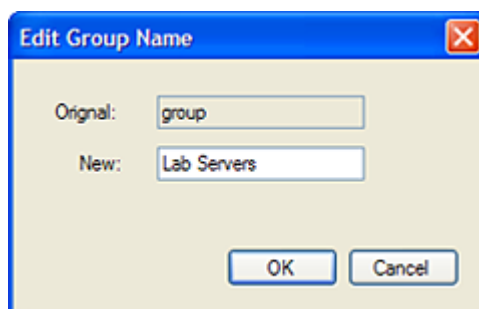
Only the admin account can add a new device group.



The default name is "Group".

Edit Group

Only the admin account can edit a group name. To edit a group name, the group must be highlighted



Remove Device Group

Only the admin account can remove a device group. To remove a device group, the group must be highlighted. All devices 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

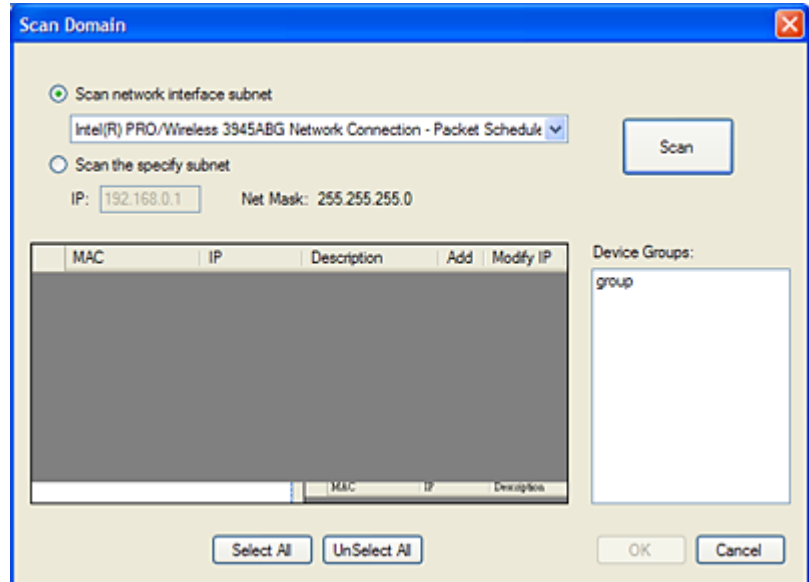
Scan Subnet

Search all IP addresses on the specified subnet for ServerLink PDUs.

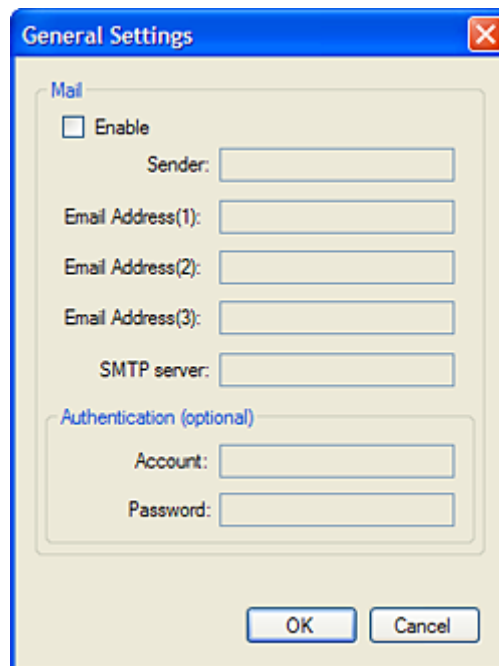
Procedure:

1. Select the method of network scanning.
  - Scan network interface subnet
  - Scan the specified subnet
2. Press the "Scan" Button to search all ServerLink PDU devices under this subnet.
3. Check the "ADD" box that you want to add to the ServerLink PDU Utility.

4. Select one of the groups in the "Device Group" to add the ServerLink PDU to.
5. Select "OK" to finish the procedure.



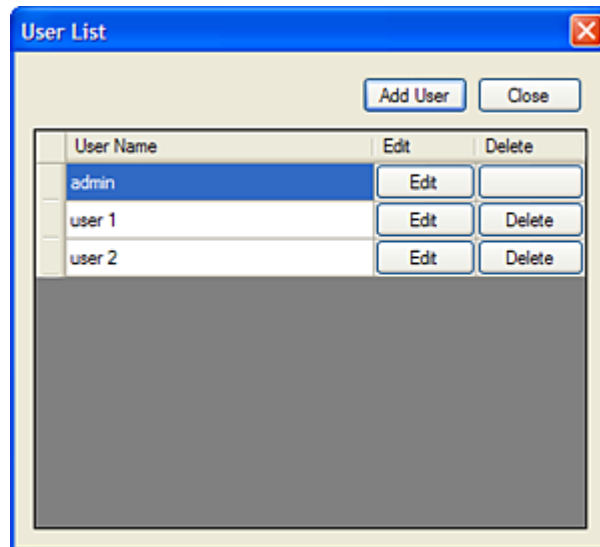
## General Setting



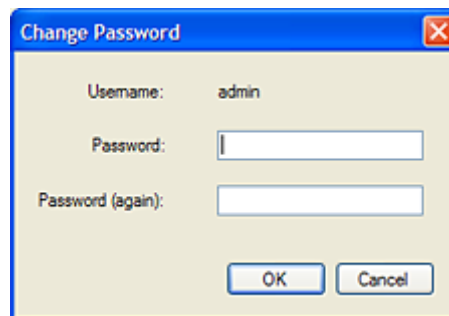
When an event occurs, the ServerLink PDU Utility can send an email message to up to three specified accounts. Events that are emailed are Warning threshold exceeded, Maximum threshold exceeded and device returning to normal status.

## User List

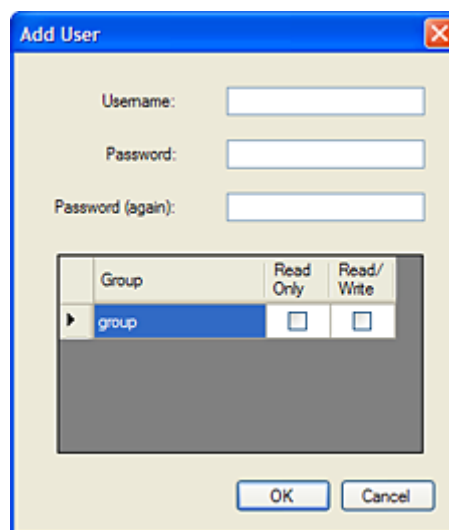
Admin account can add, delete and manage all the user privileges here.



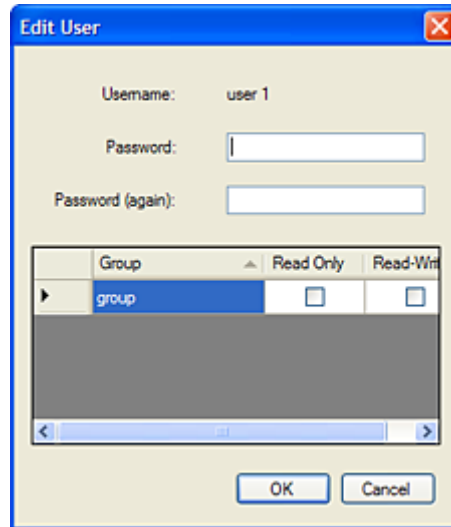
For admin account, select "Edit" to change the password for the admin account.



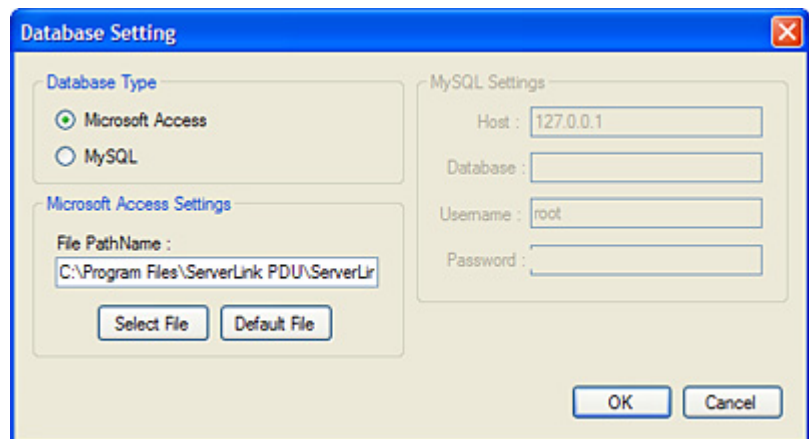
Add user: Select "Add User" to add a new user and assign Read only or Read/Write privileges.



Edit User: Select "Edit" to change the password and Read only or Read/Write privileges for the user.

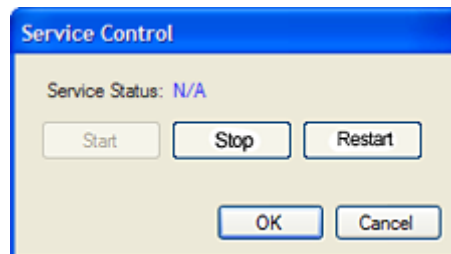


#### Database Setting



The ServerLink PDU supports Microsoft Access and MySQL.

#### Service Control







**Note:**

If the service cannot start, it could be the SNMP port has been used by another program in the Windows OS. Please close the program and then restart ServerLink PDU.

## ServerLink PDU Information

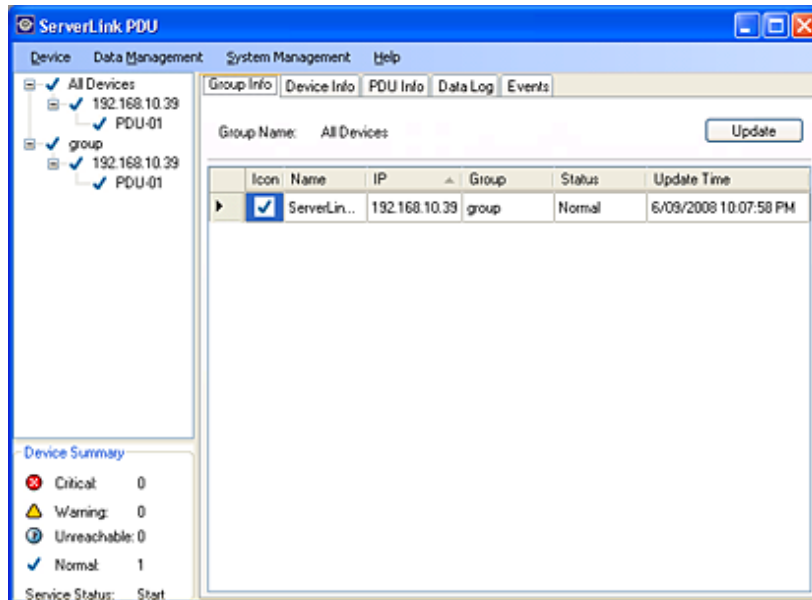
### Group Info:

#### Device Summary

-  **Critical:** Indicates the output power of the ServerLink PDU exceeds the Maximum threshold setting.
-  **Warning:** Indicates the output power of the ServerLink PDU exceeds the Warning threshold setting.
-  **Unreachable:** Indicates the ServerLink PDU Utility cannot reach the ServerLink PDU.
-  **Normal:** Indicates the ServerLink PDU is working normally.

**Service Status:** ServerLink PDU Utility service status.

If Service Status is "Stopped", go to System Management>Service Control to "Start" the service.



**Icon:** Indicates the ServerLink PDU status by different icon.

**Name:** The name of the ServerLink PDU.

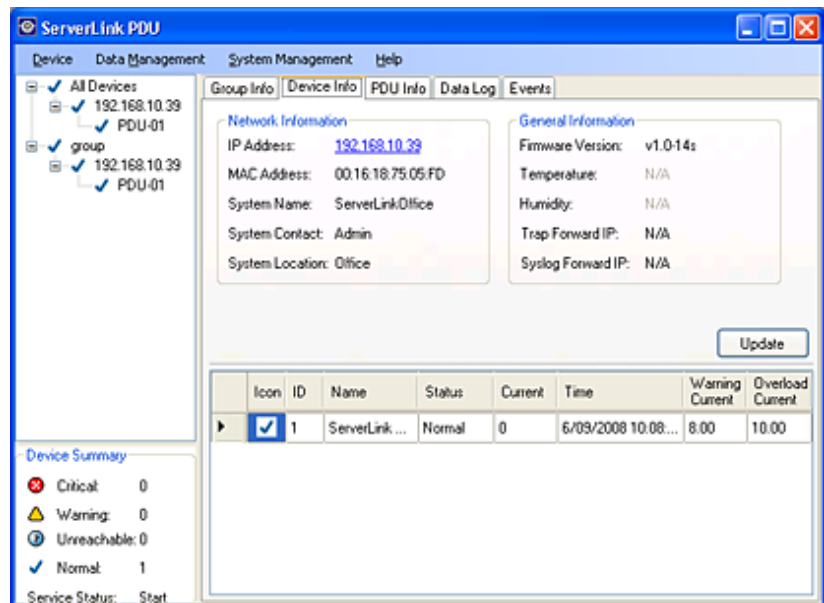
**IP:** The IP address of the ServerLink PDU



Status:	<p>Indicates the communication status of the ServerLink PDU Utility.</p> <ul style="list-style-type: none"> <li>• Normal: The ServerLink PDU Utility is communicating with the ServerLink PDU normally.</li> <li>• Querying: The ServerLink PDU Utility is requesting data from the ServerLink PDU.</li> <li>• Communication Lost: The ServerLink PDU Utility cannot get data from the ServerLink PDU.</li> <li>• Warning: The power consumption of the ServerLink PDU exceeds the Warning threshold setting.</li> <li>• Overload: The power consumption of the ServerLink PDU exceeds the Overload threshold setting.</li> </ul>
Update Time:	The last time the ServerLink PDU was updated.

## Device Info:

Indicates the network device information and connected PDU(s) information.



Icon:	Indicates the ServerLink PDU status by different icon.
ID:	The identification of the ServerLink PDU.
Name:	The name of the ServerLink PDU

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Status:	Indicates the communication status of the ServerLink PDU Utility. <ul style="list-style-type: none"><li>• Normal: The ServerLink PDU Utility is communicating with the ServerLink PDU normally.</li><li>• Querying: The ServerLink PDU Utility is requesting data from the ServerLink PDU.</li><li>• Communication Lost: The ServerLink PDU Utility cannot get data from the ServerLink PDU.</li><li>• Warning: The power consumption of the ServerLink PDU exceeds the Warning threshold setting.</li><li>• Overload: The power consumption of the ServerLink PDU exceeds the Overload threshold setting.</li></ul>
Current:	The ServerLink PDU power consumption.
Time:	The current time.
Warning Current	Indicates the Current setting of the Warning threshold.
Overload Current	Indicates the Current setting of the Overload threshold.

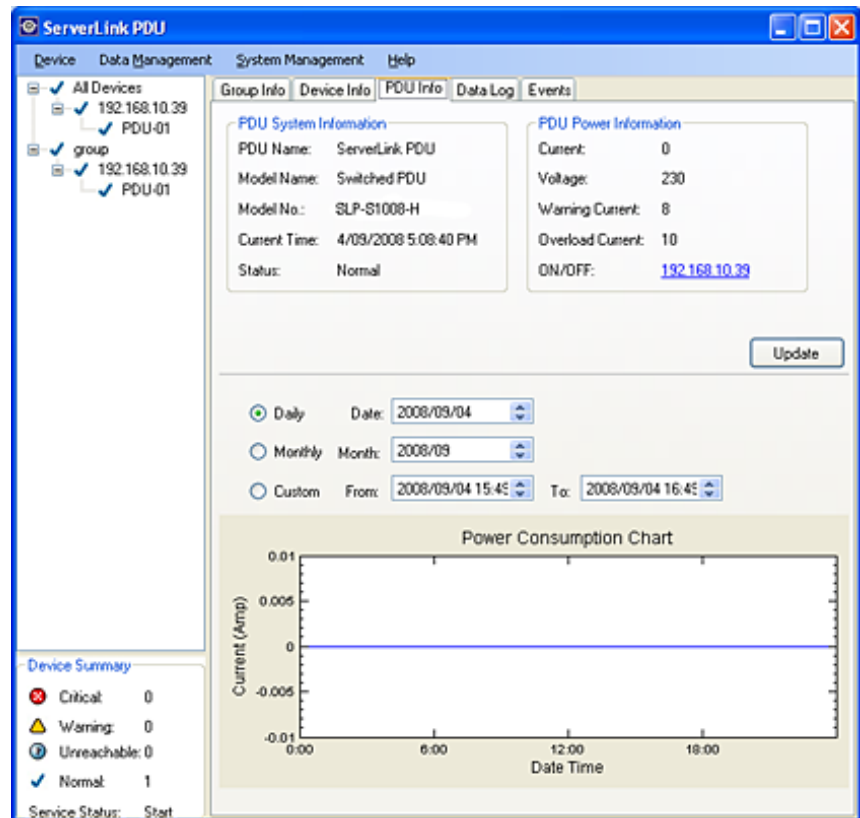
## PDU Info:

### PDU System Information

Provides the ServerLink PDU information and status.

### PDU Power Information

Provides the ServerLink PDU power information. You can click the hyperlink and open the ServerLink PDU web page to switch the outlets ON or OFF.



## Data Log:

Provides the Current Data and Power (kW/hr) Record.

The screenshot displays the ServerLink PDU utility interface. The main window is titled "ServerLink PDU" and has a menu bar with "Device", "Data Management", "System Management", and "Help". The "Data Management" menu is open, showing "Group Info", "Device Info", "PDU Info", "Data Log", and "Events". The "Data Log" tab is selected.

The interface shows the following details:

- Hostname: 192.168.10.39
- Log Type:  Current,  Power (kW/hr)
- Monthly:  Monthly, Month: 2008/09
- Custom:  Custom, From: 2008/09/06, To: 2008/09/06
- Records per page: 30
- Navigation: << < 1 / 113 > >> Update

The Data Log table contains the following entries:

Date	PDU	Current
2008/09/06 22:15	1	0.00
2008/09/06 22:14	1	0.00
2008/09/06 22:13	1	0.00
2008/09/06 22:12	1	0.00
2008/09/06 22:11	1	0.00
2008/09/06 22:10	1	0.00
2008/09/06 22:09	1	0.00
2008/09/06 22:08	1	0.00
2008/09/06 22:07	1	0.00
2008/09/06 22:06	1	0.00
2008/09/06 22:05	1	0.00

The Device Summary section at the bottom left shows the following status counts:

- Critical: 0
- Warning: 0
- Unreachable: 0
- Normal: 1

Service Status: Start

## Event Log:

Provides Events Log.

The screenshot displays the 'ServerLink PDU' application window. The 'Events' tab is active, showing a list of events for the device '192.168.10.39 (PDU-01)'. The interface includes a tree view on the left, a main panel with filters, and a table of events. A 'Device Summary' section at the bottom left shows the status of the device.

Hostname	IP	Date	PDU	Event	Curr
N/A	192.168.10.39	4/09/2008 9:21:...	1	ServerLinkPDUService - ...	0
ServerLinkO...	192.168.10.39	4/09/2008 12:08...	1	ServerLinkPDUService - ...	0
ServerLinkO...	192.168.10.39	4/09/2008 4:48...	1	ServerLinkPDUService - ...	0

**Device Summary**

- Critical: 0
- Warning: 0
- Unreschable: 0
- Normal: 1

Service Status: Start