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Delta InsightPower SNMP IPv6 for Precision Cooling

User Manual

www.deltapowersolutions.com



DELTA
Smarter. Greener. Together.

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.

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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
Chapter 4 : System Setting -----	13
4-1 Configuring via InsightPower SNMP IPv6 for Cooling Web -----	13
4-2 Configuring with EzSetting -----	15
4-3 Configuring via Telnet -----	17
4-4 Configuring through COM Port -----	17
4-5 Configuring via Text Mode -----	19
Chapter 5 : Web-based Interface -----	26
5-1 Equipment -----	27
5-1-1 Monitor -----	27
5-1-2 Equipment Record -----	30
5-1-3 Environment -----	31
5-2 System -----	32
5-2-1 Administration -----	32
User Manager -----	32
TCP/ IP -----	33
Web-----	34
Console-----	35

FTP-----	36
Time Server-----	36
Syslog-----	37
Batch Configuration-----	38
Upgrade-----	39
5-2-2 Notification -----	40
SNMP Access-----	40
SNMPv3 USM-----	41
SNMP Trap-----	42
Mail Server-----	43
Event Level-----	44
5-2-3 History -----	45
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

- InsightPower Precision Cooling SNMP IPv6 (hereinafter referred to as SNMP IPv6) must be used in coordination with precision air conditioning (AC) products and installed in the precision AC's SNMP card slot. Precision ACs are primarily divided into three different models: RoomCool—direct expansion type, RoomCool—chilled water type and RowCool—chilled water type.
- Do not place or use this unit in the presence of flammable substances.
- Do not attempt to disassemble the unit.
- Do not attempt to fix/ replace internal components. If you need any maintenance or repair services, please contact your dealer.
- Please do not let SNMP IPv6 contact liquids.
- 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 A**
EN 61000-3-3: 1995+A1: 2001+A2: 2005
- **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

InsightPower Precision Cooling SNMP IPv6 (hereinafter referred to as SNMP IPv6) is a smart interfacial device for connecting precision ACs to network equipment, and supports common communication protocols, such as SNMPv3, HTTP, SFTP, and Telnet. It can communicate with precision ACs to acquire status information and readings, and run network remote management and monitoring through the web-based interface. Precision Cooling are primarily divided into three different models: RoomCool—direct expansion type, RoomCool—chilled water type and RowCool—chilled water type.

2-2 Features

- **Remote network management**

Permits workstation remote management and monitoring of the precision AC through the Internet or local network.

- **Supports multiple communication protocols**

Including HTTP, HTTPS, SNMPv3, FTP, SFTP, and Telnet, and supports multiple management setting interfaces.

- **Supports environmental monitoring device (EnviroProbe)**

Paired with Delta EnviroProbe, SNMP IPv6 can detect temperature and humidity of the environment and dry contact status.

- **Support encrypted connections**

Such as HTTPS, SSH, SFTP, and SNMPv3 to improve connection security.

- **Complete event log system**

Easily manage system conditions, readings, and warning events.

- **Support IPv6 communication protocol**

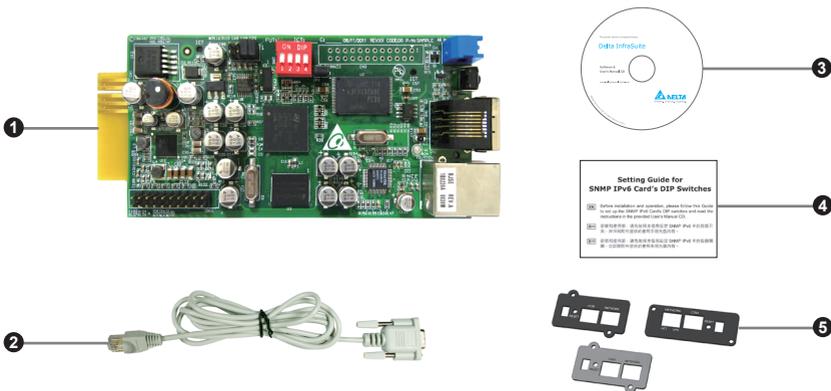
Certification label: IPv6 Ready Logo Phase 2 (Core for Host, Logo ID 02-C-000624)

Other features and supported protocols include:

- SNMP trap and e-mail alarm system
- Network time protocol
- BOOTP/DHCP protocol
- RADIUS login and local authentication
- Syslog remote event log

2-3 Package Contents

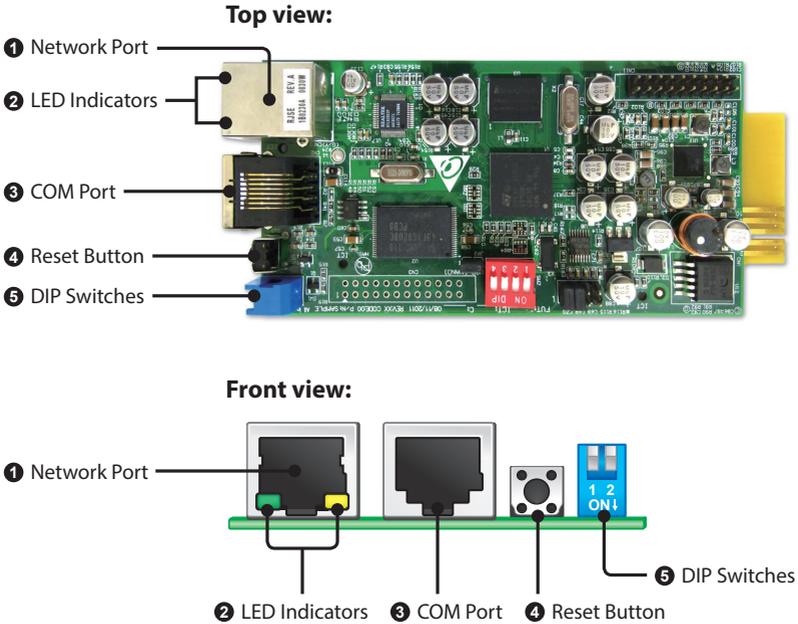
Please carefully check your SNMP IPv6 and packaged accessories. Contact your dealer if any item is missing or damaged. Should you return the items for any reason, ensure that they are carefully repacked using the original packing materials came with the unit.



No.	Item	Quantity
1	InsightPower Precision Cooling SNMP IPv6	1
2	RJ45 to DB9 cable	1
3	Software & User's Manual CD	1 pcs
4	Setting Guide for SNMP IPv6 Card's DIP Switches	1
5	Coverplate	3

2-4 Interface

SNMP IPv6 includes network port, COM port, LED indicators, Reset button, and DIP switches as shown in the following diagram:



No.	Item	Description
1	Network Port	Connects to the Ethernet Network.
2	LED Indicators	When initializing SNMP IPv6 or upgrading firmware, two LED indicators will flash simultaneously and represent the following statuses: <ul style="list-style-type: none">• Simultaneous rapid flash (every 50ms): Initialization or firm-ware upgrade in process.• Simultaneous slow flash (every 500ms): Initialization error.

No. Item	Description
<p>② LED Indicators</p>	<div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;">  <p>WARNING : Before initialization or firmware upgrade, please do not remove SNMP IPv6 or disconnect precision AC's power! This may result in data loss or SNMP IPv6 card failure.</p> </div> <p>The green LED indicator represents network connection status:</p> <ul style="list-style-type: none"> ● ON: Network connection established and IPv4 address acquired. ● OFF: Not connected to a network. ● Slow flash (every 500ms): IP address exception. <p>The yellow LED indicator represents connection status between SNMP IPv6 and precision ACs:</p> <ul style="list-style-type: none"> ● Rapid Flash (every 50ms): Connection with precision AC established and complete. ● Slow Flash (every 500ms): Connection with precision AC incomplete.
<p>③ COM Port</p>	<ol style="list-style-type: none"> 1. Use RJ45 to DB9 cable to connect to the workstation. 2. Connect EnviroProbe.
<p>④ Reset Button</p>	<p>Reset SNMP IPv6. This action will not affect precision AC operation.</p>

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

- 5 DIP switches Set up operation modes.

DIP switches	Operation mode	Description
	Normal Mode	SNMP IPv6 and precision ACs connected.
	Pass Through Mode	SNMP IPv6 and precision ACs not connected. Only COM port is provided as communication interface between the workstation and precision ACs (serial transmission speed: 9600).
	Sensor Mode (with EnviroProbe)	SNMP IPv6 connected to precision ACs and EnviroProbe (optional).
	Configuration Mode	Connect through SNMP IPv6's COM port. Please refer to 4-4 COM port system settings .



For EnviroProbe information, please refer to the usage manual.

Chapter 3 : Installation

Precision Cooling are primarily divided into three different model types: RoomCool—direct expansion type, RoomCool—chilled water type and RowCool—chilled water type. Please follow installation procedures for each model below to install SNMP IPv6.

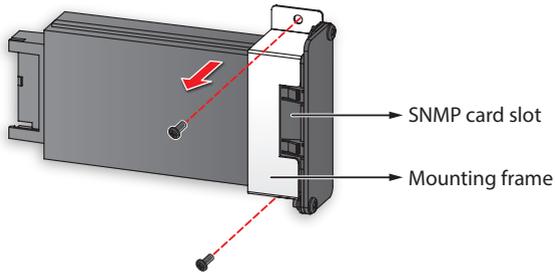
- **RoomCool—direct expansion type**

Step 1 Please first find the SNMP card slot at the location shown in the following diagram.



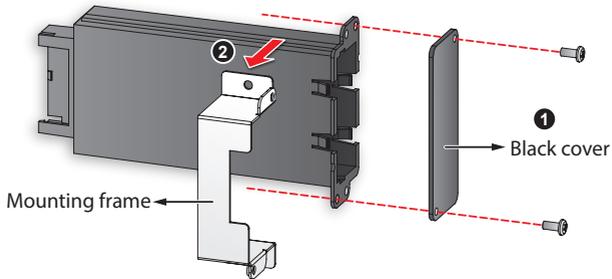
(Figure 3-1: RoomCool—direct expansion type: SNMP card slot location)

Step 2 First remove the (two) screws for securing the SNMP in the card slot, and then remove the SNMP from the card slot (*please see Figure 3-2*).



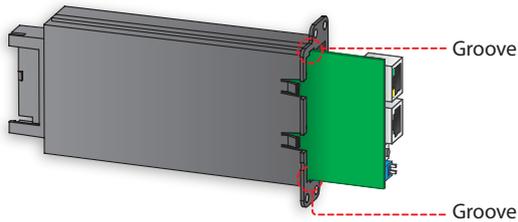
(Figure 3-2: Remove SNMP slot)

Step 3 ❶ Remove the two screws and black cover on the SNMP card slot, ❷ and then remove the mounting frame from the SNMP card slot (*please see Figure 3-3*).



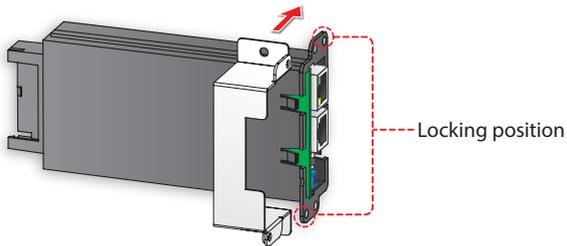
(Figure 3-3: Remove screws, cover, mounting frame)

- Step 4** Align SNMP IPv6 towards the groove and insert the SNMP card slot (*please see Figure 3-4*).



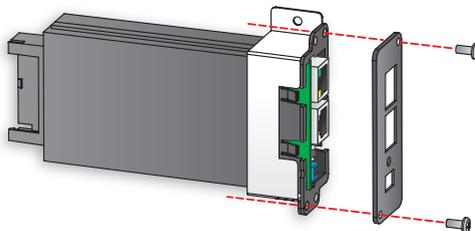
(Figure 3-4: Insert SNMP IPv6)

- Step 5** Please install the mounting frame back on the SNMP card slot and align to the locking position (*please see Figure 3-5*).



(Figure 3-5: Reassemble mounting frame)

- Step 6** There are three covers provided in the SNMP IPv6's package. Please follow the location of screw holes on the SNMP slot to select the suitable cover, and use the two previously removed screws to fix the cover on the SNMP slot (*please see Figure 3-6*).



(Figure 3-6: Lock cover)

Step 7 Finally, use the two previously removed screws from the mounting frame to lock the SNMP card slot back to the original position.

- **RoomCool—chilled water type**

Step 1 Please first find the SNMP card slot at the location shown in the following diagram.



(Figure 3-7: RoomCool—chilled water type: SNMP card slot location)

Step 2 First remove the (two) screws for securing the SNMP in the card slot, and then remove the SNMP from the card slot (**please see Figure 3-2**).

Step 3 ① Remove the two screws and black cover on the SNMP card slot, ② and then remove the mounting frame from the SNMP card slot (**please see Figure 3-3**).

Step 4 Align SNMP IPv6 towards the groove and insert the SNMP card slot (**please see Figure 3-4**).

Step 5 Please install the mounting frame back on the SNMP card slot and align to the locking position (**please see Figure 3-5**).

Step 6 There are three covers provided in the SNMP IPv6's package. Please follow the location of screw holes on the SNMP slot to select the suitable cover, and use the two previously removed screws to fix the cover on the SNMP slot (*please see Figure 3-6*).

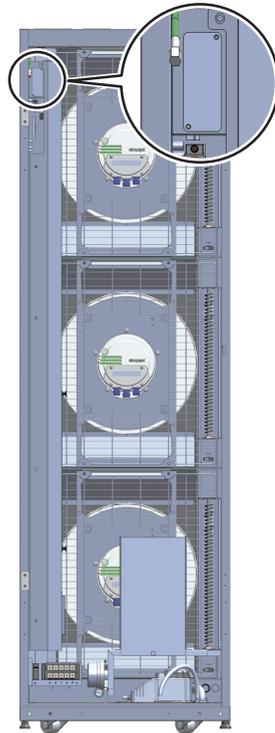
Step 7 Finally, use the two previously removed screws from the mounting frame to lock the SNMP card slot back to the original position.

- **RowCool—chilled water type**

Step 1 Please first locate the SNMP card slot. Please see *Figure 3-8, 3-9* for the location.

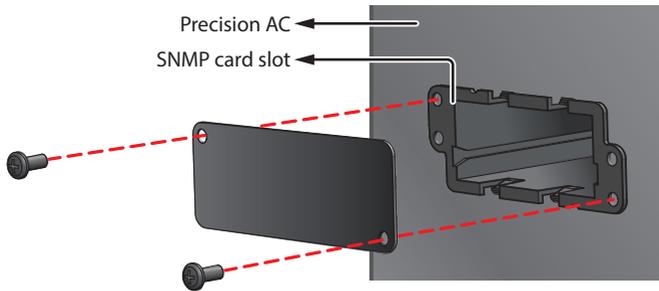


(Figure 3-8: RowCool—chilled water type (HCH1840/HCH1850): SNMP card slot location)



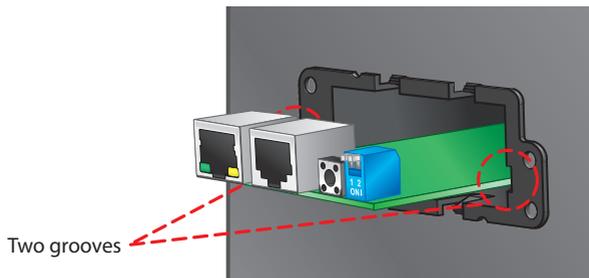
(Figure 3-9: RowCool—chilled water type (HCH1CB0/HCH1DB0): SNMP card slot location)

- Step 2** First remove the two screws and the black cover on the SNMP card slot (*please see Figure 3-10*).



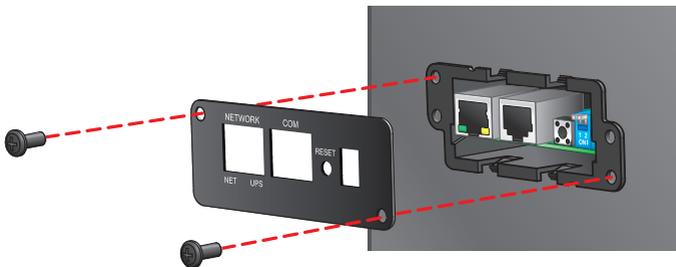
(Figure 3-10: Remove screws and black cover)

- Step 3** Align SNMP IPv6 towards the groove and insert the SNMP card slot (*please see Figure 3-11*).



(Figure 3-11: Insert SNMP IPv6)

- Step 4** There are three covers provided in the SNMP IPv6's package. Please follow the location of screw holes on the SNMP slot to select the suitable cover, and use the two previously removed screws to fix the cover on the SNMP slot (*please see Figure 3-12*).



(Figure 3-12: Lock cover)

Chapter 4 : System Setting

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 Cooling Web offers comprehensive system management and monitoring. Please refer to **Chapter5: Web-based Interface**.
- **EzSetting program:** 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 onfiguring 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 Cooling Web

To set up the SNMP IPv6 via SNMP IPv6 for Precision Cooling Web, 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.

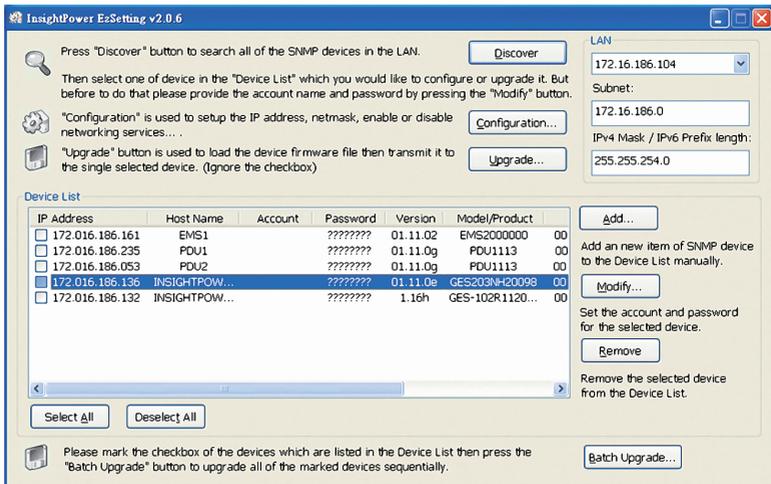
NOTE

Please refer to **Chapter 5: Web-based interface** to complete SNMP IPv6 setup.

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.

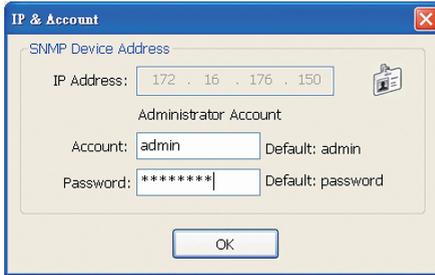
- Step 1** Use a CAT5 network cable to connect the SNMP IPv6's Network port to the network.
- Step 2** Make sure the two DIP switches of the SNMP IPv6 are set to the **OFF** position (Normal Mode) to enable network communication. Make sure the workstation and the SNMP IPv6 are on the same LAN.
- Step 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.



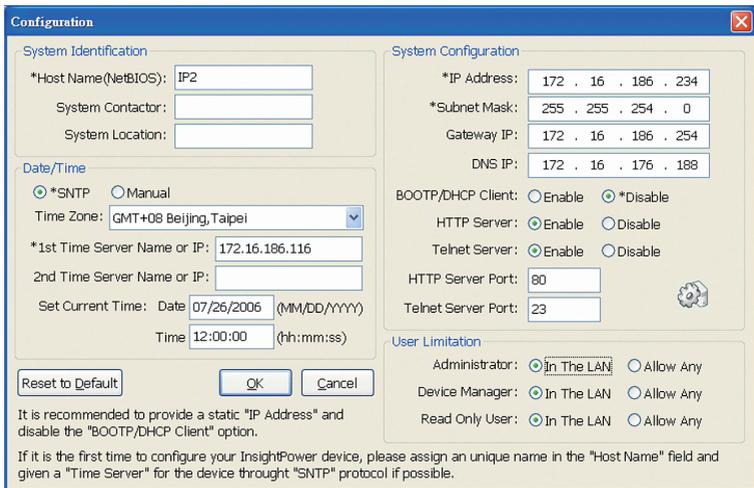
NOTE

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).



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



Please refer to **Chapter 5: Web-based interface** to complete SNMP IPv6 setup.

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 Host Name** or **telnet IP** to initiate telnet connection with 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. To completely set up your SNMP IPv6, please refer to **Chapter 5: Web-based interface**.

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.

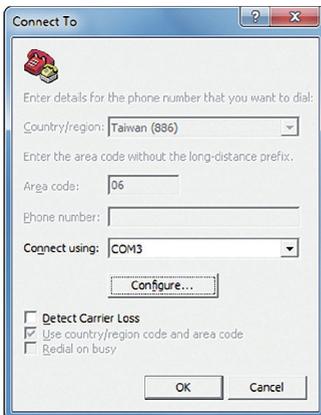
- Step 1** Use the provided RJ45 to DB9 cable to connect SNMP IPv6's COM port to the workstations' COM port.
- Step 2** Make sure the two DIP switches of the SNMP IPv6 are set to the **OFF** position (Normal Mode).

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

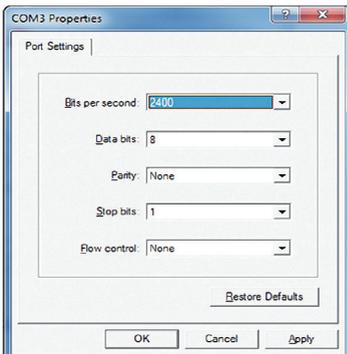


Microsoft has removed HyperTerminal from Windows Vista and later versions. If your operation system does not include the program, a free alternative Telnet/SSH client PuTTY can be downloaded from <http://www.putty.org> to perform the following configurations.

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



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



Step 6 Click **OK** to continue and set the two DIP Switches of SNMP IPv6 to **ON** 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). When connection is established, key in Administrator's account and 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: Allow Any
    Device Manager
  [8].Account:  device
  [9].Password:  *****
  [a].Limitation: Allow Any
    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. (Enable: ON/Disable: OFF)	Disable
[2]	Server	The RADIUS server name.	
[3]	Secret	The RADIUS secret value.	
[4]	Port	The RADIUS port.	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.	Allow Any
[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.	Allow Any
[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:           Disable
[b].Host Name (NetBIOS): INSIGHTPOWER
[c].System Contact:
[d].System Location:
[e].Auto-Negotiation: Enable
[f].Speed:             100M
[g].Duplex:            Full
[i].Telnet Idle Time: 60 Seconds
[0].Back To Previous Menu

Please Enter Your Choice =>

```

No.	Item	Description	Default:
[1]	IPv4 Address	IPv4 address.	192.168.001.100
[2]	IPv4 Subnet Mask	IPv4 subnet mask setting.	255.255.255.000
[3]	IPv4 Gateway IP	IPv4 gateway.	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

No.	Item	Description	Default:
[6]	IPv6 Address	IPv6 address.	
[7]	IPv6 Prefix Length	IPv6 prefix length.	
[8]	IPv6 Gateway IP	IPv6 network gateway.	
[9]	IPv6 DNS IP	IPv6 Domain Name Server's IP address.	
[a]	DHCPv6	Enable/ Disable DHCPv6 protocol.	Disable
[b]	Host Name (NetBIOS)	The Host Name for the SNMP IPv6.	INSIGHTPOWER
[c]	System Contact	System contact information.	
[d]	System Location	System location information.	
[e]	Auto-Negotiation	Enable/disable automatic transfer rate (10/ 100Mbps) protocol.	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
[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:         Enable
[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.	Enable
[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.	
[e]	Syslog Server 3	The Host Name of remote Syslog Server 3.	

No.	Item	Description	Default
[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:
[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]	1st Time Server	The first time server for SNTP.	
[4]	2nd 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 SNMP IPv6. This action will not affect precision AC operation.

Reset All To Default

Reset to manufacture default.

Exit Without Saving

Exit and ignore changes.

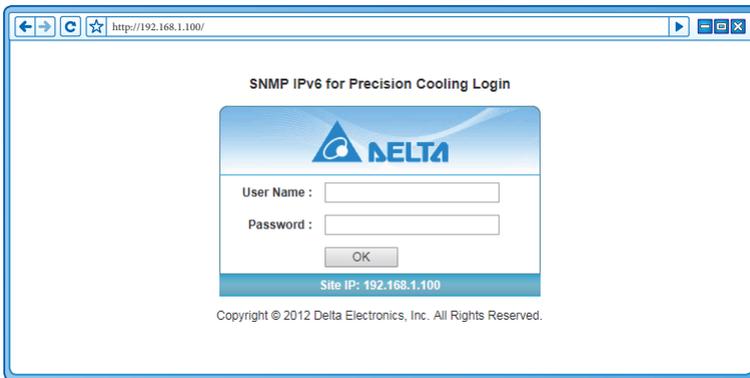
Save and Exit

Preserve your changes and exit.

Chapter 5 : Web-based Interface

To set up SNMP IPv6 and monitor precision ACs via SNMP IPv6 for Precision Cooling Web, please follow the instructions 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 default IP address **http://192.168.1.100**. 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, case sensitive).



NOTE

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

5-1 Equipment

The equipment page consists of monitor and environment items. Please see the following descriptions.

5-1-1 Monitor

From the Monitor page, you can view the status and reading of the precision cooling, refreshed at a default rate of every 10s. You can also press F5 key to manually refresh. Precision cooling are primarily divided into four different models: RoomCool—direct expansion type, RoomCool—chilled water type, RowCool—chilled water type (HCH1840/HCH1850) and RowCool—chilled water type (HCH1CB0/HCH1DB0).

After you insert SNMP IPv6 into the precision cooling's SNMP card slot, the page will automatically display the model page based on the precision cooling model you are using. Different pages will be displayed for different models. Please refer to the following diagram. On the page, the blue, gray, green, and red signal lights represent the current operation modes and warning event statuses for each system.

Signal lights	Meaning
Blue	Represents the current operation mode of the machine.
Gray	Represents that the mode is not operating.
Green	Represents normal operation
Red	Represents that warning event occurred for the item.

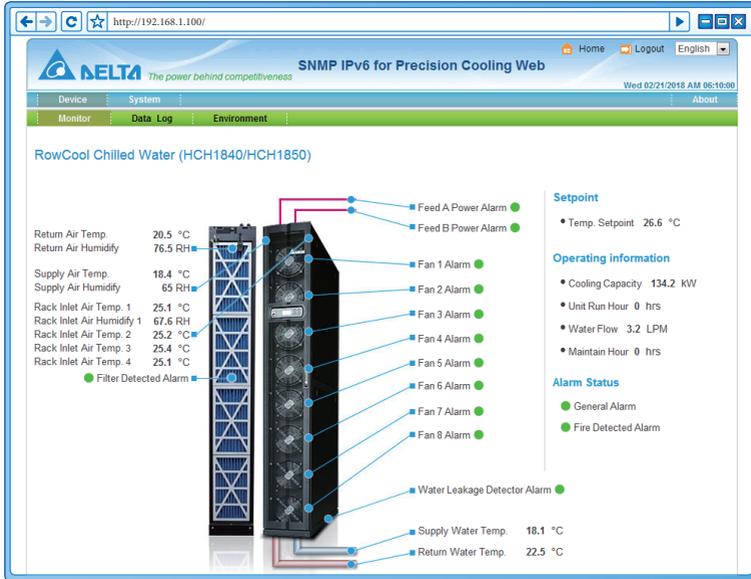
RoomCool—direct expansion type

The screenshot displays the 'RoomCool Air-Cooled' web interface. The browser address bar shows 'http://192.168.1.100/'. The page header includes the DELTA logo and 'SNMP IPv6 for Precision Cooling Web'. A navigation menu at the top has 'Device', 'System', and 'Monitor' tabs, with 'Monitor' selected. Below the menu, there are links for 'Data Log' and 'Environment'. The main content area features a 3D rendering of the RoomCool unit with blue callout lines pointing to various components. To the right of the rendering is a list of status indicators: 'Filter Detected Alarm' (green dot), 'Room Temp. 0 °C' and 'Room Humidity 0 rh%' (blue dots), 'Run Hour of Comp1 0 hrs' and 'Run Hour of Comp2 0 hrs' (blue dots), 'Cylinder Drain Alarm' (green dot), and 'Cylinder Full Alarm' (green dot). Further right, there are sections for 'Operation mode' (radio buttons for Fan Mode, Cooling Mode, Reheating Mode, Dehumidification Mode, Humidification Mode), 'Setpoint' (Temp. Setpoint 0 °C, Humidity Setpoint 0 rh%), 'Operating information' (Run Hour of Unit 0 hrs), and 'Alarm Status' (General Alarm, Fire Detected Alarm, Water Leakage Detector Alarm, all with green dots).

RoomCool—chilled water type

The screenshot displays the 'RoomCool Chilled Water' web interface. The browser address bar shows 'http://192.168.1.100/'. The page header includes the DELTA logo and 'SNMP IPv6 for Precision Cooling Web'. A navigation menu at the top has 'Device', 'System', and 'Monitor' tabs, with 'Monitor' selected. Below the menu, there are links for 'Data Log' and 'Environment'. The main content area features a 3D rendering of the RoomCool unit with blue callout lines pointing to various components. To the right of the rendering is a list of status indicators: 'Filter Detected Alarm' (green dot), 'Room Temp. 0 °C' and 'Room Humidity 0 rh%' (blue dots), 'Fan Pressure Alarm' (green dot), 'Cylinder Drain Alarm' (green dot), 'Cylinder Full Alarm' (green dot), 'Return Water Temp. 0 °C' (blue dot), and 'Supply Water Temp. 0 °C' (blue dot). Further right, there are sections for 'Operation mode' (radio buttons for Fan Mode, Cooling Mode, Reheating Mode, Dehumidification Mode, Humidification Mode), 'Setpoint' (Temp. Setpoint 0 °C, Humidity Setpoint 0 rh%), 'Operating information' (Run Hour of Unit 0 hrs), and 'Alarm Status' (General Alarm, Fire Detected Alarm, Water Leakage Detector Alarm, all with green dots).

● RowCool—chilled water type (HCH1840/ HCH1850)



● RowCool—chilled water type (HCH1CB0/ HCH1DB0)



5-1-2 Equipment Record

Mainly used to record key parameters of the Cooling equipment in fixed time intervals. You can search, copy, or clear data history through this configuration page. If the time interval is set to 0 (default), records will be deleted. Place the cursor on the field to find out detailed information, **Total** represents the total number of events recorded. To manually define the search time range, click on the date field and specify the date on the popup window. Clicking on **Clear Data Records** clears all saved records.

To search specified event, select the type of reading to view and specify the number of event entries on each page in the drop down menu, and press **Load** to refresh page. Click on **Forward Search/Backward Search** to select the order of data records listed.

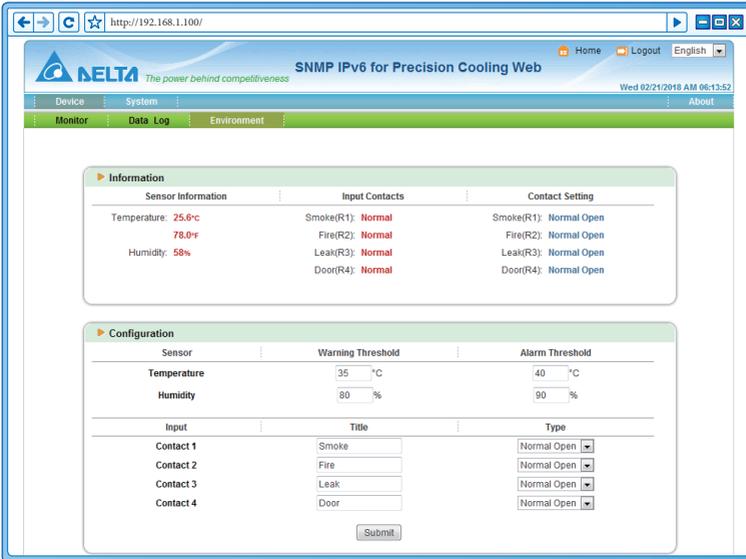
You can copy all event records to an Excel worksheet. Please select **Select & Copy Current Records** and the popup window will notify you to press **CTRL+C** to copy, and then press **CTRL+V** in the Excel worksheet to paste.

The screenshot shows the 'Data Log' section of the Delta SNMP IPv6 for Precision Cooling Web interface. The interface includes a navigation bar with 'Home', 'Logout', and 'English' options, and a breadcrumb trail: 'Device > System > About'. Below the breadcrumb, there are tabs for 'Monitor', 'Data Log', and 'Environment'. The 'Data Log' tab is active, displaying a table of recorded data. The table has 13 columns: 'Num', 'Date', 'Time', 'Temperature Setpoint', 'Humidity Setpoint', 'Supply Air Temperature', 'Supply Air Humidity', 'Return Air Temperature', 'Return Air Humidity', 'Rack Inlet Air(1) Temperature', 'Rack Inlet Air(1) Humidity', 'Rack Inlet Air(2) Temperature', and 'Rack Inlet Air(2) Humidity'. The table shows 174 total entries, with the first 17 rows visible. All values in the table are 0.0. The interface also includes a search filter with 'Save Data Interval' set to 1 minute, and a 'Clear History Data' button at the bottom.

Num	Date	Time	Temperature Setpoint	Humidity Setpoint	Supply Air Temperature	Supply Air Humidity	Return Air Temperature	Return Air Humidity	Rack Inlet Air(1) Temperature	Rack Inlet Air(1) Humidity	Rack Inlet Air(2) Temperature	Rack Inlet Air(2) Humidity
174	2/21/2018	6:12:57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
173	2/21/2018	6:11:57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172	2/21/2018	6:10:57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
171	2/21/2018	6:09:57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170	2/21/2018	6:08:57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
169	2/21/2018	6:07:57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
168	2/21/2018	6:06:57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167	2/21/2018	6:05:57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
166	2/21/2018	6:04:57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165	2/21/2018	6:03:57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
164	2/21/2018	6:02:57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
163	2/21/2018	6:01:57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162	2/21/2018	6:00:57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
161	2/21/2018	5:59:57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160	2/21/2018	6:05:53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
159	2/21/2018	6:04:53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
158	2/21/2018	6:03:53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157	2/21/2018	6:02:53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

5-1-3 Environment

Only when you are using the sensor (EnviroProbe) and switch SNMP IPv6's DIP switch 1 to the **ON** position and DIP switch 2 to the **OFF** position, the following Environment page will appear. The Environment page includes System and Configuration. In System, you can check sensor temperature and humidity and input contact and contact setting information. In Configuration, you can set EnviroProbe's critical temperature and humidity warning points, alarm critical point, and contact names and types, shown in the following diagram. For EnviroProbe information, please refer to the Installation Guide included in the package of the EnviroProbe.



5-2 System

Change or view System related configured values or records here.

5-2-1 Administration

● 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 shut off, you can still configure account, password, and login restrictions in User Limitation.

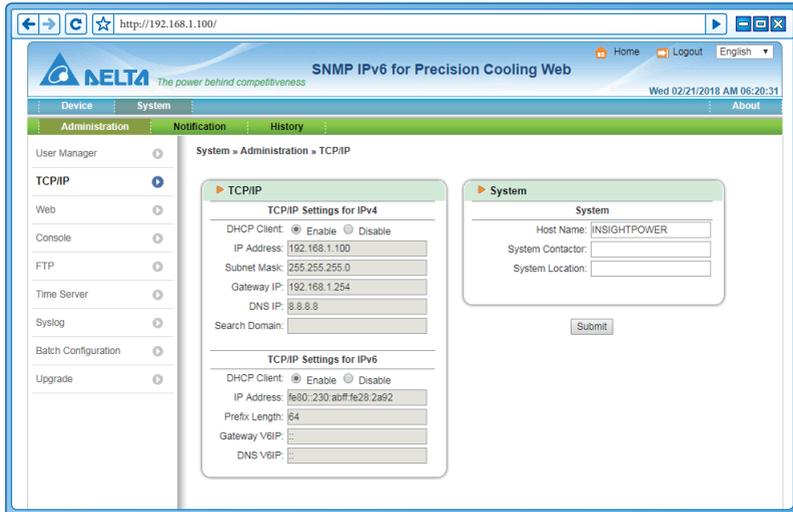
The screenshot shows the 'User Manager' configuration page in the 'SNMP IPv6 for Precision Cooling Web' interface. The page is titled 'System » Administration » User Manager'. The main configuration area is divided into several sections:

- Use RADIUS:** A checkbox labeled 'Use RADIUS' is checked. Below it are three input fields: 'Server (51 chars max.)', 'Secret (32 chars max.)', and 'Port' (with the value '1812' entered).
- RFC285 Service Type:** A table with three columns: 'Administrator', 'Device Manager', and 'Read Only User'. Each column contains a list of service types with checkboxes. For 'Administrator', 'Administrative' is checked. For 'Device Manager', 'Framed User' and 'Administrative' are checked. For 'Read Only User', 'Login User' and 'Framed User' are checked.
- Local Authentication:** A table with four columns: 'Privilege', 'Account Name (16 chars max.)', 'Password (16 chars max.)', and 'Login Limitation'. The rows are for 'Administrator', 'Device Manager', and 'Read Only User'. The 'Login Limitation' column has radio buttons for 'Only in This LAN' (selected) and 'Allow Any'.

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

TCP/IP

Please configure Network Parameter for SNMP IPv6 here.



• Network Protocol Settings for IPv4

Please configure IP address, subnet mask, gateway IP address, DNS server IP address, and Discovery Domain for IPv4 TCP/IP.

If you enable DHCP, DHCP server automatically assigns an IP address to SNMP IPv6. If SNMP IPv6 cannot connect to the Host Name you provided in the System Information field, the system appends the search domain to your Host Name.

• Network Protocol Settings for IPv6

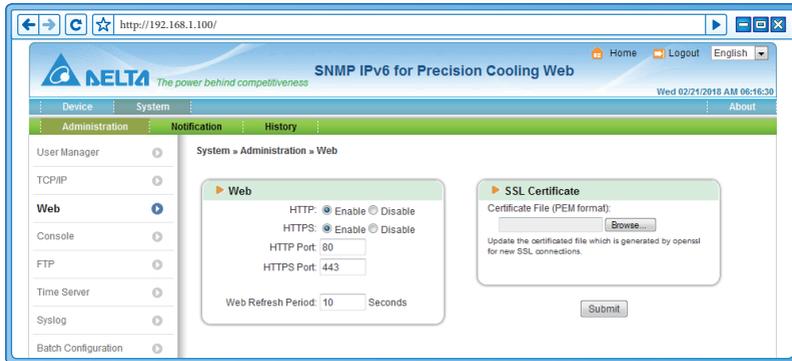
Please configure IP address, prefix length, gateway IP address, and DNS server IP address for IPv6 TCP/IP.

If you enable DHCP, DHCP server automatically assigns an IP address to SNMP IPv6.

• System Information

The host name, system contact, and system location of the host name SNMP IPv6 in the local network are additional system information. You can input selectively or leave the fields blank as default.

Web



- **Web**

Enable or disable HTTP/HTTPS communication protocol and assign port numbers. Default HTTP is 80 and default HTTPS port is 443. Here, you can also manually assign webpage refresh cycle to automatically update information after the assigned number of seconds. The default value is 10s. This configuration works for system status and environment information pages under the equipment page.

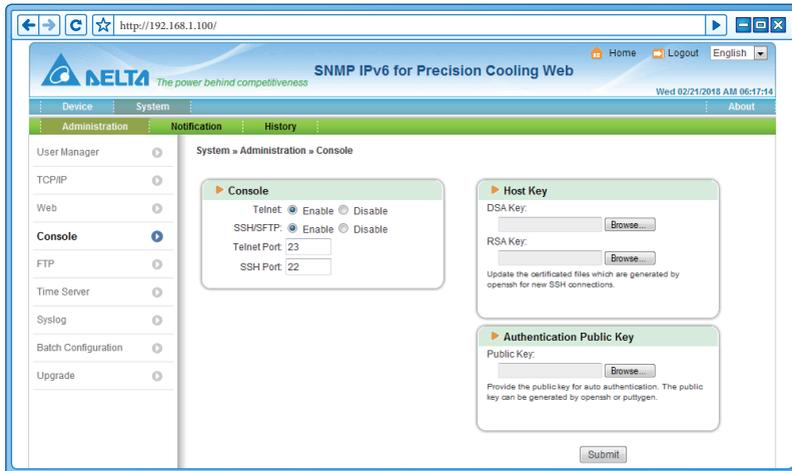
- **SSL Security Certificate**

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. PEM format generated by OpenSSL supported by SNMP IPv6. Click **Select File** to upload your certification file.



For more information related to SSL certification file, please see **Chapter 7: Troubleshooting Q12**, or refer to OpenSSL official website: <http://www.openssl.org>.

Console



- **Console**

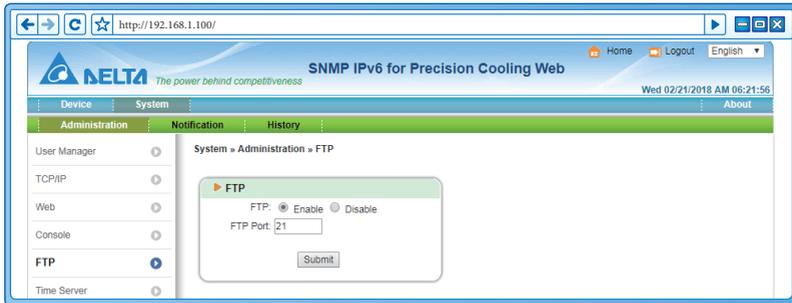
Enable/Disable Telnet or SSH/SFTP protocol and assign port number here.

- **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 and configuration files. For detailed information, please refer to **Chapter 7: Troubleshooting Q14**.

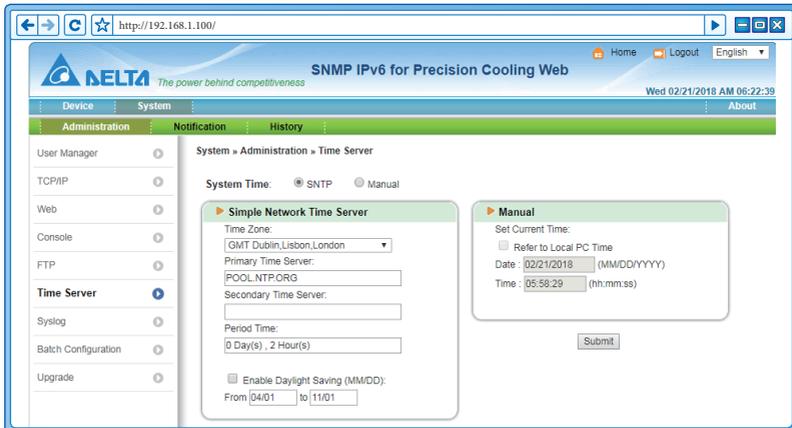
FTP

Enable/Disable Telnet or SSH/SFTP protocol and assign port number here.



Time Server

You can manually configure time and date or select Automatic Synchronize Time Server. Please note that if the server does not respond when Automatic Synchronize Time Server is enabled, SNMP IPv6 will not record events and data.



- **Simple Network Time Server**

From the drop down menu, select the time zone for the location where the SNMP IPv6 is located, and set up primary and secondary time servers (IP address or domain name), assign update frequency in Update Cycle. SNMP IPv6 will automatically synchronize with the first responding server.

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 when you restart SNMP IPv6's network module, time and date will automatically be reset to default.

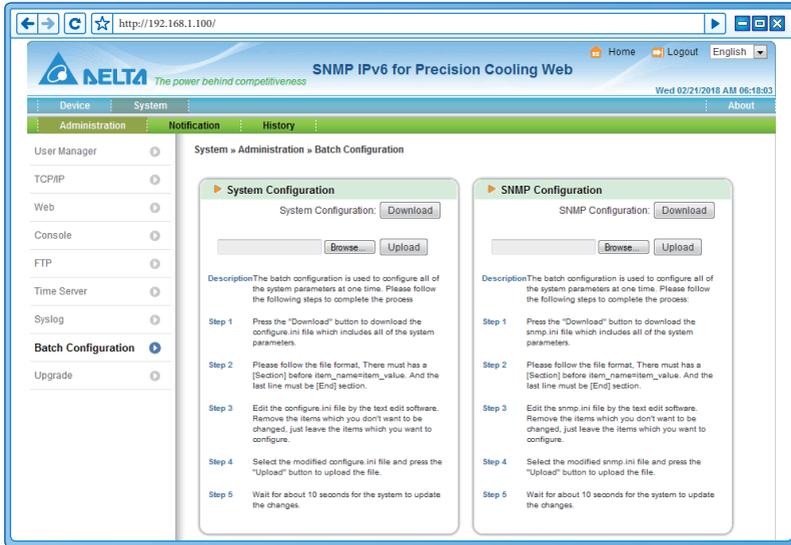
- **Syslog**

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 setup on multiple SNMP IPv6 cards. 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

System Configuration covers settings saved in the **System** → **Administration** page. To output and download the configuration file, please click **Download** (file name: configure.ini) and save as new file in the harddrive. To import configuration file, please click **Choose File**, select the configuration file you wish to import, 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

Includes all settings under the **System** → **Notification** page. To export and download configuration files, please click on **Download** (file name: snmp.ini) and save as a separate file in the harddrive. To upload/import configuration file, please click **Choose File**, select the configuration file you wish to import, and click **Upload**.



You can refer to step descriptions below the page to modify the configuration file.

● Upgrade

This is the SNMP IPv6 firmware upgrade page, which is divided into the two parts of network card and equipment firmware. Equipment firmware only provides cabinet type precision AC models. Click **Select File** in firmware file and then select **Upload**. Network card firmware upgrade will take about 1 minute and equipment firmware update will take about 40 minutes.

The screenshot displays the web interface for upgrading SNMP IPv6 firmware. The browser address bar shows 'http://192.168.1.100/'. The page title is 'SNMP IPv6 for Precision Cooling Web'. The navigation menu includes 'Device', 'System', 'Administration', 'Notification', and 'History'. The 'System' menu is expanded to show 'Upgrade'. The 'Upgrade' page is divided into two main sections: 'Network Card Firmware' and 'Device Firmware'. Both sections show the current version, a file upload field with a 'Browse...' button, and an 'Upload' button. The Network Card Firmware section shows a status of 'Idle state' and 'OK'. The Device Firmware section shows a status of 'Idle state' and 'OK'. Both sections include a description and two steps for the upgrade process.

5-2-2 Notification

SNMP Access

The screenshot shows a web browser window with the URL <http://192.168.1.100/>. The page title is "SNMP IPv6 for Precision Cooling Web". The navigation menu includes "Administration", "Notification", and "History". The "SNMP Access" section is active, showing a "Port Configuration" form and an "NMS List" table.

Port Configuration

SNMP Server Port: Download MIB: [Cooling](#) [Sensor](#)

NMS List

Allowed NMS IP: IP address 0.0.0.0 represents it allows to receive the SNMP packets from any host.

Community String:

Access Level:

	NMS IP	Community	Access Level
1	0.0.0.0	public	Read Only

SNMP IPv6 supports SNMP 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, please specify from the list of NMS IP addresses that are allowed for access, and configure community strings and access levels. A maximum number of 256 IP entries can be assigned.



If you add IP address 0.0.0.0 to the list, NMS IP access restriction will become ineffective. SNMP IPv6 will determine connection access level and permission based on community strings.

SNMPv3 USM

SNMPv3 offers features such as the encryption of packets and authentication to improve security. You can assign 8 user names and individual access permission. You can also define their respective Security Levels, Auth Passwords, User Name, and Access Levels.

System » Notification » SNMPv3 USM

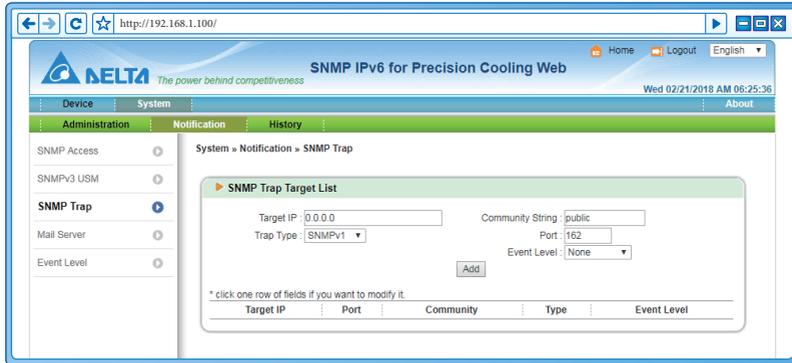
Auth Protocol: MD5 Context Name:

Priv Protocol: CBC-DES

	User Name (16 bytes max.)	Security Level	Auth Password (= 8 bytes)	Priv Password (= 8 bytes)	Access Level
1	<input type="text"/>	noAuth, noPriv ▼	<input type="text"/>	<input type="text"/>	Read Only ▼
2	<input type="text"/>	noAuth, noPriv ▼	<input type="text"/>	<input type="text"/>	Read Only ▼
3	<input type="text"/>	noAuth, noPriv ▼	<input type="text"/>	<input type="text"/>	Read Only ▼
4	<input type="text"/>	noAuth, noPriv ▼	<input type="text"/>	<input type="text"/>	Read Only ▼
5	<input type="text"/>	noAuth, noPriv ▼	<input type="text"/>	<input type="text"/>	Read Only ▼
6	<input type="text"/>	noAuth, noPriv ▼	<input type="text"/>	<input type="text"/>	Read Only ▼
7	<input type="text"/>	noAuth, noPriv ▼	<input type="text"/>	<input type="text"/>	Read Only ▼
8	<input type="text"/>	noAuth, noPriv ▼	<input type="text"/>	<input type="text"/>	Read Only ▼

SNMP Trap

You can also use SNMP Trap to report system events. To use SNMP Trap, please add new IP address in the list of target IPs, and assign port numbers, community strings, Trap type, and event levels, and click on **Add**; Click on a target IP to modify or delete the entry.



SNMP IPv6 supports SNMPv1, SNMPv2c, and SNMPv3 Trap. If you select SNMPv3 Trap, please provide user name in the SNMPv3 USM list.

SNMP IPv6 determines the type of Notification the target IP address will receive based on the Event Level, which is divided into three types:

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

Click on **Event Level** on the left menu to set event levels for specific events.

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 'Mail Server Configuration' page in the Delta SNMP IPv6 for Precision Cooling Web interface. The page is titled 'System » Notification » Mail Server'. It contains the following fields and options:

- SMTP Server Name or IP: (51 bytes max.)
- Account: (32 bytes max.)
- Password: (16 bytes max.)
- Enable TLS/SSL
- Mail Title: [SNMP IPv6 for Precision Cooling] (128 bytes max.)
- Submit button

Below the configuration fields is the 'Mail List' section, which includes:

- Receiver: name@company.com
- Event Level: None (dropdown menu)
- Add and Test e-mail buttons

At the bottom, there is a table with the following data:

	Receiver	Event Level
1	name@company.com	None



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.

- If you enter a **Host Name or IP address** in the mail server, a DNS IP should be added in TCP/IP.

Add e-mail address in the recipient list and specify the event to send out notification. Events:

- 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.

Event Level

The screenshot shows the Delta SNMP IPv6 for Precision Cooling Web interface. The browser address bar shows the URL <http://192.168.1.100/>. The page title is "SNMP IPv6 for Precision Cooling Web". The navigation menu includes "Administration", "Notification", and "History". The "Event Level" option is selected in the left sidebar. The main content area is titled "System » Notification » Event Level" and contains a table with the following data:

ID	Event Message	Level
1	General Alarm	Alarm
2	FireDetected(Smoke) Alarm	Alarm
3	Water Leakage Detector Alarm	Alarm
4	Filter Detected Alarm	Alarm
5	Cylinder Drain Alarm	Alarm
6	Cylinder Full Alarm	Alarm
7	Fan Pressure Alarm (RoomCoolCW)	Alarm
8	Fan Alarm	Alarm
9	Feed A Power Alarm (RowCool)	Alarm
10	Feed B Power Alarm (RowCool)	Alarm
11	Reheater Alarm	Alarm
12	Humidifier Alarm	Alarm
13	Condensation Drain Pan Full	Alarm
14	Inner Communication Failure	Alarm
15	Emergency Power Off (EPO)	Alarm
16	Out Of Range	Warning
17	Device Firmware Upgrade	Warning
18	Cooling Communication	Information
19	Low Pressure Alarm	Alarm
20	High Pressure Alarm	Alarm
21	Compressor Alarm	Alarm
22	Outdoor Fan Alarm	Alarm

A "Submit" button is located at the bottom of the table.

- **Equipment:** Here you can manually define precision AC's various event levels, including messages (blue), warnings (yellow), and alarms (red). You must press **Submit** after completing settings to take effect.
- **EnviroProbe:** To set up EnviroProbe's event levels for various events, including messages (blue), warnings (yellow), and alarms (red), you must press **Submit** after completing settings to take effect. Please note that only when you are using the sensor (EnviroProbe) and switch SNMP IPv6's DIP switch 1 to the **ON** position and DIP switch 2 to the **OFF** position, this item will then appear.

5-2-3 History

Check all warning event records, use , Flip Page, or direct assign and go to page. To display specific event records of a certain time range, click **Load** after confirmation.

Click **Download All Event Log File**, a popup window will appear and notify you to separately save file in the harddrive. The supported format is Excel worksheet. You can directly browse or edit the file in Excel.

Clicking on **Clear Event Log** will clear all records. The user is recommended to first download and backup all event log files before performing this action.

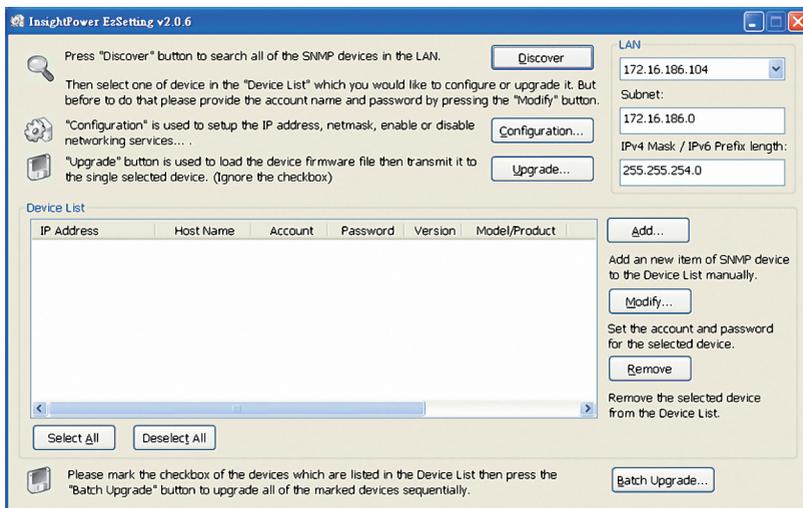
The screenshot shows the 'Event Log' page in the web interface. The page title is 'Event Log x Page1'. It features a navigation bar with buttons for '<<', '1', '2', '3', '>>', and 'Download All'. Below the navigation bar, there are input fields for 'From' and 'to' dates, both set to '02/21/2018', and an 'Apply' button. The main content is a table with the following data:

Date	Time	Level	Event Log
02/21/2018	06:00:06	System	The time is in SNTP mode but no time server was found.
02/21/2018	06:00:11	System	The time is in SNTP mode but no time server was found.
03/06/2018	05:39:59	System	The time of device has been synchronized through system.
02/21/2018	05:59:02	System	The time has been synchronized through SNTP.
03/06/2018	03:03:20	System	The time of device has been synchronized through system.
02/21/2018	05:59:04	System	The time has been synchronized through SNTP.
03/06/2018	02:50:16	System	The time of device has been synchronized through system.
02/21/2018	05:55:11	System	The time has been synchronized through SNTP.
02/21/2018	06:00:11	System	The time is in SNTP mode but no time server was found.
02/21/2018	07:01:37	System	admin login to the WEB from 10.0.10.24
02/21/2018	07:00:30	System	admin login to the WEB from 10.0.10.24
02/21/2018	06:36:40	System	admin login to the WEB from 10.0.10.24
02/21/2018	06:36:21	System	Logout from the WEB
02/21/2018	06:35:41	Warning	Environment sensor disconnect
02/21/2018	06:35:19	System	The time of device has been synchronized through system.
02/21/2018	05:59:04	System	The time has been synchronized through SNTP.
02/21/2018	06:33:24	System	Logout from the WEB
02/21/2018	06:29:49	System	The time of device has been synchronized through system.
02/21/2018	05:59:44	System	The time has been synchronized through SNTP.
02/21/2018	06:27:04	System	Logout from the WEB

At the bottom of the table, there is a 'Clear Event Log' button.

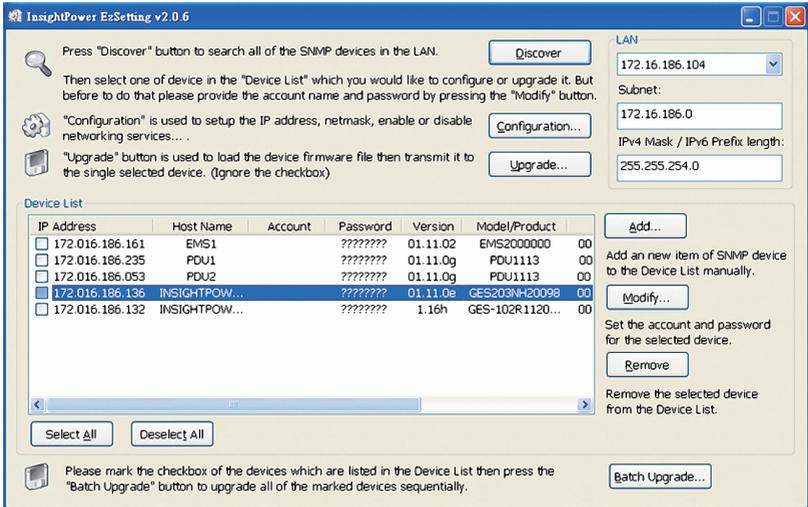
Chapter 6 : SNMP Device Firmware Upgrade

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

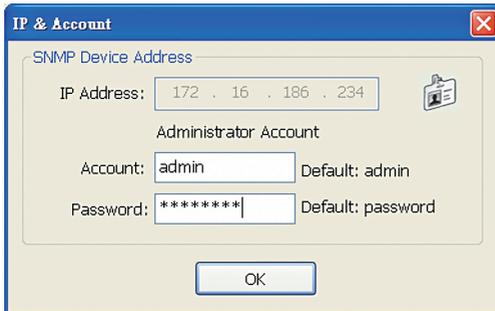


- Step 1** The subnet mask allows you to define the device discovery range in the specified subnets. Make sure the SNMP device you wish to upgrade is in the subnet that is specified. If it is not, please modify the subnet and subnet mask.

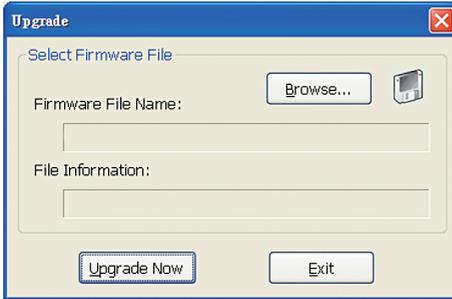
Step 2 Click **Discover** (search). A list of searched SNMP devices will appear in the list.



Step 3 Select a device from the Device List, and then click **Modify**, and enter 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 my workstation is established?

If the linking between the SNMP IPv6 and the precision AC is correctly established, the yellow LED indicator should flash rapidly; Else, please confirm that the device ID setting on SNMP IPv6 and the precision AC is consistent.

```
C:\>ping 172.16.186.230

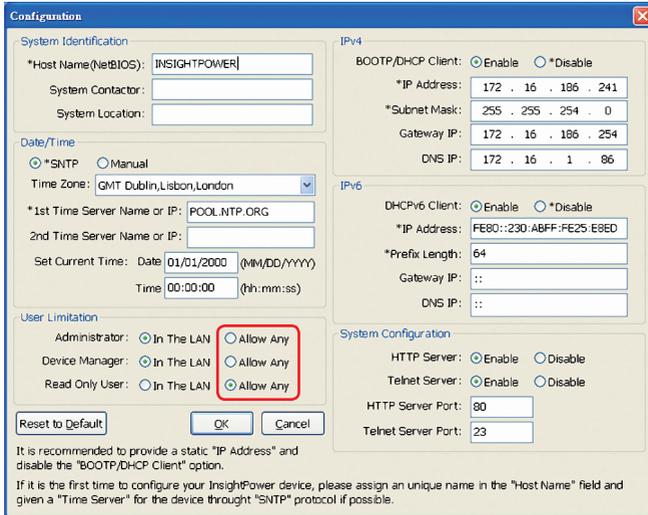
Pinging 172.16.186.230 with 32 bytes of data:
Reply from 172.16.186.230: bytes=32 time=2ms TTL=64
Reply from 172.16.186.230: bytes=32 time=2ms TTL=64
Reply from 172.16.186.230: bytes=32 time=2ms TTL=64
Reply from 172.16.186.230: bytes=32 time=4ms TTL=64

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 Precision Cooling 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.



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 invalid, SNMP IPv6 will reset to default IP settings (IPv4 address: 192.168.1.100/netmask: 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 **5-2-2 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 **5-2-2 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.

Q9. Unable to receive SNMP trap?

Refer to **5-2-2 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 via COM Port** to establish a connection between SNMP IPv6 and the workstation using the provided RJ45 to DB9 cable. 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 XP IPv6 in Windows XP?

Please first enable IPv6 service (click **START** → **RUN**, and enter **ipv6 install**, and then press **Enter** key). 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 Cooling Web. Please refer to **5-2-1 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):

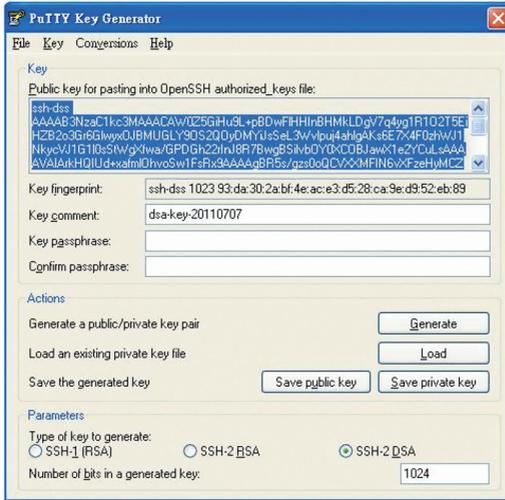
```
DSA Key:ssh-keygen -t dsa
```

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

- 3) Upload DSA and RSA keys to the InsightPower SNMP IPv6 for Cooling Web. Please refer to **5-2-1 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 DSA and RSA and public keys to SNMP IPv6 through the Web-based interface. Please refer to **5-2-1 Administration – 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 firmware upgrade package (.bin binary file)
\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?

You must edit SNMPv3 USM to use SNMPv3 to access OID. Please refer to **5-2-2 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 <pass-  
word> -X <password> -n <context name> -t 3 <ip>  
1.3.6.1.2.1.1.1.0
```

-v: 1 refers to SNMPv1, 3 refers to SNMPv3.

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

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

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

-X: 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 OID, such as: 1.3.6.1.2.1.1.1.0. Please refer to the RFC1213 MIB database.

Appendix A : Specifications

Model Name	InsightPower Precision Cooling SNMP IPv6
Input	12 Vdc
Power Consumption	2 Watts (Max.)
Network Connection	RJ-45 jack connector (10/100M)
Dimensions/Weight	
Dimensions (WxD)	130 mm x 60 mm
Weight	75 g
Environment	
Operating Temperature	0 ~ 60°C
Storage Temperature	-40 ~ 125°C
Operating Relative Humidity	0 ~ 90 % (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.

No. 353413901011
Version : V 10.11
UM Date : 2018_05_09



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.

