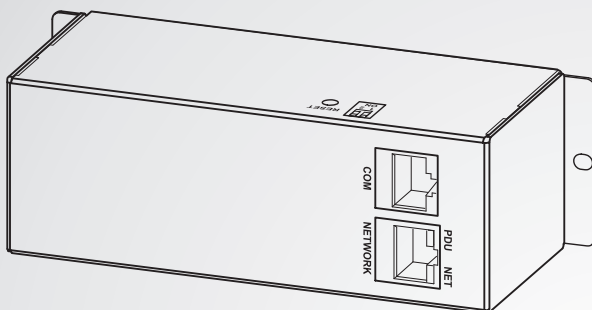




The power behind competitiveness

Delta InsightPower SNMP IPv6 for PDU

User Manual

Save This Manual

This manual contains important instructions and warnings that you should follow during the installation, operation, storage and maintenance of this product. Failure to heed these instructions and warnings will void the warranty.

Copyright©2013 by Delta Electronics Inc. All Rights Reserved. All rights of this User Manual ("Manual"), including but not limited to the contents, information, and figures are solely owned and reserved by Delta Electronics Inc. ("Delta"). The Manual can only be applied to the operation or the use of this product. Any disposition, duplication, dissemination, reproduction, modification, translation, extraction, or usage of this Manual in whole or in part is prohibited without the prior written permission of Delta. Given that Delta will continuously improve and develop the product, changes may be made to the information in this Manual at any time without obligation to notify any person of such revision or changes. Delta will make all possible efforts to secure the accuracy and the integrity of this Manual. Delta disclaims any kinds or forms of warranty, guarantee, or undertaking, either expressly or implicitly, including but not limited to the completeness, faultlessness, accuracy, non-infringement, merchantability or fitness for a particular purpose of the Manual.

Table of Contents

Chapter 1 : Important Safety Instructions ----- 1

 1-1 Warnings ----- 1

 1-2 Standard Compliance----- 1

Chapter 2 : Introduction----- 2

 2-1 Product Description----- 2

 2-2 Features ----- 2

 2-3 Package Contents----- 3

 2-4 Interface----- 4

Chapter 3 : Installation ----- 7

 3-1 Install the SNMP IPv6 on your PDU ----- 7

 3-2 Connection of Multiple PDU Devices ----- 8

Chapter 4 : System Configurations ----- 10

 4-1 Configuring via InsightPower SNMP IPv6 for PDU Web ----- 10

 4-2 Configuring with EzSetting ----- 12

 4-3 Configuring via Telnet ----- 14

 4-4 Configuring through COM Port ----- 14

 4-5 Configuring via Text Mode ----- 16

Chapter 5 : InsightPower SNMP IPv6 for PDU Web ----- 23

 5-1 Monitor ----- 24

 5-1-1 Information ----- 24

 Status ----- 24

 Detail ----- 25

 5-1-2 History ----- 25

 Event Log ----- 25

 Energy Log ----- 26

 Energy Compare ----- 27



	Data Log -----	28
	Configuration-----	28
5-1-3	Environment -----	29
	Information -----	29
	Configuration-----	30
5-1-4	About -----	30
	Information -----	30
5-2	Device -----	31
5-2-1	Configuration -----	31
	PDU -----	31
5-3	System -----	32
5-3-1	Administration -----	32
	User Manager-----	32
	TCP/ IP-----	33
	Web -----	34
	Console-----	35
	FTP-----	36
	Time Server -----	37
	Syslog-----	38
	Batch Configuration -----	38
	Upgrade-----	40
5-3-2	Notification -----	41
	SNMP Access-----	41
	SNMPv3 USM -----	42
	SNMP Trap-----	43
	Mail Server -----	44
Chapter 6 :	SNMP Device Firmware Upgrade-----	46
Chapter 7 :	Troubleshooting -----	49
Appendix A :	Specifications -----	56
Appendix B :	Warranty-----	57

Chapter 1 : Important Safety Instructions

1-1 Warnings

- The InsightPower SNMP IPv6 for PDU (hereinafter referred to as SNMP IPv6) is applicable to the following models: PDU1113, PDU1213, PDU1311, PDU1315, PDU1425, PDU2421, and PDU2525.
- The SNMP IPv6 needs to be mounted on a PDU. Before installation, ensure that all power sources and critical loads connected to the PDU are disconnected.
- The SNMP IPv6 can work with up to 16 cascading PDU units.
- Do not place or use this unit in the presence of flammable substances.
- Do not attempt to disassemble the unit.
- Do not attempt to perform any internal modifications on the unit.
- Do not attempt to fix/ replace internal components. When repair is needed, refer all servicing to the nearest Delta service center or authorized distributor.
- Do not allow any objects or liquids of any kind to penetrate the unit.
- Always follow this User Manual to install and operate this unit.
- Do not play the included CD on a conventional CD player. This could generate loud noise at a level that could result in permanent hearing loss.

1-2 Standard Compliance

- **EN 55022: 2006 + A1: 2007, Class B**
- **EN 55024: 1998 + A1: 2001 + A2: 2003**
 - IEC 61000-4-2: 1995+A1: 1998+A2: 2000
 - IEC 61000-4-3: 2006
 - IEC 61000-4-4: 2004
 - IEC 61000-4-5: 2005
 - IEC 61000-4-6: 2007
 - IEC 61000-4-8: 1993+A1: 2000
 - IEC 61000-4-11: 2004

Chapter 2 : Introduction

2-1 Product Description

The InsightPower SNMP IPv6 for PDU (hereinafter referred to as SNMP IPv6) is a device that provides an interface between a PDU (Power Distribution Unit) and a network. This device communicates with the PDU, acquires information and remotely manages the PDU via a network system. The SNMP IPv6 supports public protocols including SNMP and HTTP. You can effortlessly configure this device using a network system, and easily obtain your PDU's status and manage your PDU via the SNMP IPv6.

2-2 Features

- **Network PDU management**

Allows remote management of the PDU from any workstation through Internet or Intranet.

- **Remote PDU monitoring via SNMP & HTTP**

Allows remote monitoring of the PDU using SNMP NMS, Delta MIB (Management Information Base) or a Web Browser.

- **PDU and system function configurations from any client (password protected)**

Set the PDU and system parameters through a Web Browser.

- **Event & data log keeping**

Provides history data of the PDU's power quality, event log and status.

Other features and supported protocols include:

- User notification via SNMP Traps and E-mail.
- Network Time Protocol.
- Telnet configuration.
- BOOTP/ DHCP.

- HTTPS, SSH, SFTP, and SNMPv3 security protocols.
- RADIUS login and local authentication.
- Remote event log management through syslog.
- IPv4 protocol
- IPv6 protocol (IPv6 Ready Logo Phase 2 (Core for Host, Logo ID 02-C-000459)
- Monitoring up to 16 cascading PDU devices.

2-3 Package Contents

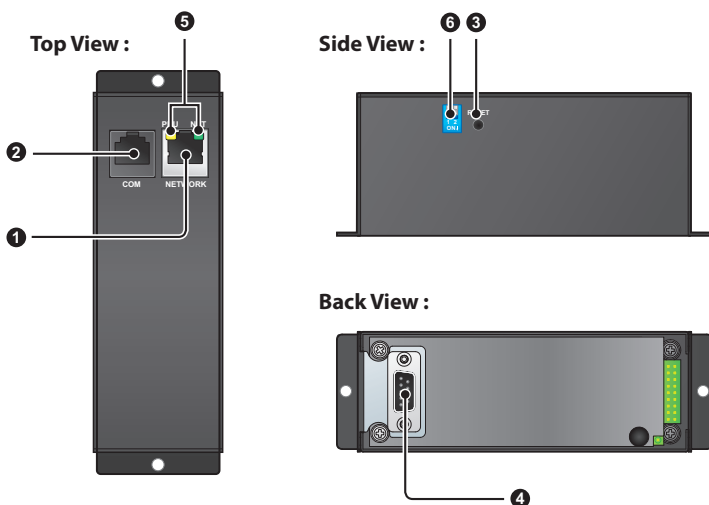
Please carefully verify the SNMP IPv6 and the included accessories. Contact your dealer if any item is missing or damaged. Should you return the items for any reason, ensure that they are carefully repacked using the original packing materials came with the unit.



No.	Item	Quantity
1	InsightPower SNMP IPv6 for PDU	1 PC
2	RJ45 to DB9 cable	1 PC
3	Software & User's Manual CD	1 PC

2-4 Interface

The interface includes a NETWORK port, a COM port, LED indicators, a Reset button, DIP switches and an RS232 port (female) shown below. For their functions and indications, please refer to the following table.



No.	Item	Description
1	Network Port	Connects to the network.
2	Console (COM) Port	1. Connects to a workstation with the provided RJ45 to DB9 cable. 2. Connects to an EnviroProbe.
3	Reset Button	Reset the SNMP IPv6 only. This does not affect the operation of the PDU.

No.	Item	Description
④	RS232 Port (female)	Connects to your PDU's RS232 port (male) and gets the PDU's information.
⑤	LED Indicators	When the SNMP IPv6 is initializing or upgrading firmware, the two LED indicators flash simultaneously to show its status. Refer to the following: • Rapid simultaneous flashing (every 50ms) : Initialization or firmware upgrade in progress. • Slow simultaneous flashing (every 500ms) : Initialization failed.



WARNING : Do **NOT** remove the SNMP IPv6 or disconnect the PDU's input power during initialization or firmware upgrade! This could result in data loss or damage to the SNMP IPv6.

The green LED indicator shows the network connection status:

- **ON** : Network connection established and the IPv4 address is useable.
- **OFF** : Not connected to a network.
- **Flashes slowly** (every 500ms) : Faulty IP address.

The yellow LED indicator shows the linking status between the SNMP IPv6 and the PDU:

- **Flashes rapidly** (every 50ms): PDU linked.
- **Flashes slowly** (every 500ms): PDU not linked.

No.	Item	Description
-----	------	-------------

- 6 DIP Switches Set up operation modes.

DIP switches	Operation mode	Description
	Normal Mode	The SNMP IPv6 works with the PDU. It provides the PDU's status information and parameters through a network system.
	Pass Through Mode	The SNMP IPv6 stops polling the PDU but transfers the communication data between the console port and the PDU.
	Sensor Mode (with EnviroProbe)	The SNMP IPv6 works with the PDU and an optional EnviroProbe. It provides not only the PDU's status information and parameter readings, but also the EnviroProbe's status information and its environmental parameters such as temperature and humidity.
	Configuration Mode	In this mode, the user can login through the console port and configure the SNMP IPv6's settings. Please refer to 4-4 Configuring through COM Port .

NOTE

For EnviroProbe information, please refer to the Installation Guide included in the package of the EnviroProbe.

Chapter 3 : Installation

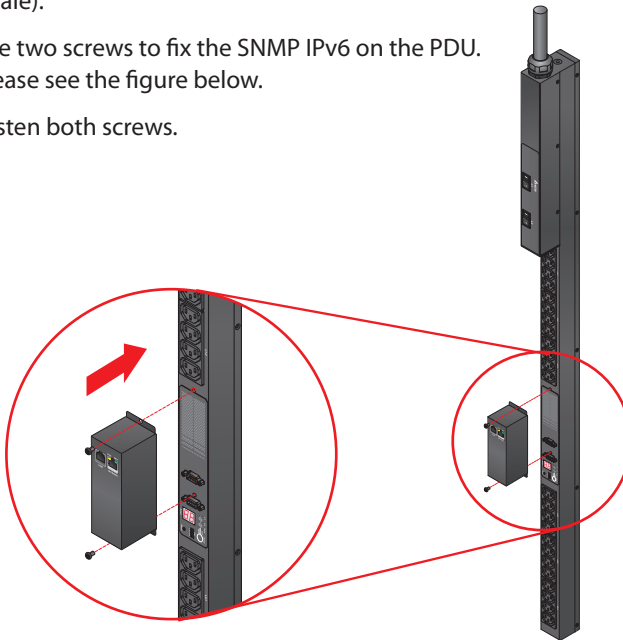


Before installation, please disconnect all power sources and critical loads connected to the PDU. Otherwise, the SNMP IPv6 might have shorting issues to cause PDU shutdown or damage.

3-1 Install the SNMP IPv6 on your PDU

Please follow the procedures below to install the SNMP IPv6 on your PDU (*see Figure 3-a*).

- Step 1** Turn off the PDU (make sure the PDU's input breakers are in the **OFF** position).
- Step 2** Connect the SNMP IPv6's RS232 port (female) with your PDU's RS232 port (male).
- Step 3** Use two screws to fix the SNMP IPv6 on the PDU. Please see the figure below.
- Step 4** Fasten both screws.



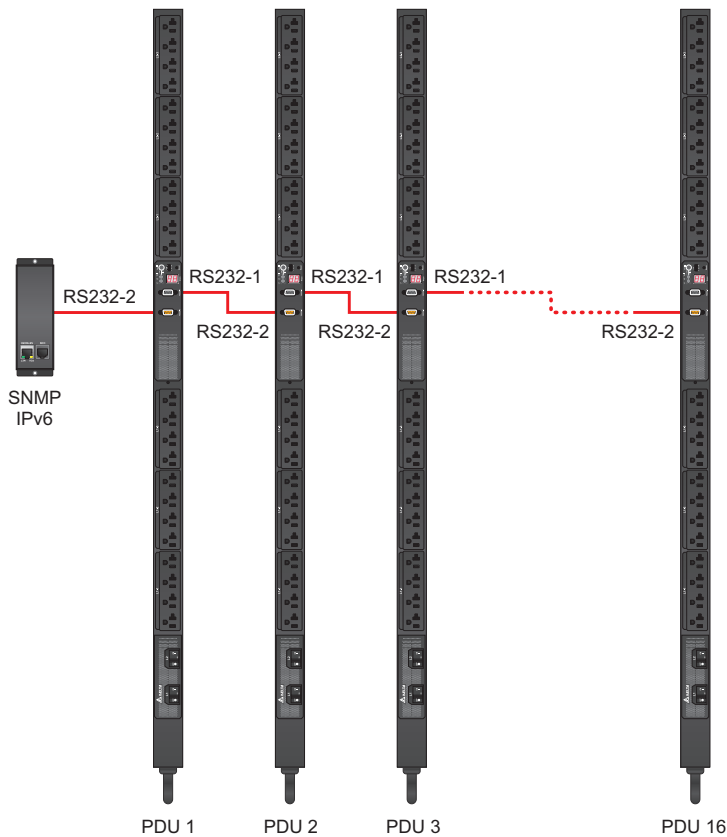
(Figure 3-a : Install the SNMP IPv6 on your PDU)

3-2 Connection of Multiple PDU Devices

The SNMP IPv6 can connect with up to 16 PDU devices (different models are allowed). If you wish to cascade PDU devices, please set a unique ID No. (0~15) for each PDU with its own four DIP switches (*see Table 3-1*) and use RS232 cables to connect PDU devices (*see Figure 3-b*).

Table 3-1 : Settings of PDU DIP Switches

PDU DIP Switches	ID Number	PDU DIP Switches	ID Number	PDU DIP Switches	ID Number
ON  1 2 3 4	0	ON  1 2 3 4	6	ON  1 2 3 4	12
ON  1 2 3 4	1	ON  1 2 3 4	7	ON  1 2 3 4	13
ON  1 2 3 4	2	ON  1 2 3 4	8	ON  1 2 3 4	14
ON  1 2 3 4	3	ON  1 2 3 4	9	ON  1 2 3 4	15
ON  1 2 3 4	4	ON  1 2 3 4	10		
ON  1 2 3 4	5	ON  1 2 3 4	11		



(Figure 3-b : Connection of Multiple PDU Devices)

Chapter 4 : System Configurations

There are different ways you can configure your SNMP IPv6. If a network connection is available at your location, the following methods can be used:

- **Web-based interface** : The InsightPower SNMP IPv6 for PDU Web offers comprehensive system management and monitoring. Please refer to **Chapter 5: InsightPower SNMP IPv6 for PDU Web**.
- **EzSetting** : Use the provided program EzSetting to quickly set up your SNMP IPv6. Please refer to **4-2 Configuring with EzSetting**.
- **Telnet mode** : Configure your SNMP IPv6 in text mode. Please refer to **4-3 Configuring via Telnet**.

The above-mentioned methods require network connection. If not available, you can use direct COM port connection to set up your SNMP IPv6. Please see **4-4 Configuring through COM Port**.



NOTE

1. To ensure system security, it is highly recommended that you change your account and password after the first login.
2. If you have multiple SNMP IPv6 units installed in your network, we highly suggest that you change the SNMP IPv6's default Host Name to avoid conflicts. Also, it is recommended that you disable BOOTP/ DHCP and manually assign a valid static IP address to the SNMP IPv6.

4-1 Configuring via InsightPower SNMP IPv6 for PDU Web

To set up the SNMP IPv6 via your web browser, please follow the instructions below:

- Step 1** Use a CAT5 network cable to connect the SNMP IPv6's Network port to the network. Launch your web browser. In the address bar, enter the SNMP IPv6's default Host Name **InsightPower**, or default IP address **192.168.1.100**. If you are unable to connect, please see **Chapter 7 : Troubleshooting Q6**.

NOTE

If you have previously changed the SNMP IPv6's Host Name or IP address, connect with the new settings.

- Step 2** Log in as Administrator (default account/ password: admin/ password, case sensitive).
- Step 3** Specify your preferred display language (default: English) from the drop-down menu on the top right of the page. The SNMP IPv6 remembers your language preference. In the following instructions, English is chosen as the display language.
- Step 4** Click **System** → **Administration** → **User Manager**. Manage your login accounts and passwords under the "Local Authentication" subhead. The access permission for the account types is shown as follows:
- 1) **Administrator** : Allowed to modify all settings.
 - 2) **Device Manager** : Allowed to modify device-related settings.
 - 3) **Read Only User** : Only allowed to view settings without the permission to make changes.

You can manually specify whether users are allowed to log in from other LANs. If you wish to block login attempts from external connections, select **Only in This LAN**. Otherwise, select **Allow Any**.

- Step 5** Click **System** → **Administration** → **TCP/ IP** to set Host Name, IP address, Subnet Mask and Gateway IP for the SNMP IPv6.
- Step 6** Click **Time Server** to manually set time and date for the system, or enable automatic time synchronization between the SNMP IPv6 and the time servers.

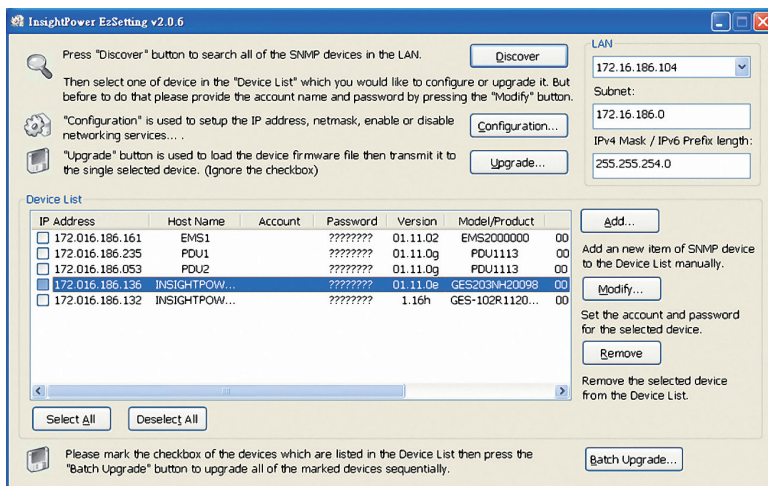
NOTE

To completely set up your SNMP IPv6, please refer to **Chapter 5: Insight-Power SNMP IPv6 for PDU Web**.

4-2 Configuring with EzSetting

Included in the provided CD, the EzSetting (compatible with Windows 2000/ 2003/ 2008/ XP/ Vista/ 7) allows you to easily configure your SNMP IPv6 and upgrade firmware on your SNMP devices. Follow the instructions below:

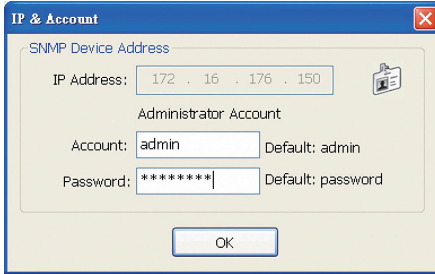
- Step 1** Use a CAT5 cable to connect the SNMP IPv6's Network port to the network.
- Step 2** Make sure the two DIP switches of the SNMP IPv6 are set to the **OFF** position (Normal Mode) to enable network communication. Make sure the workstation and the SNMP IPv6 are on the same LAN.
- Step 3** Insert the provided CD in the CD-ROM drive. From the root directory, launch EzSetting.
- Step 4** Click **Discover** to search all available SNMP devices on the LAN. A list of devices will be shown.



NOTE

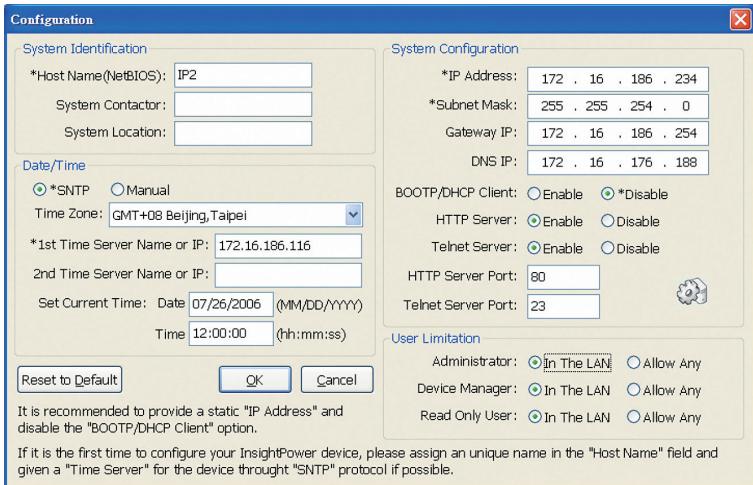
1. If you want to search SNMP devices in a different domain, change the **Subnet** and **IPv4/ IPv6 Prefix Length** and click **Discover**.
2. If the SNMP IPv6 can not be found, check UDP port 3456 on the workstation you are using. Make sure it is open.

- Step 5** Select the SNMP IPv6 that you want to modify from the Device List. Click **Modify** and enter Administrator's account and password (default: admin/ password, case sensitive).



The "IP & Account" dialog box is shown. It has a title bar with "IP & Account" and a close button. Inside, there's a section "SNMP Device Address" with an "IP Address" field containing "172 . 16 . 176 . 150" and a clipboard icon. Below that is the "Administrator Account" section with "Account" (admin) and "Password" (*****). To the right of these fields are labels "Default: admin" and "Default: password". At the bottom is an "OK" button.

- Step 6** Click **Configuration** to configure network settings.



The "Configuration" dialog box is shown. It has a title bar with "Configuration" and a close button. It's divided into two main sections: "System Identification" and "System Configuration".
System Identification: Includes fields for "*Host Name(NetBIOS): IP2", "System Contactor:", "System Location:", "Date/Time" (with radio buttons for *SNTP and Manual, and a dropdown for Time Zone: GMT+08 Beijing,Taipei), "*1st Time Server Name or IP: 172.16.186.116", "2nd Time Server Name or IP:", "Set Current Time: Date 07/26/2006 (MM/DD/YYYY)", and "Time 12:00:00 (hh:mm:ss)". There are "Reset to Default", "OK", and "Cancel" buttons.
System Configuration: Includes fields for "*IP Address: 172 . 16 . 186 . 234", "*Subnet Mask: 255 . 255 . 254 . 0", "Gateway IP: 172 . 16 . 186 . 254", "DNS IP: 172 . 16 . 176 . 188", "BOOTP/DHCP Client: Enable / *Disable", "HTTP Server: Enable / Disable", "Telnet Server: Enable / Disable", "HTTP Server Port: 80", and "Telnet Server Port: 23".
User Limitation: Includes radio buttons for "Administrator: In The LAN / Allow Any", "Device Manager: In The LAN / Allow Any", and "Read Only User: In The LAN / Allow Any".
 At the bottom, there's a note: "It is recommended to provide a static 'IP Address' and disable the 'BOOTP/DHCP Client' option. If it is the first time to configure your InsightPower device, please assign a unique name in the 'Host Name' field and given a 'Time Server' for the device through 'SNTP' protocol if possible."



Refer to **Chapter 5 : InsightPower SNMP IPv6 for PDU Web** for complete configurations.

4-3 Configuring via Telnet

- Step 1** Use a CAT5 network cable to connect the SNMP IPv6's Network port to the network.
- Step 2** Connect the workstation (Windows or Linux) to the LAN that the SNMP IPv6 is connected to.
- Step 3** For Windows, launch DOS prompt mode (**Start** → **Run** → key in **cmd** and press **Enter**). For Linux, launch Shell.
- Step 4** Enter the following command: **telnet InsightPower** or **telnet IP address** to initiate telnet connection with the SNMP IPv6.
- Step 5** When connection is established, enter Administrator's account and password (default: admin/ password, case sensitive). The Main Menu will appear on the screen. Please refer to **4-5 Configuring via Text Mode** for more information.

NOTE

1. The SNMP IPv6 terminates idle connections after 60 seconds.
2. Refer to **Chapter 5: InsightPower SNMP IPv6 for PDU Web** for complete configurations.

4-4 Configuring through COM Port

If a network connection is not available at your location, you can still set up the SNMP IPv6 via COM port connection. Please follow the instructions below:

NOTE

If you are running a non-Windows system, refer to your system's user manual for Telnet clients.

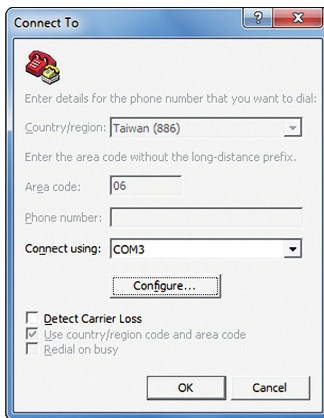
- Step 1** Use the provided RJ45 to DB9 cable to connect the SNMP IPv6's COM port to the workstations' COM port.
- Step 2** Make sure the two DIP switches of the SNMP IPv6 are set to the **OFF** position (Normal Mode).

Step 3 For Windows 2000, 2003, 2008 and XP, go to **Start → Programs → Accessories → Communications** and select **HyperTerminal**.

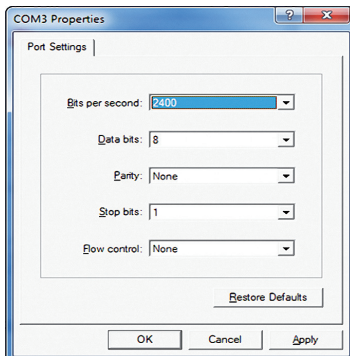
**NOTE**

Microsoft has removed HyperTerminal from Windows Vista and later versions. If your operation system does not include the program, a free alternative Telnet/SSH client PuTTY can be downloaded from <http://www.putty.org>.

Step 4 Enter a name, choose an icon for the connection and click **OK**. From the drop-down menu **Connect using**, select the COM port that is connected to the SNMP IPv6.



Step 5 Click **Configure** and set up COM port parameters as follows:



Step 6 Click **OK** to continue. Set the two DIP switches of the SNMP IPv6 to the **ON** position (Configuration Mode), and HyperTerminal will automatically connect to the SNMP IPv6). If it does not connect, click the telephone icon from the tool bar. When connection is established, log in with Administrator's account/ password (default: admin/ password, case sensitive). Once you are logged in, the Main Menu appears on the screen. Please refer to **4-5 Configuring via Text Mode** for more information.

4-5 Configuring via Text Mode

You can configure the SNMP IPv6 via text mode by using Telnet/ SSH clients such as HyperTerminal and PuTTY. In this section, you can find descriptions and default settings.

Main Menu

```
+=====+
|      Main Menu      |
+=====+

Web Card Version 01.00.00
MAC Address 00-30-ab-25-e9-1e
[1].User Manager
[2].TCP/IP Setting
[3].Network Parameter
[4].Time Server
[5].Soft Restart
[6].Reset All To Default
[z].Exit Without Save
[0].Save And Exit

Please Enter Your Choice =>
```

 User Manager

```
+-----+
|   User Manager   |
+-----+

RADIUS
[1].RADIUS Auth: Disable
[2].Server:
[3].Secret:
[4].Port:      1812
-----
Local Auth
  Administrator
[5].Account:   admin
[6].Password:  *****
[7].Limitation: Only in This LAN
  Device Manager
[8].Account:   device
[9].Password:  *****
[a].Limitation: Only in This LAN
  Read Only User
[b].Account:   user
[c].Password:  *****
[d].Limitation: Allow Any
[0].Back To Previous Menu

Please Enter Your Choice =>
```

No.	Item	Description	Default
[1]	RADIUS Auth	Specify whether RADIUS login is allowed.	Disable
[2]	Server	The RADIUS server name.	
[3]	Secret	The RADIUS secret.	
[4]	Port	The RADIUS port number.	1812
[5]	Administrator Account	The default account/ password for the Administrator (case sensitive).	admin
[6]	Administrator Password		password
[7]	Administrator Limitation	Restrict Administrator login area.	Only in This LAN
[8]	Device Manager Account	The default account/ password (case sensitive) for the Device Manager. This account is only permitted to change device-related settings.	device
[9]	Device Manager Password		password

No.	Item	Description	Default
[a]	Device Manager Limitation	Restrict Device Manager login area.	Only in This LAN
[b]	Read Only User Account	The default account/ password (case sensitive) for Read Only User. This account is only allowed to view settings without the permission to make changes.	user
[c]	Read Only User Password		password
[d]	Read Only User Limitation	Restrict Read Only User login area.	Allow Any

TCP/IP Setting

```

+=====+
|   TCP/IP Setting   |
+=====+
[1].IPv4 Address:      192.168.001.100
[2].IPv4 Subnet Mask:  255.255.255.000
[3].IPv4 Gateway IP:   192.168.001.254
[4].IPv4 DNS or WINS IP:192.168.001.001
[5].DHCPv4 Client:     Enable
[6].IPv6 Address:      fe80::230:abff:fe25:900
[7].IPv6 Prefix Length: 64
[8].IPv6 Gateway IP:   ::
[9].IPv6 DNS IP:       ::
[a].DHCPv6:            Enable
[b].Host Name(NetBIOS): INSIGHTPOWER
[c].System Contactor:
[d].System Location:
[e].Auto-Negotiation:  Enable
[f].Speed:             100M
[g].Duplex:             Full
[h].Status Stable:     3
[i].Telnet Idle Time:  60 Seconds
[0].Back To Previous Menu

```

Please Enter Your Choice =>

No.	Item	Description	Default
[1]	IPv4 Address	The IPv4 address.	192.168.001.100
[2]	IPv4 Subnet Mask	The IPv4 subnet mask setting.	255.255.255.000
[3]	IPv4 Gateway IP	The IPv4 gateway's IP address.	192.168.001.254
[4]	IPv4 DNS or WINS IP	IPv4 Domain Name Server or WINS IP.	192.168.001.001
[5]	DHCPv4 Client	Enable/ Disable DHCPv4 protocol.	Enable
[6]	IPv6 Address	The IPv6 address.	
[7]	IPv6 Prefix Length	The IPv6 prefix length.	
[8]	IPv6 Gateway IP	The IPv6 gateway's IP address.	
[9]	IPv6 DNS IP	IPv6 Domain Name Server's IP address.	
[a]	DHCPv6	Enable/ Disable DHCPv6 protocol.	Enable
[b]	Host Name (NetBIOS)	The Host Name for the SNMP IPv6.	INSIGHTPOWER
[c]	System Contact	The System Contact information.	
[d]	System Location	The System Location information.	
[e]	Auto-Negotiation	Enable/disable automatic transfer rate (10/ 100Mbps) negotiation.	Enable
[f]	Speed	If the Auto-Negotiation is disabled, you can specify the transfer rate.	100M
[g]	Duplex	If the Auto-Negotiation is disabled, you can specify the duplex mode.	Full
[h]	Status Stable	Status change confirmation check time.	3
[i]	Telnet Idle Time	Telnet connection time-out setting.	60 Seconds

Network Parameter

```

+=====+
|   Network Parameter   |
+=====+

[1].HTTP Server:         Enable
[2].HTTPS Server:        Enable
[3].Telnet Server:       Enable
[4].SSH/SFTP Server:     Enable
[5].FTP Server:          Disable
[6].Syslog:              Disable
[7].HTTP Server Port:    80
[8].HTTPS Server Port:   443
[9].Telnet Server Port:  23
[a].SSH Server Port:     22
[b].FTP Server Port:     21
[c].Syslog Server1:
[d].Syslog Server2:
[e].Syslog Server3:
[f].Syslog Server4:
[g].SNMP Get,Set Port:  161
[0].Back To Previous Menu

Please Enter Your Choice =>
    
```

No.	Item	Description	Default
[1]	HTTP Server	Enable/ disable HTTP protocol.	Enable
[2]	HTTPS Server	Enable/ disable HTTPS protocol.	Enable
[3]	Telnet Server	Enable/ disable Telnet protocol.	Enable
[4]	SSH/ SFTP Server	Enable/ disable SSH/ SFTP protocol.	Enable
[5]	FTP Server	Enable/ disable FTP protocol.	Disable
[6]	Syslog	Enable/ disable remote Syslog.	Disable
[7]	HTTP Server Port	HTTP port.	80
[8]	HTTPS Server Port	HTTPS port.	443
[9]	Telnet Server Port	Telnet port.	23
[a]	SSH Server Port	SSH port.	22
[b]	FTP Server Port	FTP port.	21
[c]	Syslog Server 1	The Host Name of remote Syslog Server 1.	
[d]	Syslog Server 2	The Host Name of remote Syslog Server 2.	

No.	Item	Description	Default
[e]	Syslog Server 3	The Host Name of remote Syslog Server 3.	
[f]	Syslog Server 4	The Host Name of remote Syslog Server 4.	
[g]	SNMP Get, Set Port	The SNMP port.	161



Time Server

You can manually adjust time and date for the SNMP IPv6 or set up automatic time server synchronization. The SNMP IPv6, Windows XP and later versions support SNTP (Simple Network Time Protocol). If you need to start up a time server service on your workstation, please refer to **Chapter 7: Troubleshooting Q1**.

```
+-----+
|      Time Server      |
+-----+
[1].Time Selection:      SNTP
[2].Time Zone:           +0 hr
[3].1st Time Server:     POOL.NTP.ORG
[4].2nd Time Server:
[5].Manual Date:         01/01/2000 (MM/DD/YYYY)
[6].Manual Time:         00:00:00 (hh:mm:ss)
[0].Back To Previous Menu

Please Enter Your Choice =>
```

No.	Item	Description	Default
[1]	Time Selection	SNTP or manual.	SNTP
[2]	Time Zone	Adjust your time zone.	+0 hr
[3]	1 st Time Server	The first time server for SNTP.	POOL.NTP.ORG
[4]	2 nd Time Server	The second time server for SNTP.	
[5]	Manual Date	Set the date manually.	01/01/2000
[6]	Manual Time	Set the time manually.	00:00:00

 Soft Restart

Reset the SNMP IPv6. This will not affect the operation of the PDU.

 Default Reset

Reset to manufacture default.

 Exit Without Saving

Exit and ignore changes.

 Save and Exit

Preserve your changes and exit.

Chapter 5 : InsightPower SNMP IPv6 for PDU Web

To configure the SNMP IPv6 via the InsightPower SNMP IPv6 for PDU Web, please follow the steps below:

- Step 1** Make sure that your SNMP IPv6 is connected to the LAN. Use a CAT5 network cable to connect the SNMP IPv6's Network port to the network.
- Step 2** Launch your web browser. In the address bar, enter the SNMP IPv6's Host Name **http://InsightPower/** or IP address. For encrypted connection, enter **https://InsightPower/** or **https://192.168.1.100/**.
- Step 3** When connection is established, the login page appears. Enter your account and password (default: admin/ password).



NOTE

1. If you have previously changed the SNMP IPv6's Host Name or IP address, please connect with new settings.
2. If the login page is accessible, but you are unable to log in with correct account and password, additional network configuration may be needed. The cause could be the IP subnet of the computer you are logging in to is different from the SNMP IPv6's. To solve this issue, please refer to **Chapter 7: Troubleshooting Q3**.
3. The SNMP IPv6 will automatically log off idle connections after 30 minutes.

The InsightPower SNMP IPv6 for PDU Web includes Monitor, Device and System these three items for you to monitor and set up your PDUs. Please refer to the following sections **5-1~5-3** for more details.

5-1 Monitor

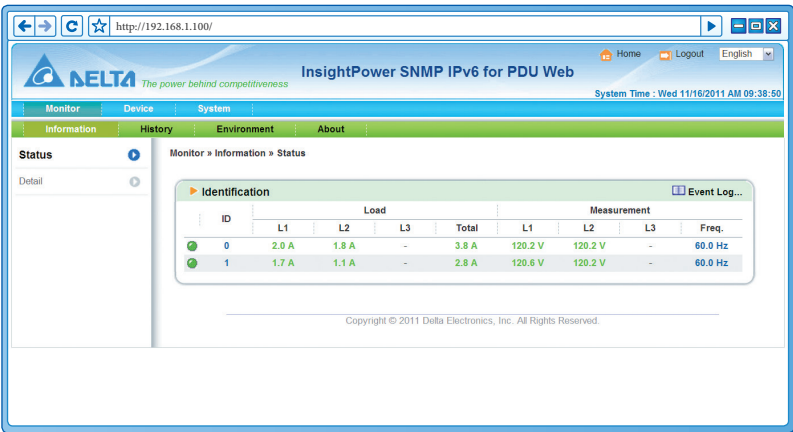
Under the Monitor category, there are Information, History, Environment and About these four items. You can monitor your PDUs via this Monitor page.

5-1-1 Information

The Information page includes Status and Detail these two selections. Please note that different PDUs provide different information; thus, the contents shown on your web page may be different from those shown in this user manual.

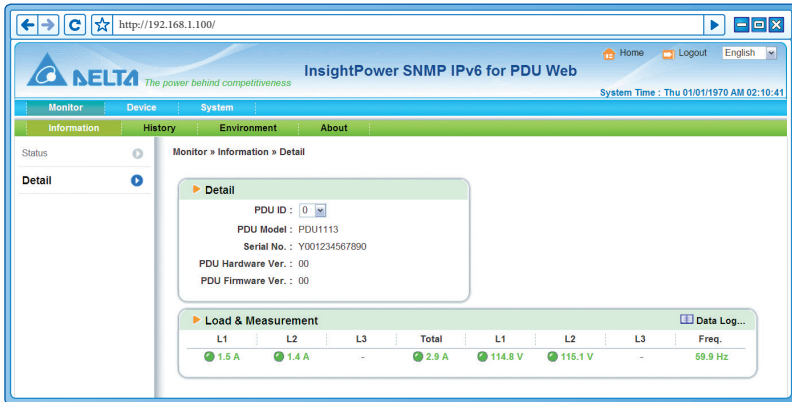
Status

Go to **Monitor** → **Information** → **Status** to look up your PDUs' status. The page shows each PDU and its branches' load, voltage and frequency information. The readings will be updated automatically. You can click the upper-right button named **Event Log** to trace the events that your PDUs had. For more information about event log, please refer to **5-1-2 History - Event Log**.



Detail

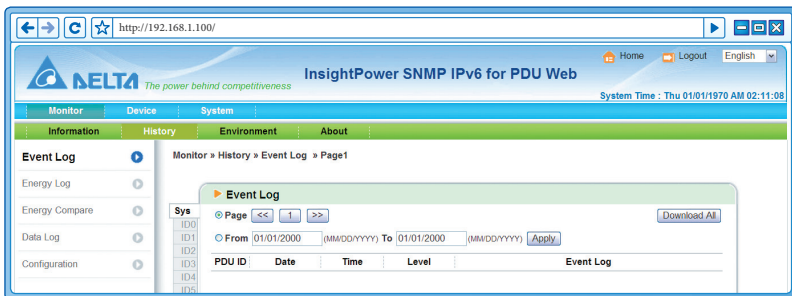
Go to **Monitor** → **Information** → **Detail** to look up a specific PDU's ID No., model No., serial No., hardware version, firmware version, and relevant readings such as load, frequency, watt & kWh, etc. You can also click the **Data Log** and **Energy Log** buttons (if your web page show the two buttons) to view more relevant readings. For more information about data log and energy log, please refer to **5-1-2 History - Event Log** and **5-1-2 History - Energy Log**.



5-1-2 History

The History page includes Event Log, Energy Log, Energy Compare, Data Log and Configuration these five selections. Please see below for more descriptions.

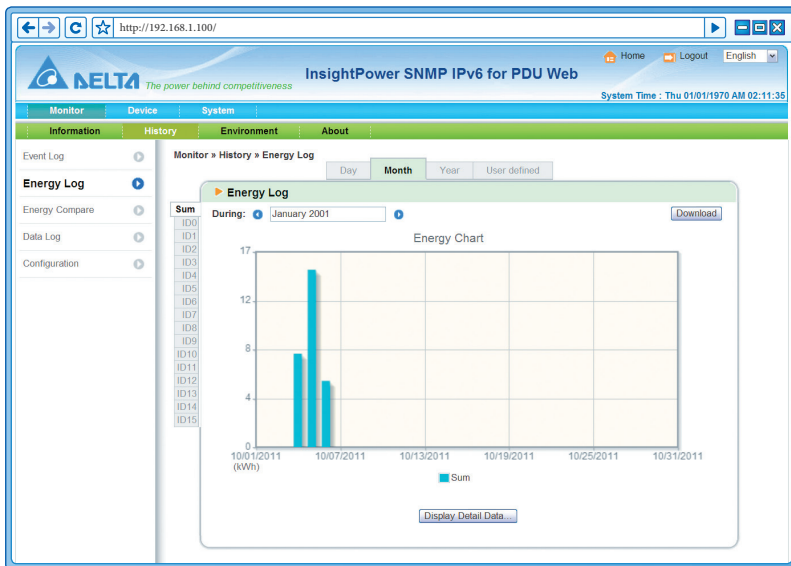
Event Log



Go to **Monitor** → **History** → **Event Log** to look up selected PDUs' events. The existing ones are overwritten when the maximum number of entries (1,000) is reached. You can download the entire event log archive recorded during an as-signed period of time on your computer.

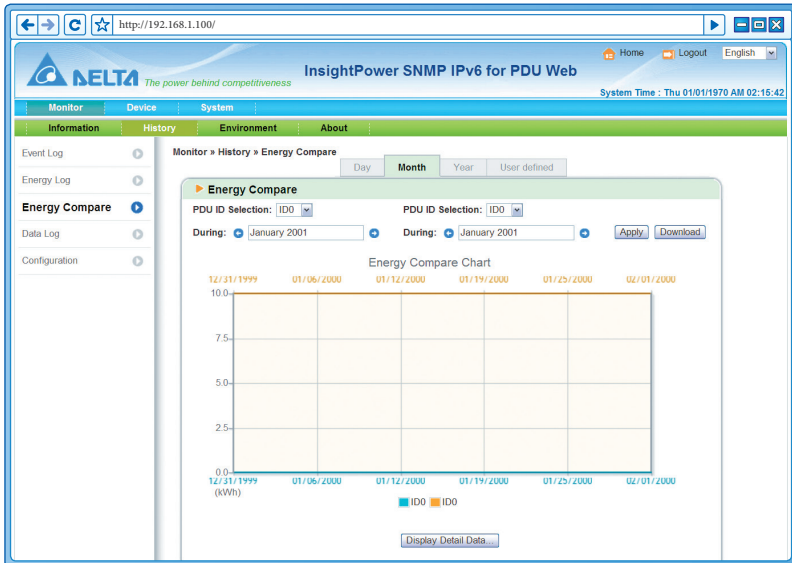
- **PDU ID** : PDU ID No.
- **Date** : The date when the event occurred.
- **Time** : The time when the event occurred.
- **Level** : The event level of the event that occurred.
- **Event Log** : The description of the event that occurred.
- **Download All** : The SNMP IPv6 sends a request to all PDUs, collects the event logs saved in the PDUs, and replies to the user through network. Please note that this option only appears when the PDUs support this function, and the event logs saved in the PDUs may be different from the event logs saved in the SNMP IPv6.

Energy Log



Go to **Monitor** → **History** → **Energy Log** to look up selected PDUs' energy log. You can set up a specific time, click **Display Detail Data** button to view detailed records and click **Download** button to download the energy log. The existing records are overwritten when the maximum number of entries (8,000) is reached.

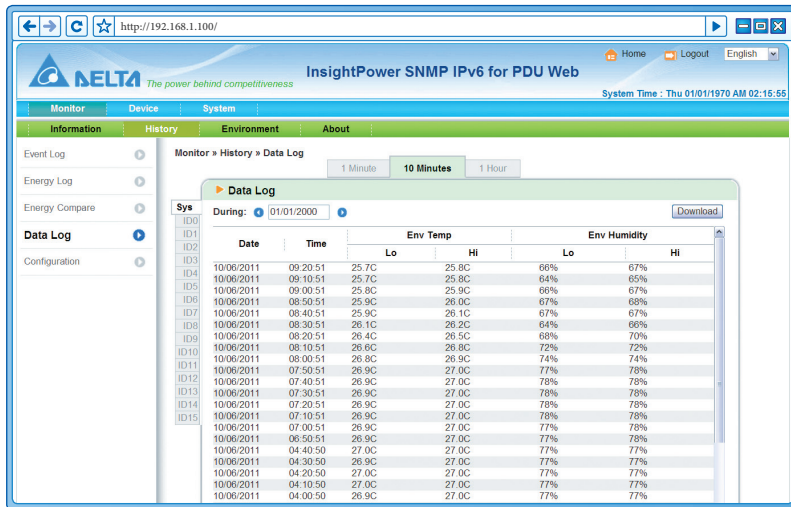
Energy Compare



Go to **Monitor** → **History** → **Energy Compare** to see any two selected PDUs' energy compare table. Choose any two PDUs' ID No., select a specific time, click **Apply** button, and an energy compare table appears. You can click **Display Detail Data** button to view detailed comparison records and click **Download** button to download the comparison logs. The existing records are overwritten when the maximum number of entries (8,000) is reached.

● Data Log

Go to **Monitor** → **History** → **Data Log** to see a specific PDU's data log recorded in a specific time. The data log includes information about the selected PDU's total output frequency, total output power, each branch's output voltage, output current and output power. Choose a PDU's ID No., select a specific time, and the data log appears. You can click **Download** button to download the data log. The existing records are overwritten when the maximum number of entries (8,000) is reached.



● Configuration

Go to **Monitor** → **History** → **Configuration** to clear the event log, energy log, energy compare log, and data log. You can also assign the Save Data Interval and Save Energy Interval.

- **Clear History Data** : Empty the data log only.
- **Clear Event Log** : Empty the event log only.
- **Clear Energy Data** : Empty the energy log and energy compare log.
- **Save Data Interval** : The time interval after which a data entry is recorded.
- **Save Energy Interval** : The time interval after which an energy/ energy compare entry is recorded.



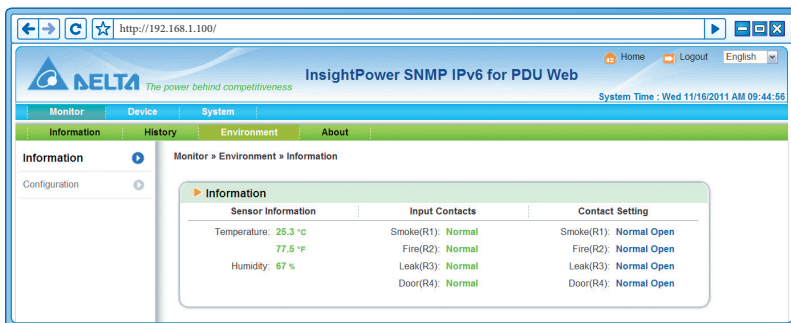
5-1-3 Environment

Only when an EnviroProbe is used can the Environment page show up. Please note that the SNMP IPv6's DIP switch 1 should be set to the **ON** position and DIP switch 2 should be set to the **OFF** position when you use an EnviroProbe.

The Environment page includes Information and Configuration these two items. You can monitor and set up your EnviroProbe via this Environment page. For EnviroProbe information, please refer to the Installation Guide included in the package of the EnviroProbe.

Information

Go to **Monitor** → **Environment** → **Information** to see your EnviroProbe's Sensor Information, Input Contacts and Contact Setting.



● Configuration

Go to **Monitor** → **Environment** → **Configuration** to configure your EnviroProbe's Warning Threshold, Alarm Threshold, Title and Type. Please see the table below for detailed information.

The screenshot shows the 'Configuration' page for the 'InsightPower SNMP IPv6 for PDU Web' interface. The page has a navigation bar with 'Monitor', 'Device', and 'System' tabs. Under 'Monitor', there are sub-tabs for 'Information', 'History', 'Environment', and 'About'. The 'Environment' tab is selected, and the 'Configuration' sub-tab is active. The page displays two main configuration sections: 'Configuration' and 'Power Configuration'.

Sensor	Warning Threshold	Alarm Threshold
Temperature	35 °C	40 °C
Humidity	80 %	90 %

Input	Title	Type
Contact 1	Smoke	Normal Open
Contact2	Fire	Normal Open
Contact3	Leak	Normal Open
Contact4	Door	Normal Open

5-1-4 About

Under About category, there is only one item called Information. You can obtain your SNMP IPv6's other information via this channel.

● Information

Go to **Monitor** → **About** → **Information** to see the version of your InsightPower SNMP IPv6 for PDU and other information about OpenSSL toolkit and licenses.

The screenshot shows the 'Information' page for the 'InsightPower SNMP IPv6 for PDU Web' interface. The page has a navigation bar with 'Monitor', 'Device', and 'System' tabs. Under 'Monitor', there are sub-tabs for 'Information', 'History', 'Environment', and 'About'. The 'About' tab is selected, and the 'Information' sub-tab is active. The page displays the following information:

InsightPower SNMP IPv6 for PDU
Version : 01.12.02

InsightPower SNMP IPv6 utilize the "OpenSSL toolkit" functionality provided by "The Open SSL Project" at <http://www.openssl.org/>. SDI acknowledges all patent rights therein."

The OpenSSL toolkit is licensed under a dual-license (the OpenSSL license and the original SSLeay license).
[See the license text.](#)

5-2 Device

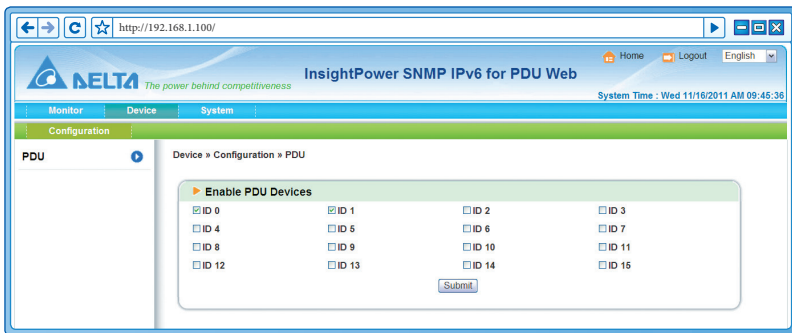
Under the Device category, there is only one item called Configuration. You can set up which PDUs that you wish the SNMP IPv6 to monitor. Please see below for more descriptions.

5-2-1 Configuration

The Configuration page only includes one selection, **PDU**. The default setting of the SNMP IPv6 only enables to monitor the PDU whose ID is set as 0. To monitor other PDU or monitor multiple PDU devices, you can use this selection to reset the default setting.

PDU

Go to **Device** → **Configuration** → **PDU** to select PDU ID No. After clicking the **Submit** button, the SNMP IPv6 will enable to monitor the selected PDU devices.



5-3 System

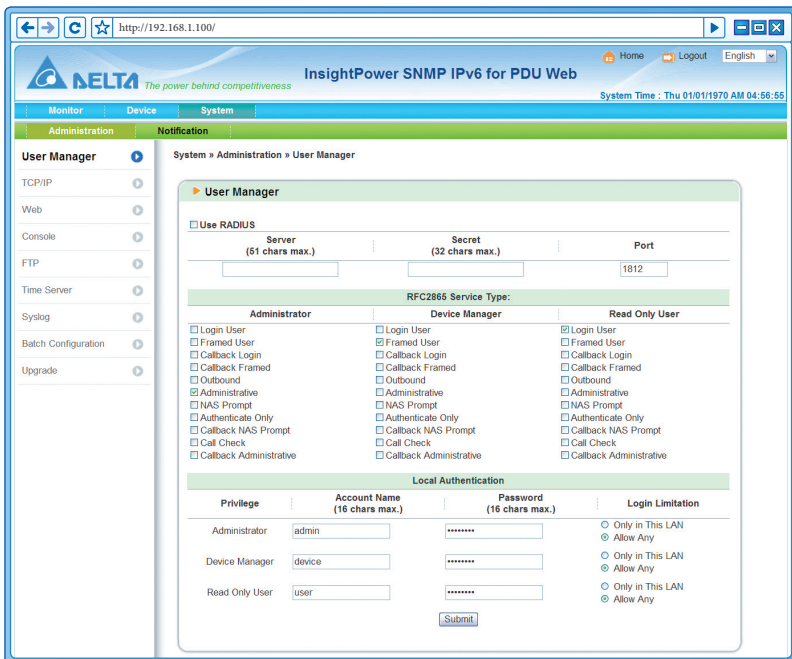
Only Administrator can see the System page. Under the System category, there are Administration and Notification these two items. You can use them to change or look up the system's relevant settings or records. Please see below for more descriptions.

5-3-1 Administration

The Administration page includes User Manager, TCP/ IP, Web, Console, FTP, Time Server, Syslog, Batch Configuration, and Upgrade these nine selections.

User Manager

The SNMP IPv6 supports RADIUS. Check the **Use RADIUS** box, key in required information including Server, Secret and Port (default: 1812) and click **Submit** to enable RADIUS. You can define service types for Administrator, Device Manager and Read Only User. If RADIUS is disabled, you can still manage the Account Name, Password and Login Limitation for Local Authentication.



The screenshot shows the Delta InsightPower SNMP IPv6 for PDU Web interface. The browser address bar shows <http://192.168.1.100/>. The page title is "InsightPower SNMP IPv6 for PDU Web". The system time is "Thu 01/01/1970 AM 04:56:56". The navigation menu includes Monitor, Device, and System. Under System, there are Administration and Notification tabs. The Administration tab is selected, and the User Manager page is displayed. The User Manager page has a left sidebar with links to TCP/IP, Web, Console, FTP, Time Server, Syslog, Batch Configuration, and Upgrade. The main content area is titled "User Manager" and contains the following sections:

Use RADIUS

☐ Use RADIUS

Server (51 chars max.) Secret (32 chars max.) Port (1812)

RFC2865 Service Type:

Administrator	Device Manager	Read Only User
☐ Login User	☐ Login User	☒ Login User
☐ Framed User	☒ Framed User	☐ Framed User
☐ Callback Login	☐ Callback Login	☐ Callback Login
☐ Callback Framed	☐ Callback Framed	☐ Callback Framed
☐ Outbound	☐ Outbound	☐ Outbound
☒ Administrative	☐ Administrative	☐ Administrative
☐ NAS Prompt	☐ NAS Prompt	☐ NAS Prompt
☐ Authenticate Only	☐ Authenticate Only	☐ Authenticate Only
☐ Callback NAS Prompt	☐ Callback NAS Prompt	☐ Callback NAS Prompt
☐ Call Check	☐ Call Check	☐ Call Check
☐ Callback Administrative	☐ Callback Administrative	☐ Callback Administrative

Local Authentication

Privilege	Account Name (16 chars max.)	Password (16 chars max.)	Login Limitation
Administrator	admin	*****	☐ Only in This LAN ☒ Allow Any
Device Manager	device	*****	☐ Only in This LAN ☒ Allow Any
Read Only User	user	*****	☐ Only in This LAN ☒ Allow Any

TCP/ IP

This allows Administrator to configure local network parameters for the SNMP IPv6.

The screenshot shows the web interface for configuring the PDU's network settings. The browser address bar shows <http://192.168.1.100/>. The page title is "InsightPower SNMP IPv6 for PDU Web". The navigation menu includes Monitor, Device, and System. Under the System menu, there are links for Administration, Notification, and TCP/IP. The left sidebar lists various configuration options: User Manager, TCP/IP (selected), Web, Console, FTP, Time Server, Syslog, Batch Configuration, and Upgrade. The main content area is titled "System » Administration » TCP/IP". It contains two sections: "TCP/IP Settings for IPv4" and "TCP/IP Settings for IPv6". The IPv4 section has fields for DHCP Client (radio buttons for Enable and Disable), IP Address (10.0.10.180), Subnet Mask (255.255.255.0), Gateway IP (10.0.10.254), DNS IP (10.0.10.254), and Search Domain (deltaww.com). The IPv6 section has fields for DHCP Client (radio buttons for Enable and Disable), IP Address (fe80::230:abff:fe26:7d), Prefix Length (64), Gateway V6IP (fe80::226:5aff:fecc:fd), and DNS V6IP. To the right of these settings is a "System" section with fields for Host Name (INSIGHTPOWER), System Contact, and System Location. Below these is a "Link" section with radio buttons for Auto-Negotiation (checked), Speed (100M and 10M), and Duplex (Full and Half). A note states: "Change the parameters in the Link group will cause the SNMP card to restart." A "Submit" button is at the bottom of the Link section.

• TCP/ IP Settings for IPv4

- 1) **DHCP Client:** Enable/ disable DHCP. If enabled, DHCP server automatically assigns an IP address to the SNMP IPv6.
- 2) **IP Address:** The IP address in dotted format.
- 3) **Subnet Mask:** The Subnet Mask for your network.
- 4) **Gateway IP:** The IP address for network gateway in dotted format.
- 5) **DNS IP:** The IP address Domain Name Server in dotted format.
- 6) **Search Domain:** If the Host Name you provided cannot be found, the system appends the search domain to your Host Name.

• TCP/ IP Settings for IPv6

- 1) **DHCP Client:** Enable/ disable DHCP. If enabled, DHCP server automatically assigns an IP address to the SNMP IPv6.
- 2) **IP Address:** The IPv6 address.

- 3) **Prefix Length:** The prefix length for the IPv6 address.
- 4) **Gateway V6IP:** The IP address for the IPv6 network gateway.
- 5) **DNS V6IP:** The IP address for the IPv6 domain name server.

- **System**

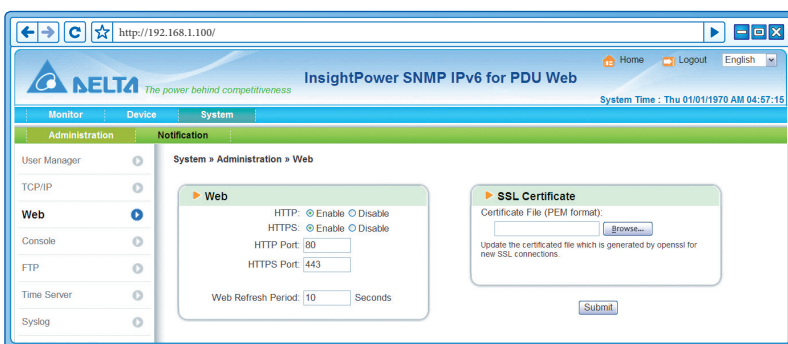
- 1) **Host Name:** The SNMP IPv6 Host Name on the network.
- 2) **System Contact:** System contact information.
- 3) **System Location:** System location information.

- **Link**

- 1) **Auto-Negotiation:** Enable/ Disable automatic transfer rate (10/ 100M bps) negotiation.
- 2) **Speed:** If the Auto-Negotiation is disabled, you can specify the transfer rate.
- 3) **Duplex:** If the Auto-Negotiation is disabled, you can specify the duplex mode.

Web

This allows Administrator to enable or disable HTTP/ HTTPS communication protocols.



- **Web**

- 1) **HTTP:** Enable/ disable HTTP connection.
- 2) **HTTPS:** Enable/ disable HTTPS connection.

- 3) **HTTP Port:** Assign an HTTP port number (default: 80).
- 4) **HTTPS Port:** Assign an HTTPS port number (default: 443).
- 5) **Web Refresh Period:** Web refresh interval.

• SSL Certificate

- 1) To ensure connection security between the SNMP IPv6 and the connecting workstation, SSL certificate can be used to encrypt and secure the integrity of transmitting data.
- 2) **Certificate File:** This allows you to replace your own SSL certificate file. The SNMP IPv6 supports PEM format which is generated by OpenSSL. Click **Browse** to upload a certificate file.



NOTE

For more information about generating a private SSL certificate file, please refer to **Chapter 7: Troubleshooting Q12**, or visit <http://www.openssl.org/>.

● Console

This item allows the Administrator to enable or disable Telnet/ SSH communication protocols.

The screenshot shows the web interface for the InsightPower SNMP IPv6 for PDU Web. The browser address bar shows <http://192.168.1.100/>. The page has a blue header with the DELTA logo and the text "The power behind competitiveness". The main title is "InsightPower SNMP IPv6 for PDU Web". There are links for "Home", "Logout", and "English". The system time is "Thu 01/01/1970 AM 04:57:26".

The interface has a navigation menu on the left with the following items: Monitor, Device, System, Administration, Notification, User Manager, TCP/IP, Web, Console (selected), FTP, Time Server, Syslog, Batch Configuration, and Upgrade.

The main content area is titled "System » Administration » Console". It contains three sections:

- Console**:
 - Telnet: ☒ Enable ☐ Disable
 - SSH/SFTP: ☒ Enable ☐ Disable
 - Telnet Port:
 - SSH Port:
- Host Key**:
 - DSA Key:
 - RSA Key:
 - Update the certificated files which are generated by openssl for new SSH connections.
- Authentication Public Key**:
 - Public Key:
 - Provide the public key for authentication. The public key can be generated by openssl or putty.

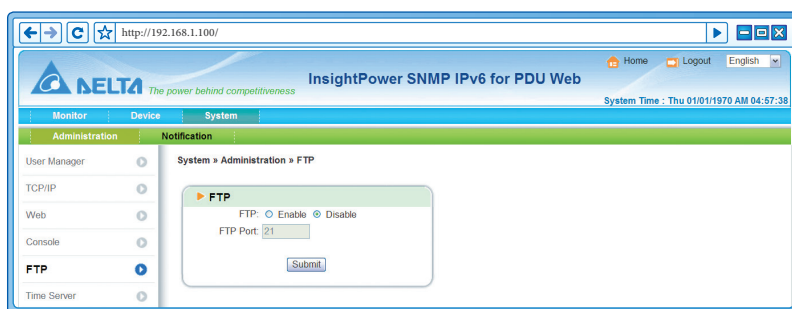
At the bottom right of the main content area is a .

- **Telnet** : Enable/ disable Telnet connection.
- **SSH/ SFTP** : Enable/ disable SSH/ SFTP connection.
- **Telnet Port** : Assign a Telnet port number (default: 23).
- **SSH Port** : Assign an SSH protocol port number (default: 22).
- **Host Key/ Authentication Public Key** :

This allows you to replace your own SSH keys. The SNMP IPv6 supports key files generated by OpenSSH, including DSA, RSA, and Authentication Public Keys. How to generate DSA, RSA, and Authentication Public keys for SSH, please refer to **Chapter 7 : Troubleshooting Q13**. You can use this page or SFTP protocol to upload key files. For detailed information, please refer to **Chapter 7 : Troubleshooting Q14**.

FTP

This allows Administrator to enable or disable FTP communication protocols.



- **FTP** : Enable/ disable FTP connection.
- **FTP Port** : Assign an FTP port number (default: 21).

Time Server

You can manually set the time and date, or allow automatic time synchronization with SNTP servers. Please note that if the SNTP server is not responsive, the event log, energy log, energy compare log and data log will not register even when SNTP is enabled.



Simple Network Time Server

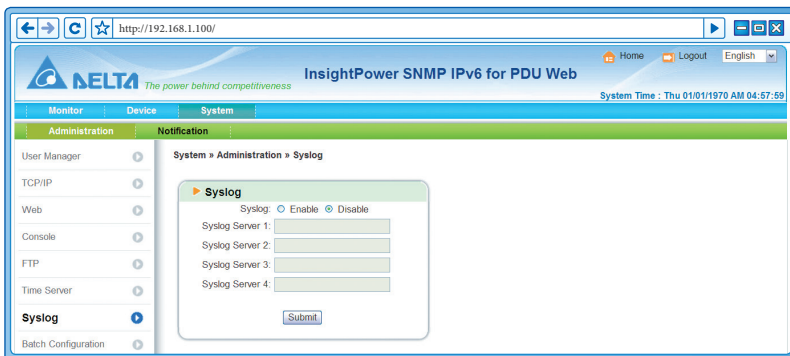
- 1) **Time Zone:** From the dropdown menu, select the time zone for the location where the SNMP IPv6 is located.
- 2) **Primary/ Secondary Time Server:** Two time servers can be added. Every 60 minutes, the SNMP IPv6 synchronizes with the first responding server.
- 3) **Enable Daylight Saving:** Check to enable daylight saving time. During this period, the SNMP IPv6 adjusts time forward one hour.

Manual

If a time server is not accessible, you can still manually set time and date. Please note that every time you restart the SNMP IPv6's network module, time and date is reinstated to previous assigned settings.

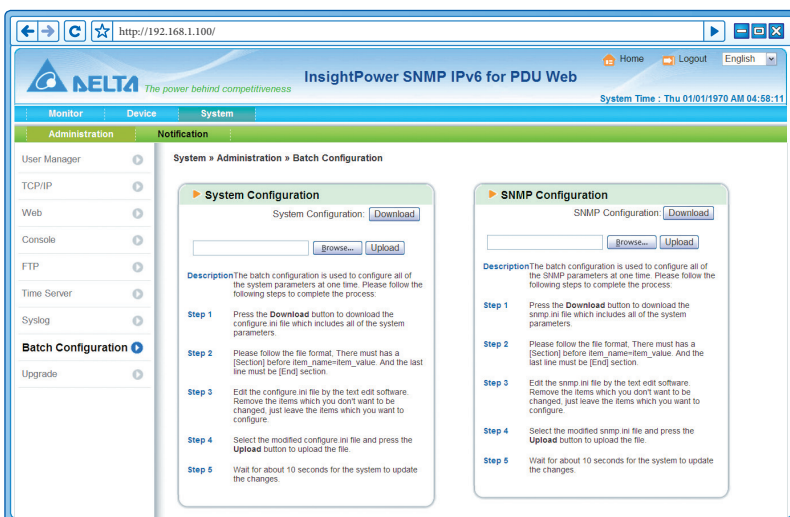
Syslog

Syslog is used to store the event log on remote Syslog servers. This will not affect the local event log. After enabling the Syslog, please set up a server IP address. You can set up at maximum four Syslog servers at a time.



Batch Configuration

The SNMP IPv6 provides batch configuration to allow quick and effortless setup on multiple SNMP IPv6 devices. You can duplicate settings by exporting configuration files from the SNMP IPv6 that you have successfully configured, and import the configuration files on other devices.



- **System Configuration**

The **System Configuration** includes settings saved in the **Device** and **System** tabs. To download a configuration file, simply click **Download**. To upload a configuration file, click **Browse**, select the file you wish to upload, and click **Upload**.

 NOTE

If the IP address is static and you wish to copy settings to other devices on the same LAN, you must manually remove the following line **IP=xxx.xxx.xxx.xxx** under the [System] section from the exported configuration file. You can open the configuration file with text editors such as Notepad and WordPad. To modify/ assign IP address for the SNMP IPv6, please see **Chapter 4: System Configurations**.

- **SNMP Configuration**

The **SNMP Configuration** includes settings saved in the **Notification** tab. To download a configuration file, simply click **Download**. To upload a configuration file, click **Browse**, select the file you wish to upload, and click **Upload**.

 NOTE

If you need to modify the command lines, please do not delete the unmodified ones. They should be left intact to assure the integrity of the configuration file.

Upgrade

The Upgrade page shows the SNMP IPv6's current firmware version. The Administrator can use this page to update the SNMP IPv6's firmware. Click **Browse**, select the file you wish to upload, and click **Upload**. The upgrade process should take about one minute.

The screenshot shows a web browser window with the URL <https://192.168.1.100/>. The page title is "InsightPower SNMP IPv6 for PDU Web". The navigation bar includes "Monitor", "Device", and "System". The "System" tab is active, showing a sidebar with "Administration" and "Notification" sections. The "Administration" section is expanded, showing a list of configuration options: User Manager, TCP/IP, Web, Console, FTP, Time Server, Syslog, Batch Configuration, and Upgrade. The "Upgrade" option is selected, and the main content area displays the "Network Card Firmware" upgrade page. The page shows the current firmware version as "01.12.02". There is a "Firmware File:" label followed by a text input field and a "Browse..." button. Below the input field is an "Upload" button. A "Description" section explains that this feature is used to update the network card firmware and provides two steps: Step 1: Select the network card firmware file and press the Upload button to upload the file to the network card. Step 2: Wait about 1 minute for the network card to reprogram the flash and reboot again.

System Time : Thu 01/01/1970 AM 04:58:23

System » Administration » Upgrade

Network Card Firmware

Current Ver.: 01.12.02

Firmware File: [Browse...](#)

[Upload](#)

Description This feature is used to update the network card firmware. Please follow the following steps to complete the process:

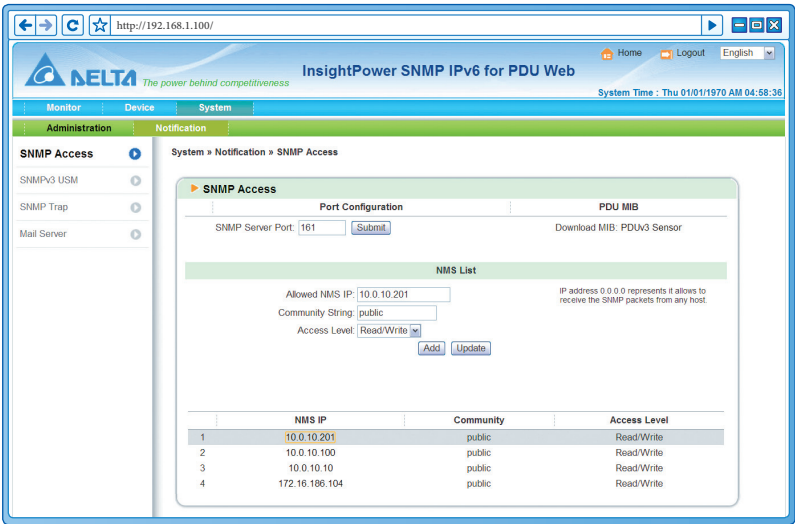
Step 1 Select the network card firmware file and press the **Upload** button to upload the file to the network card.

Step 2 Wait about 1 minute for the network card to reprogram the flash and reboot again.

5-3-2 Notification

The Notification page includes SNMP Access, SNMPv3 USM, SNMP Trap, and Mail Server these four items.

SNMP Access



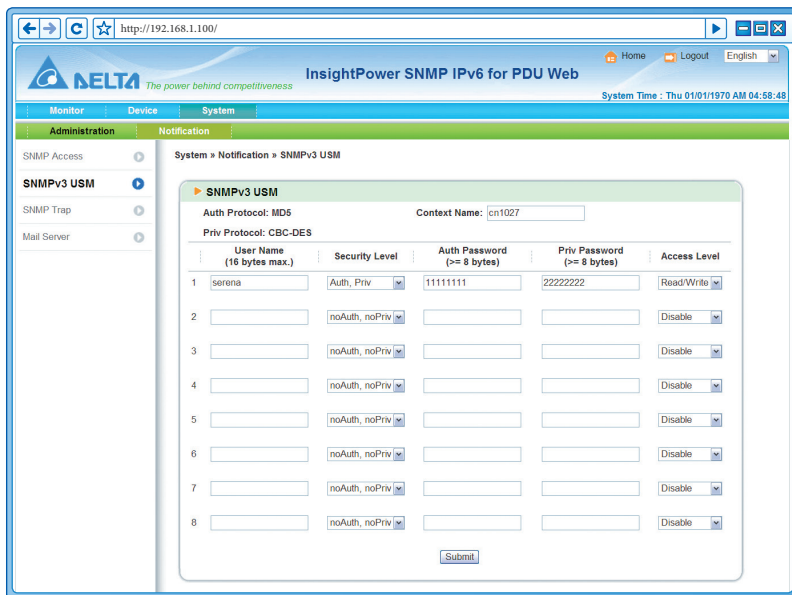
The SNMP IPv6 supports SNMP IPv6 protocol and SNMP NMS (Network Management System), which are commonly used to monitor network devices for conditions that call for administrative attention. To prevent unauthorized access, you can specify the NMS IP addresses that are allowed to access, their community strings and access levels. The maximum number of IP entries is 256.

NOTE

If IP address **0.0.0.0** is enlisted, the NMS IP access restriction is ignored. The SNMP IPv6 checks the community string to identify the access level and permission according to your setting.

SNMPv3 USM

SNMPv3 offers features such as the encryption of packets and authentication to improve security. The SNMPv3 USM (User Session Management) allows you to assign eight User Names whose access is granted via SNMPv3 protocol. You can also define their respective Security Levels, Auth Passwords, Priv Passwords and Access Levels.



The screenshot shows the 'InsightPower SNMP IPv6 for PDU Web' interface. The left sidebar contains navigation links: Monitor, Device, System, Administration, and Notification. The main content area is titled 'System » Notification » SNMPv3 USM'. It displays the 'SNMPv3 USM' configuration page with the following details:

- Auth Protocol: MD5
- Priv Protocol: CBC-DES
- Context Name: cn1027

	User Name (16 bytes max.)	Security Level	Auth Password (>= 8 bytes)	Priv Password (>= 8 bytes)	Access Level
1	serena	Auth, Priv	11111111	22222222	Read/Write
2		noAuth, noPriv			Disable
3		noAuth, noPriv			Disable
4		noAuth, noPriv			Disable
5		noAuth, noPriv			Disable
6		noAuth, noPriv			Disable
7		noAuth, noPriv			Disable
8		noAuth, noPriv			Disable

A 'Submit' button is located at the bottom of the configuration area.

SNMP Trap

SNMP Trap alerts users to event occurrences in your monitored environment. To enable SNMP Trap, you must add Target IP addresses to the Target IP list. Specify the Community String, Trap Type, MIB, SNMPv3 User Name, UDP port, and Event Level, and click **Add**. If you wish to update or delete a Target IP address, specify the IP address in the Target IP list, and click **Update** or **Delete**.

The screenshot shows the web interface for configuring SNMP traps. The left sidebar contains navigation links: Monitor, Device, System, Administration, Notification, and Mail Server. The main content area is titled 'System » Notification » SNMP Trap'. It features a form for adding or modifying trap targets. The form includes fields for Target IP (172.16.186.253), Community String (public), Trap Type (SNMPv2c), SNMPv3 User Name (serena), Event Level (Information), and UDP Port (162). Below the form is a table listing the current Target IP list.

	Target IP	Community	Port	Type	Event Level	SNMPv3 User
1	172.16.186.253	public	162	v2c	Information	serena
2	172.16.186.104	public	162	v2c	Information	serena



The SNMP IPv6 supports SNMPv1, SNMPv2c and SNMPv3 traps to satisfy most of customers' environments. If you select the SNMPv3 trap, please specify an SNMPv3 USM User Name.

You can use Event Level to determine what event notifications should be sent to which Target IP Address. Three event levels are listed as follows:

- **Information:** All event notifications are sent to the target address.
- **Warning:** Both Warning and Alarm event notifications are sent to the target address.
- **Alarm:** Only Alarm event notifications are sent to the target address.

You can go to **System** → **Notification** → **SNMP Trap** → **Event Level** to change the event level.

Mail Server

You can set up an SMTP Server and specify a list of E-mail recipients who will receive notifications when events occur. The maximum number of recipients is 256.

The screenshot shows the Delta InsightPower SNMP IPv6 for PDU Web interface. The browser address bar shows <http://192.168.1.100/>. The page title is "InsightPower SNMP IPv6 for PDU Web". The navigation menu includes Monitor, Device, System, Administration, and Notification. The left sidebar lists SNMP Access, SNMPv3 USM, SNMP Trap, and Mail Server (selected). The main content area is titled "System » Notification » Mail Server". It contains a "Mail Server Configuration" section with fields for SMTP Server Name or IP (51 bytes max.), Account (32 bytes max.), and Password (16 bytes max.), with a Submit button. Below this is a "Mail List" section with a Receiver field (name@company.com), an Event Level dropdown (None), and Add and Test e-mail buttons. At the bottom, a table lists the configured recipients.

	Receiver	Event Level
1	name@company.com	None



NOTE

If a DNS server is not available in the network, you need to manually assign an SMTP server address to enable the E-mail notification system.

- **SMTP Server Name or IP**

If a Host Name is entered, a **DNS IP** should be added in **TCP/ IP**. Please see **5-3-1 Administration – TCP/ IP**.

- **Account**

The mail server login account.

- **Password**

The mail server login password.

- **Receiver**

The recipients' E-mail addresses.

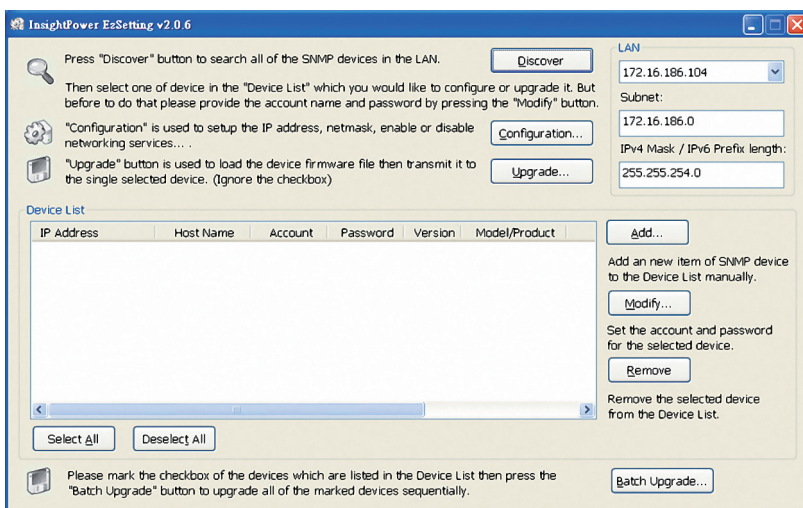
- **Event Level**

Select the Event Level that when triggered, an E-mail notification is sent to the corresponding recipient.

- 1) **Information:** All event notifications are sent to the target address.
- 2) **Warning:** Warning and Alarm event notifications are sent to the target address.
- 3) **Alarm:** Only Alarm event notifications are to the target address.

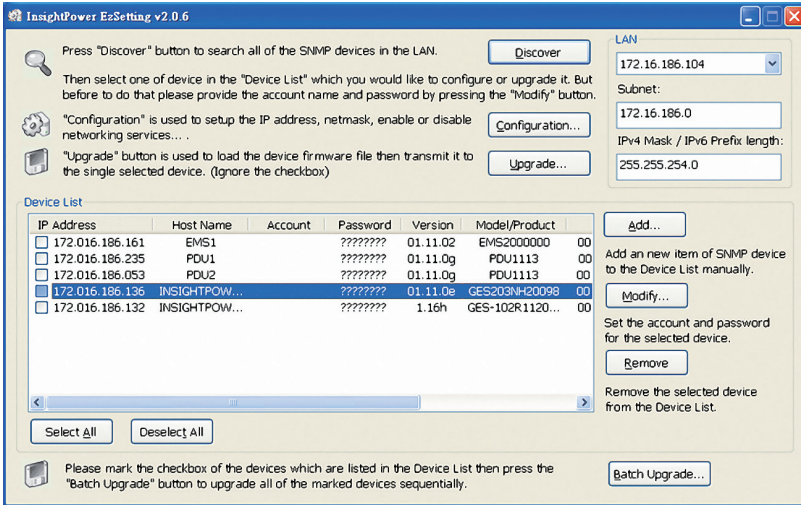
Chapter 6 : SNMP Device Firmware Upgrade

With the provided program EzSetting, you can effortlessly perform a firmware upgrade on your SNMP devices via LAN. Please refer to the following instructions.

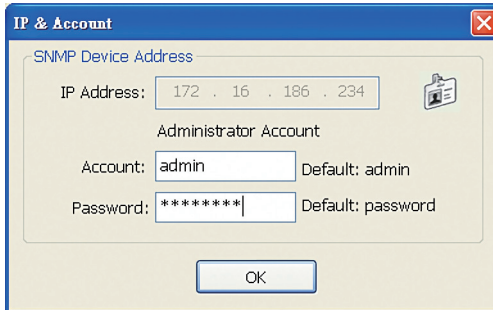


Step 1 The subnet mask allows you to define the device discovery range in the specified subnets. Make sure the SNMP device you wish to upgrade is in the subnet that is specified. If it is not, please modify the subnet and subnet mask.

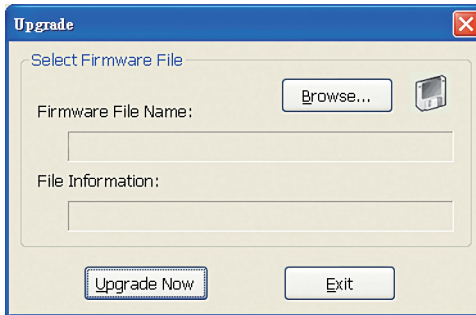
Step 2 Click **Discover**. A list of SNMP devices is shown.



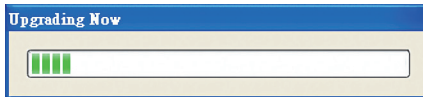
Step 3 Select a device from the Device List, click **Modify**, and key in Administrator account and password.



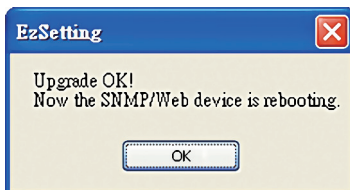
- Step 4** Click **Upgrade**. The upgrade dialog box pops up. Click **Browse** to select a valid firmware binary file. Verify the firmware version shown under File Information, and then click **Upgrade Now** to continue.



- Step 5** The upgrade process should take about 20 seconds.



- Step 6** When the upgrade is completed, the following dialog box appears. It takes about 1 minute for the device to reboot.



Chapter 7 : Troubleshooting

Q1. How to set up an SNTP server on my workstation for the SNMP IPv6 to synchronize?

To enable SNTP services in Windows XP, go to **Start → Control Panel → Add/ Remove Programs → Add/ Remove Windows Components → Networking Services** → check **Simple TCP/ IP Services** → **OK**. To enable time synchronization, you need to set SNTP time server addresses in **Time Server**. Please refer to **Chapter 4: System Configurations**.

Q2. How to make sure the linking between the SNMP IPv6's and the PDU is established?

If the linking between the SNMP IPv6 and the PDU is correctly established, the yellow LED indicator should flash rapidly. If not, confirm that the device ID setting on the SNMP IPv6 and the PDU is consistent.

```
C:\>ping 172.16.186.230

Pinging 172.16.186.230 with 32 bytes of data:
Reply from 172.16.186.230: bytes=32 time=2ms TTL=64
Reply from 172.16.186.230: bytes=32 time=2ms TTL=64
Reply from 172.16.186.230: bytes=32 time=2ms TTL=64
Reply from 172.16.186.230: bytes=32 time=4ms TTL=64

Ping statistics for 172.16.186.230:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 4ms, Average = 2ms

C:\>
```

Q3. I can access the InsightPower SNMP IPv6 for PDU Web, but I cannot login in.

Please check the IP addresses of the SNMP IPv6 and the workstation on which you are trying to log in. By default, they must be within the same LAN so you can connect via the web interface. You can enable external connections to solve this issue. To do this, launch EzSetting and change User Limitation to Allow Any, as shown below.

Configuration

System Identification

*Host Name(NetBIOS):

System Contactor:

System Location:

Date/Time

☒ *SNTP ☐ Manual

Time Zone:

*1st Time Server Name or IP:

2nd Time Server Name or IP:

Set Current Time: Date (MM/DD/YYYY)

Time (hh:mm:ss)

User Limitation

Administrator: ☒ In The LAN ☒ Allow Any

Device Manager: ☒ In The LAN ☒ Allow Any

Read Only User: ☒ In The LAN ☒ Allow Any

It is recommended to provide a static "IP Address" and disable the "BOOTP/DHCP Client" option.

If it is the first time to configure your InsightPower device, please assign a unique name in the "Host Name" field and given a "Time Server" for the device through "SNTP" protocol if possible.

IPv4

BOOTP/DHCP Client: ☒ Enable ☐ *Disable

*IP Address:

*Subnet Mask:

Gateway IP:

DNS IP:

IPv6

DHCPv6 Client: ☒ Enable ☐ *Disable

*IP Address:

*Prefix Length:

Gateway IP:

DNS IP:

System Configuration

HTTP Server: ☒ Enable ☐ Disable

Telnet Server: ☒ Enable ☐ Disable

HTTP Server Port:

Telnet Server Port:

Q4. Unable to connect to the SNMP IPv6 via its Host Name?

If you just assign a new static IP address to the SNMP IPv6, you may need to refresh the NetBIOS table so that it corresponds with the new setting. Although Windows updates its NetBIOS table periodically, you can still manually force it to refresh by entering the following command **nbstat -R** in DOS prompt mode. After that, you can now connect to the SNMP IPv6 by its Host Name. Please also ensure that the Host Name assigned to the SNMP IPv6 does not exceed 16 bytes.

Q5. How to check my workstation's IP address?

For Windows, please enter **ipconfig /all** in DOS prompt mode. For UNIX, please enter **ifconfig** in shell. You should be able to check your IP and MAC (Physical Address) now.

```
Physical Address. . . . . : 00-23-4D-A2-3A-2C
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . : fe80::ad55:5b9b:74c6:e5fc%12 (Preferred)
IPv4 Address. . . . . : 172.16.186.97 (Preferred)
Subnet Mask . . . . . : 255.255.254.0

C:\>
```

Q6. Unable to ping the SNMP IPv6 from my workstation?

If the SNMP IPv6 is non-responsive, check the following:

- 1) If the green LED indicator on the SNMP IPv6 is OFF, check if the network cable is correctly connected from the SNMP IPv6 to the router or hub.
- 2) If the green LED indicator is ON, the current IP address could be unreachable. Manually assign a valid IP address to the SNMP IPv6.
- 3) If the green LED indicator flashes and (1) your network configuration includes a DHCP server, make sure the DHCP service is working properly; (2) Otherwise, make sure the assigned IP is not already taken on the network. Please note that if the current configuration is not useable, the SNMP IPv6 will reset to default IP settings (IPv4 address: 192.168.1.100/ net mask: 255.255.255.0/ gateway: 192.168.1.254).
- 4) If the problem persists, use a network cable to cross link your SNMP IPv6 and the workstation. Ping the SNMP IPv6's default or static IP address, according to your configurations. If a ping response is successfully received, indicating that the SNMP IPv6 is working properly, check your network equipment. If not, contact your local dealer or service personnel for assistance.

Q7. Unable to perform an SNMP Get command?

Refer to **5-3-2 Notification** to check SNMP settings. Make sure that the workstation's IP address is added to the NMS IP list with Read or Read/ Write access. The community string on the workstation and the SNMP IPv6 must match.

Q8. Unable to perform an SNMP Set command?

Refer to **5-3-2 Notification** to check SNMP settings. Make sure that the workstation's IP address is added to the NMS IP list, with Read/ Write permission. The community string on the PC and the SNMP IPv6 must match.

Q9. Unable to receive SNMP trap?

Refer to **5-3-2 Notification** to check SNMP Trap settings. Make sure that the workstation's IP address is added to the Target IP list.

Q10. Forgot Administrator's account and password?

You can reset administrator's account and password via text mode. Refer to **4-4 Configuring through COM Port** to establish a COM port connection with the SNMP IPv6. When the login information is prompted, key in **rstadmin** within 30 seconds and press **Enter**. The Administrator account and password are now reset to default (admin/ password).

Q11. How to enable IPv6 in Windows XP?

If you are running Windows XP, please enable IPv6 first (click **START** → **RUN**, and enter **ipv6 install**). The SNMP IPv6 supports IPv6 with no additional configurations required. However, please note that IPv6 is automatically disabled if an identical LLA (Local-link Address) already exists on the LAN. If the SNMP IPv6 obtains both IPv4 and IPv6 records from DNS resolution, the IPv4 is used as the primary IP address for the given Host Name.

To learn more information regarding IPv6 compatibility, please visit IETF (<http://tools.ietf.org/html>), or IPv6 Ready Logo Program (<http://www.ipv6ready.org>).

Q12. How to generate a private SSL certificate file (in PEM format) for HTTPs connection?

To ensure connection security between the SNMP IPv6 and your workstation, you can create your own SSL certificate file. Please download and install OpenSSL Toolkit from <http://www.openssl.org>. Launch Shell or DOS prompt mode and enter the following command to create your own certificate file:

```
openssl req -x509 -nodes -days 3650 -newkey  
rsa:1024 -keyout cert.pem -out cert.pem
```

- 1) Answer the prompted questions. Proceed with the given directions. Once it is completed, a file named cert.pem is created in the current working directory.
- 2) Upload cert.pem to the InsightPower SNMP IPv6 for PDU Web. Please refer to **5-3-1 Administration – Web**.

Q13. How to generate DSA, RSA and Public keys for SSH?

For Linux:

- 1) Please download and install OpenSSH from <http://www.openssh.org>.
- 2) Launch Shell and enter the following commands to create your own keys (please ignore it when prompted to provide passphrase):

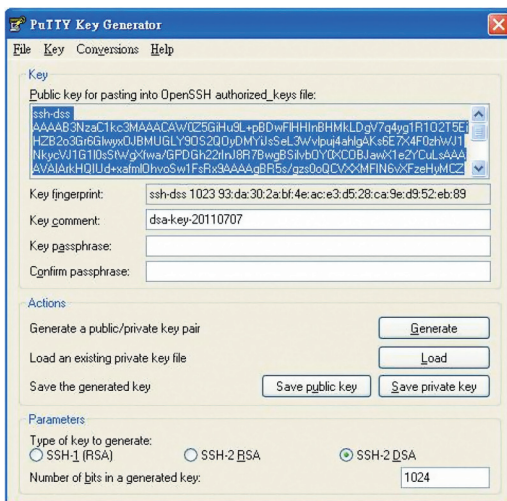
```
DSA Key:ssh-keygen -t dsa
```

```
RSA Key:ssh-keygen -t rsa
```

- 3) Upload DSA and RSA keys to the InsightPower SNMP IPv6 for PDU Web. Please refer to **5-3-1 Administration – Console** for more information.

For Windows:

- 1) Please download and install PuTTY from <http://www.putty.org>.
- 2) Run puttygen.exe from the installed directory.
- 3) Select **SSH-2 RSA** from the Parameters area and click **Key → Generate key pair** to generate a RSA key.
- 4) Click **Conversions → Export OpenSSH Key** and assign a filename to the RSA key. Please ignore it when prompted to provide key passphrase.
- 5) Select **SSH-2 DSA** from the Parameters, click **Key → Generate key pair** to generate a DSA key.
- 6) Click **Conversions → Export OpenSSH Key** and assign a filename to the DSA key. Please ignore it when prompted to provide key passphrase.
- 7) Copy the generated key from the text box, paste in a text editor and save as a text file.



- 8) Upload the DSA/ RSA/ Public keys files to the InsightPower SNMP IPv6 for PDU Web. Refer to **5-3-1 System – Console** for more information.

Q14. How to upload configuration / firmware / key files via SSH/ SFTP?

To quickly configure your SNMP IPv6, you can upload the files via SSH/ SFTP. The SNMP IPv6 automatically imports your settings after the files are uploaded to the designated directories. Refer to the following table:

Directory	Files
\config_snmp	snmp.ini
\config_system	configure.ini
\ssh_dsa	DSA key
\ssh_rsa	RSA key
\ssh_pubkey	Public key
\upgrade_snmp	SNMP IPv6's firmware upgrade package (binary)
\upgrade_device*	Device's firmware upgrade package (binary)

*Appears on specific devices only.

Upload files to their respective directories. Make sure the filenames do not contain non-English characters to avoid read error. Overwrite existing files if prompted by your SFTP client.

Q15. How to test SNMPv3 in Linux?

Before you can access the SNMP OID (Object Identifier) via SNMPv3 protocol, the SNMPv3 USM table must be organized. Please refer to **5-3-2 Notification – SNMPv3 USM** for more information.

To test SNMPv3 in Linux, launch shell and key in the following command:

```
snmpwalk -v 3 -u <user> -l authPriv -A <password> -X <password> -n <context name> -t 3 <ip>
1.3.6.1.2.1.1.1.0
```

-v: 1 for SNMPv1, 3 for SNMPv3.

-l: Follow the security levels. They are: noAuthNoPriv, authNoPriv and authPriv.

-u: The user name which is assigned from SNMPv3 USM table.

-A: The Auth Password which is assigned from SNMPv3 USM table.

- X: The Priv Password which is assigned from SNMPv3 USM table.
- n: The Context Name which is assigned from SNMPv3 USM table.
- t: Timeout in seconds.
- <ip>: The IP address of the SNMP IPv6.
- <oid>: The next available SNMP OID (for example: 1.3.6.1.2.1.1.1.0). Please refer to the RFC1213 MIB.

Q16. Why does the SNMP IPv6 only monitor one PDU device?

The default setting of the SNMP IPv6 only enables to monitor the PDU whose ID is set as 0. To monitor other PDU or monitor multiple PDU devices, user can use the InsightPower SNMP IPv6 for PDU Web (**Device** → **Configuration** → **PDU**) or SNMP protocol to reset the default setting.

Appendix A : Specifications

Model Name	InsightPower SNMP IPv6 for PDU
Power Input	5 Vdc
Power Consumption	2 Watt (Max.)
Network Connection	RJ-45 jack connector (10/ 100M)
Physical	
Size (W x D x H)	45 mm x 128 mm x 55 mm
Weight	280 g
Environmental	
Operating Temperature	0 ~ 40°C
Storage Temperature	-40 ~ 125°C
Operating Humidity	10 ~ 80 % (Non-condensing)



- * Refer to the rating label for the safety rating.
- * All specifications are subject to change without prior notice.

Appendix B : Warranty

Seller warrants this product, if used in accordance with all applicable instructions, to be free from original defects in material and workmanship within the warranty period. If the product has any failure problem within the warranty period, Seller will repair or replace the product at its sole discretion according to the failure situation.

This warranty does not apply to normal wear or to damage resulting from improper installation, operation, usage, maintenance or irresistible force (i.e. war, fire, natural disaster, etc.), and this warranty also expressly excludes all incidental and consequential damages.

Maintenance service for a fee is provided for any damage out of the warranty period. If any maintenance is required, please directly contact the supplier or Seller.



WARNING : The individual user should take care to determine prior to use whether the environment and the load characteristic are suitable, adequate or safe for the installation and the usage of this product. The User Manual must be carefully followed. Seller makes no representation or warranty as to the suitability or fitness of this product for any specific application.

