



# **PDU**

# **NPM8C16A**

User Manual

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# 1. Introduction

The PDU is an Internet ready device designed and is equipped with an intelligent current-meter (True RMS) that will indicate the total power consumption of a power strip.

The PDU offers an easy set up and user-friendly communication software. This software provides the function that assistant manager to remotely monitor the multiple PDU power consumption to realize the total current power consumption and utilization for the enterprises.

## Features:

- Built-in web server, manager can real time to monitoring the current consumption of the power strip.
- Build-in true RMS current meter.
- Setup easily, meter can read the IP address directly.
- Homepage support SSL.
- Provide audible alarm when the power consumption over the threshold of warning and overload.
- Send the email and traps when the power consumption exceed the trigger value of warning or overload to the PDU.
- Provide utility, it can monitor a large mount of PDU at the same time.
- Support the SNMP and provide MIB for the PDU to be monitored by NMS.
- Provide per outlet power protection by the circuit breaker.
- Real time to control outlets of PDU.
- Indicate outlets status with LED.
- Support power on sequence.
- Option accessory can support temperature and humidity detection.

## 2. PDU Package

The standard PDU package contains a Power Distribution Unit with supporting hardware and software. The components of the package are:

- Power Distribution Unit.
- Rack mount Brackets.
- CD-ROM, it contains:
  - User Manual.
  - PDU Software.
  - MIB: Management Information Base for Network. (PDUMIB.mib)
  - Adobe Acrobat Reader.

## 3. Function

### Interface

Single current bank



Functions	Description
Ethernet	RJ45 port for network communication port.
Audible Alarm	Warning- 1 beep in 1 second.  Overload- 3 beeps in 1 second.  Note: The audible alarm will keep beeping until the current gets back to normal and the current is lower than the threshold to 0.5 amps.
Function Button	<ul style="list-style-type: none"> <li>● Press and release to turn off the warning beeping. The overload beeping can not be cancelled.</li> <li>● Press and hold the key after 2 beeping; it can let the meter to show up the IP address</li> <li>● Press and hold the key after 4 beeping; it can change the way to get IP by DHCP or fixed IP.</li> <li>● Press and hold the key after 6 beeping; it can reset PDU back to default setting.</li> </ul>
Meter	3 digits to display current and IP Address.
ID	The identification of power bank or PDU.
LED Indicator	SSL (yellow): Light on means web access is protected by SSL.  DHCP (Green): Light on means PDU gets IP address by DHCP.

PDU (Green): Indicate each output power status.

Status (Red): Indicate each circuit status. (by model)

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ENV	RJ11 for ENV probe attached.
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Circuit Breaker	Overload power protection.
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## 4. Installation

This section will provide a quick instruction to install the PDU.

**CAUTION:** This unit is intended for indoor use only. Do not install near water or expose this unit to moisture. To prevent heat buildup, do not coil the power cord when in use. Do not use extension cords. Do not attempt to make any internal changes to the power source. Do not attempt to modify any portion or component.

**CAUTION:** Do not use power generator as input power source of PDU.

**CAUTION:** High-voltage surges and spikes can damage this equipment. To protect from such power surges and spikes, this unit must have a good earth ground or good power surge protection.

**CAUTION:** Do not exceed the AC current rating for the selected model.

**CAUTION:** In order to be absolutely removed from the power supply, the power cord must be unplugged from the power source.

### Rack Mount Instructions

A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature specified by the manufacturer.

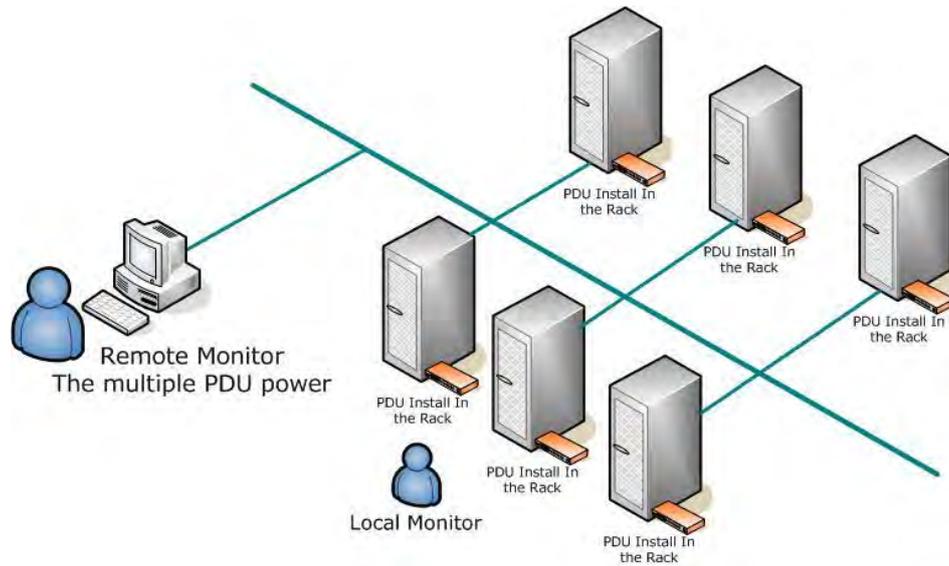
B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips)."

## Diagram



## Hardware

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

**Note 1:**

The default setting for the way to get IP address is DHCP. If PDU can not get the IP from DHCP server, the IP address will stay at 192.168.0.216

**Note 2:**

TO SETUP THE NETWORK SYSTEM FOR PDU, STRONGLY RECOMMEND TO BUILD UP THE POWER MONITORING NETWORK SYSTEM ISOLATED WITH THE OTHERS, IN ORDER TO KEEP THE STABILITY OF GETTING POWER INFORMATION AND SYSTEM OPERATION.

## 5. Web Interface

### Login:

Input the PDU IP address in web browser.

Default IP: 192.168.2.160

Default ID is snmp.

Password is 1234.



## Information: PDU

Display total PDU and each outlet power consumption.

When plug the option device - ENV probe, it will display temperature and humidity information.



The screenshot displays the Niveon Professional web interface. At the top, the logo 'niveon PROFESSIONAL' is visible. Below it, a status bar shows 'Total load: 0.0 A , Status: Normal'. The main content area is divided into sections: 'Information' with a 'PDU' link and a table showing 'PDU' with a value of '0.0 A Normal'; 'Control' with a 'Threshold' link and a table showing 'Warning' at '12.0 A' and 'Overload' at '16.0 A'; and 'Configuration' with links for 'PDU', 'Threshold', 'User', 'Network', 'Mail', 'SNMP', and 'SSL'.

niveon PROFESSIONAL		
Total load: 0.0 A , Status: Normal		
<b>Information</b>	<b>PDU</b>	
<a href="#">PDU</a>	PDU	0.0 A Normal
<a href="#">System</a>		
<b>Control</b>	<b>Threshold</b>	
<a href="#">Outlet</a>	Warning	12.0 A
<b>Configuration</b>	Overload	16.0 A
<a href="#">PDU</a>		
<a href="#">Threshold</a>		
<a href="#">User</a>		
<a href="#">Network</a>		
<a href="#">Mail</a>		
<a href="#">SNMP</a>		
<a href="#">SSL</a>		

## Information: System

Indicate PDU system information, including:

Model No.

Firmware Version

MAC Address

System Name

System Contact

Location



The screenshot displays the Niveon Professional web interface for a PDU. At the top, the Niveon logo is shown with the word 'PROFESSIONAL' underneath. Below the logo, a status bar indicates 'Total load: 0.0 A , Status: Normal'. The main content area is divided into three sections: 'Information', 'Control', and 'Configuration'. The 'Information' section lists 'Model No.' (NPM8C16A), 'Firmware Version' (s4.82-091012-1cb08s), and 'MAC Address' (00:06:18:75:57:D3). The 'Control' section includes 'System Name' (PDU), 'System Contact' (Admin), and 'Location' (Office). The 'Configuration' section lists various settings like PDU, Threshold, User, Network, Mail, SNMP, and SSL. An 'Apply' button is located at the bottom right of the configuration area.

Section	Field	Value
Information	Model No.	NPM8C16A
	Firmware Version	s4.82-091012-1cb08s
	MAC Address	00:06:18:75:57:D3
Control	System Name	PDU
	System Contact	Admin
	Location	Office

## Control: Outlet

Indicate PDU outlet on/off status and control outlet.

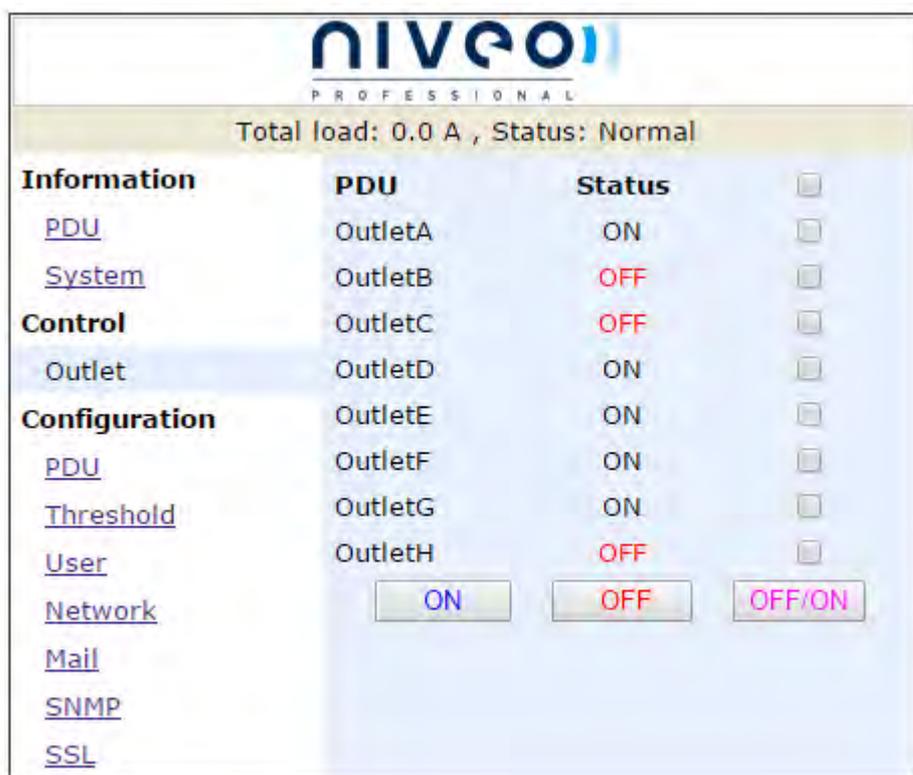
Select the outlet by checking the box and then click ON or OFF button to control output power for PDU

Monitored PDU series does not support this function.

**ON:** Press the icon to turn on the assigned outlets.

**OFF:** Press the icon to turn off the assigned outlets.

**OFF/ON:** Press the icon to reboot the assigned outlets.



## Configuration: PDU

Set the outlet name and delay time.

**Name:** Rename the outlet.

**ON:** Set delay time for power on sequential.

**OFF:** Set delay time for power off sequential.

Note: The maximum delay time is 255 seconds.

NIVEON PROFESSIONAL			
Total load: 0.0 A , Status: Normal			
Information	Name	ON Delay(sec)	OFF Delay(sec)
<a href="#">PDU</a>	OutletA	1	1
<a href="#">System</a>	OutletB	2	2
<b>Control</b>	OutletC	3	3
<a href="#">Outlet</a>	OutletD	4	4
<b>Configuration</b>	OutletE	5	5
<a href="#">PDU</a>	OutletF	6	6
<a href="#">Threshold</a>	OutletG	7	7
<a href="#">User</a>	OutletH	8	8
<a href="#">Network</a>			
<a href="#">Mail</a>			
<a href="#">SNMP</a>			
<a href="#">SSL</a>			

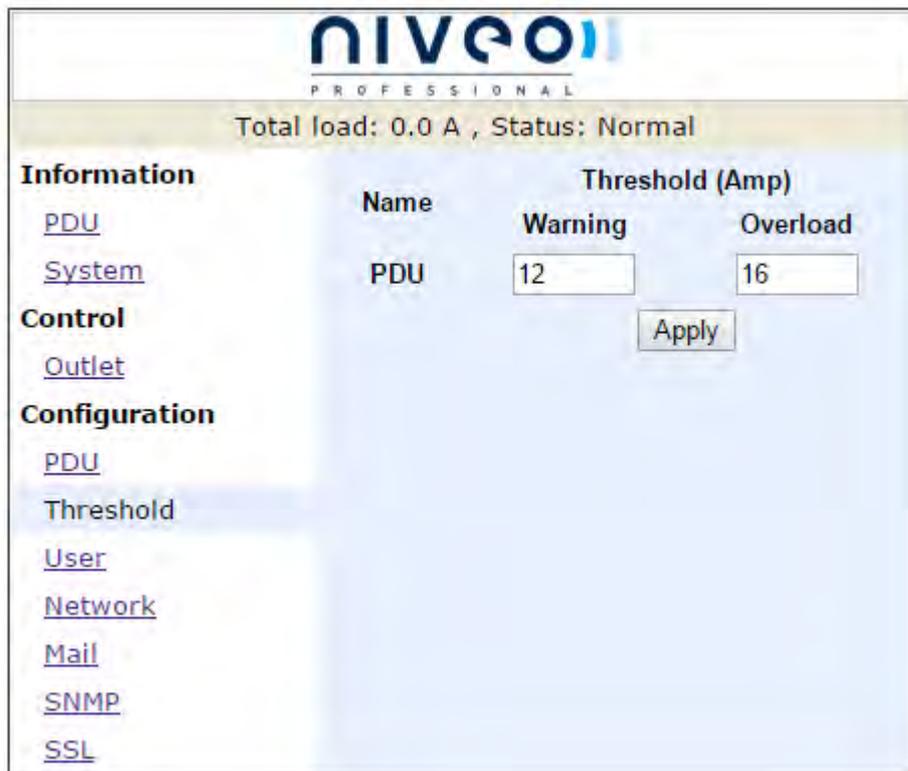
**Note :** After PDU is plugged into main power, PDU system will start to sequentially turn on the output socket according to the pre-set delay time in PDU web interface. The factory default setting for delay time is one second for each outlet; therefore the 8 ports PDU will take 8 seconds, 24 ports PDU will take 24 seconds to complete start-up procedure.

Before the sequence procedure is completed, if a PDU is unplugged from the power source, the outlets which are not turned on will be regarded as remaining at the power-off status. Next time the PDU is plugged into main power, these outlets will not be automatically turned on. These outlets can only be turned on by web interface.

## Configuration: Threshold

Set the warning and overload threshold for each circuit.

Set lower and upper threshold for temperature and humidity.



**niveon**  
PROFESSIONAL

Total load: 0.0 A , Status: Normal

Information	Name	Threshold (Amp)	
		Warning	Overload
<a href="#">PDU</a>	PDU	<input type="text" value="12"/>	<input type="text" value="16"/>
<a href="#">System</a>			

**Control**

[Outlet](#)

**Configuration**

[PDU](#)

[Threshold](#)

[User](#)

[Network](#)

[Mail](#)

[SNMP](#)

[SSL](#)

Apply

## Configuration: User

Change ID and password.

Default ID is snmp and password is 1234.



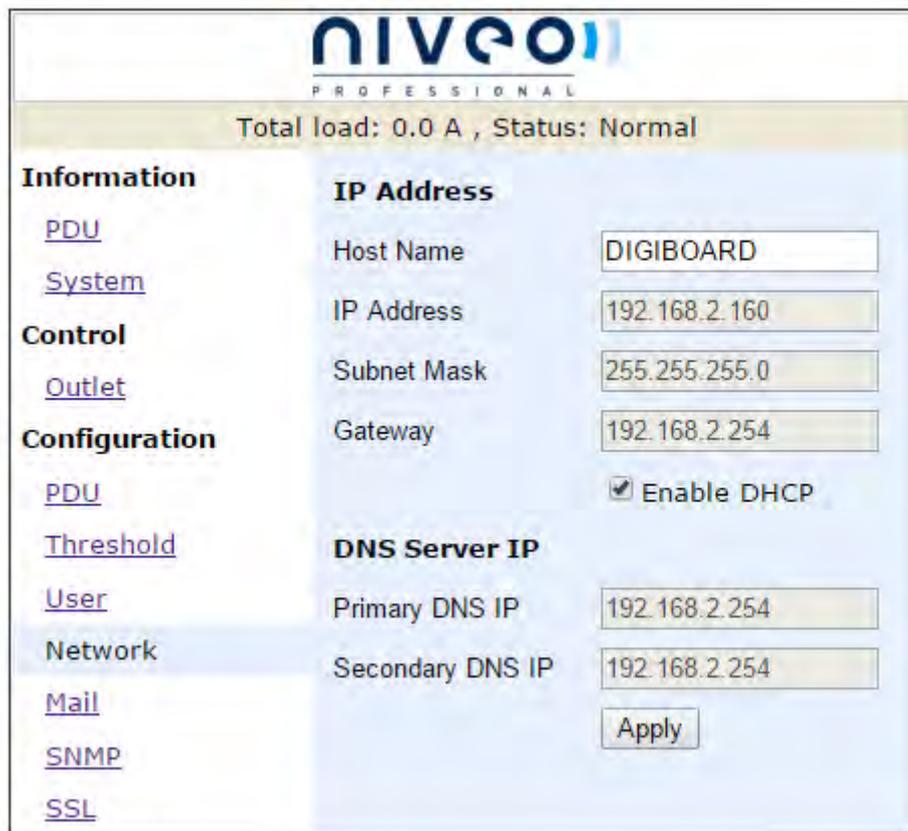
The screenshot displays the Niveon Professional web interface. At the top, the logo "NIVEON PROFESSIONAL" is visible. Below the logo, a status bar indicates "Total load: 0.0 A , Status: Normal". The main content area is divided into a left sidebar and a right main panel. The sidebar contains a list of configuration categories: Information, Control, Configuration, User, Network, Mail, SNMP, and SSL. The "User" category is currently selected. The main panel shows the "Original" and "New" configuration fields for the "User" section. The "Original" section has input fields for "ID" and "Password". The "New" section also has input fields for "ID" and "Password". An "Apply" button is located below the "New" section.

Information	Original
<a href="#">PDU</a>	ID <input type="text"/>
<a href="#">System</a>	Password <input type="text"/>
Control	New
<a href="#">Outlet</a>	ID <input type="text"/>
Configuration	Password <input type="text"/>
<a href="#">PDU</a>	<input type="button" value="Apply"/>
<a href="#">Threshold</a>	
<a href="#">User</a>	
<a href="#">Network</a>	
<a href="#">Mail</a>	
<a href="#">SNMP</a>	
<a href="#">SSL</a>	

## Configuration: Network

PDU network information

**Enable DHCP:** Change the way to get IP address for PDU.



The screenshot displays the Niveon Professional web interface for configuring a PDU's network settings. At the top, the Niveon logo is visible, followed by the text "PROFESSIONAL". Below this, a status bar indicates "Total load: 0.0 A , Status: Normal". The interface is divided into a left sidebar and a main content area. The sidebar contains sections for "Information", "Control", and "Configuration", each with a list of sub-links. The "Information" section includes links for "PDU" and "System". The "Control" section includes a link for "Outlet". The "Configuration" section includes links for "PDU", "Threshold", "User", "Network", "Mail", "SNMP", and "SSL". The "Network" link is currently selected. The main content area is titled "IP Address" and contains several input fields: "Host Name" (DIGIBOARD), "IP Address" (192.168.2.160), "Subnet Mask" (255.255.255.0), and "Gateway" (192.168.2.254). Below these fields is a checked checkbox labeled "Enable DHCP". Underneath, there is a section titled "DNS Server IP" with two input fields: "Primary DNS IP" (192.168.2.254) and "Secondary DNS IP" (192.168.2.254). An "Apply" button is located at the bottom right of the configuration area.

Section	Field	Value
IP Address	Host Name	DIGIBOARD
	IP Address	192.168.2.160
	Subnet Mask	255.255.255.0
	Gateway	192.168.2.254
	Enable DHCP	<input checked="" type="checkbox"/>
DNS Server IP	Primary DNS IP	192.168.2.254
	Secondary DNS IP	192.168.2.254

## Configuration: Mail

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

**Email Server:** The Email Server only support to be input domain name, not IP address.

**Sender's Email:** Input the sender email address.

**Email Address:** Input the recipient email address.

The message in the email:

Indicate OutletA~H-XXXXXXXX status in order

X=0 : means the power off.

X=1 : means the power on.

Note: Make sure DNS server can resolve the Email Server's domain name.

The screenshot shows the Niveon Professional web interface. At the top, the logo 'NIVEON PROFESSIONAL' is displayed. Below the logo, a status bar indicates 'Total load: 0.0 A , Status: Normal'. On the left side, there is a navigation menu with the following items: Information (with sub-links for PDU and System), Control (with a sub-link for Outlet), Configuration (with sub-links for PDU, Threshold, User, Network, Mail, SNMP, and SSL), and Mail (which is currently selected). The main content area is titled 'Email Setting' and contains three input fields: 'Email Server' with the value 'mail.your.com', 'Sender's Email' with the value 'sender@yourcom.com', and 'Recipient's Email Address' with the label 'Email Address'. An 'Apply' button is positioned below the 'Email Address' field.

## Configuration: SNMP

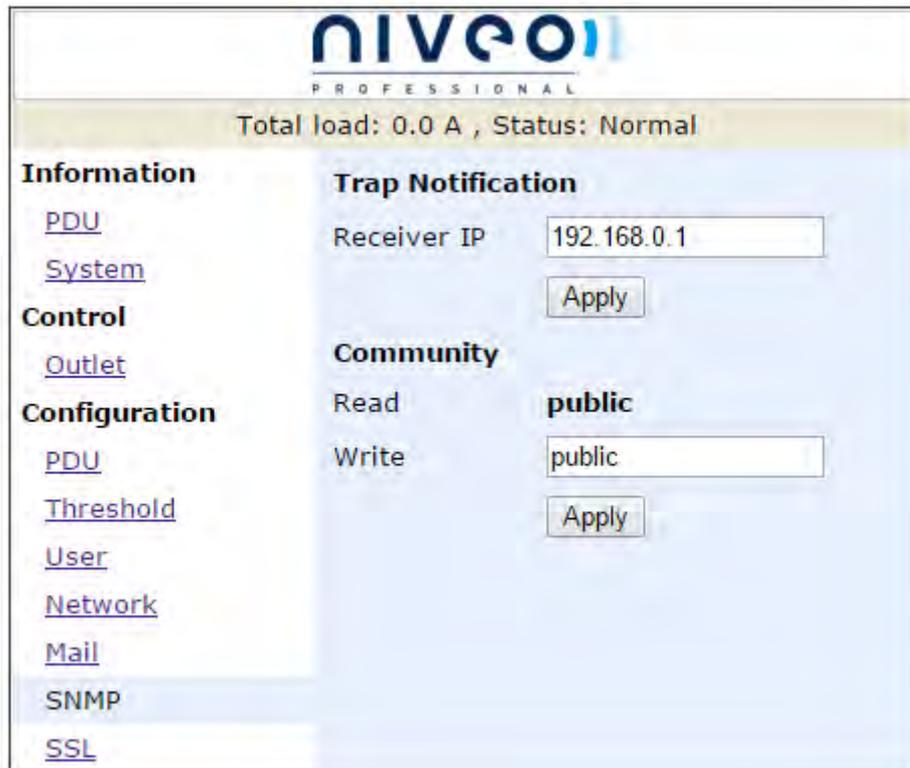
When event occurs, PDU can send out trap message to pre-defined IP address.

**Trap Notification:** Set receiver IP for trap.

**Community:** Set SNMP community.

Read Community is public and fixed.

Default Write Community is "public" and can be modified by user.



The screenshot displays the Niveon Professional web interface. At the top, the logo "NIVEON PROFESSIONAL" is visible. Below the logo, a status bar indicates "Total load: 0.0 A , Status: Normal". The main content area is divided into two columns. The left column contains a navigation menu with the following items: Information (with sub-links for PDU and System), Control (with sub-link for Outlet), Configuration (with sub-links for PDU, Threshold, User, Network, Mail, SNMP, and SSL), and SSL. The right column shows the configuration settings for SNMP. Under the "Trap Notification" section, the "Receiver IP" is set to "192.168.0.1" with an "Apply" button below it. Under the "Community" section, the "Read" community is set to "public" and the "Write" community is set to "public", with an "Apply" button below it.

## Configuration: SSL

Enable SSL for web communication.

User must input the correct ID and password to enable SSL function. The ID and password must be the same with the setting in "User".

The screenshot shows the Niveon Professional web interface. At the top, the logo "niveon PROFESSIONAL" is displayed. Below the logo, a status bar indicates "Total load: 0.0 A , Status: Normal". The main content area is divided into a sidebar on the left and a main configuration area on the right. The sidebar contains the following sections and links:

- Information**
  - [PDU](#)
  - [System](#)
- Control**
  - [Outlet](#)
- Configuration**
  - [PDU](#)
  - [Threshold](#)
  - [User](#)
  - [Network](#)
  - [Mail](#)
  - [SNMP](#)
  - [SSL](#)

The main configuration area for SSL includes:

- Enable SSL**: A checkbox that is currently unchecked.
- Confirmation**: A section containing two input fields:
  - ID**: An empty text input field.
  - Password**: An empty text input field.
- Apply**: A button located below the input fields.