DPS Telecom

"Your Partners in Network Alarm Monitoring"

NetGuardian 420

WEB USER MANUAL

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Revision History

September 11, 2020	Minor updates
August 29, 2019	NG420 config backup/restore over HTTPS
January 26, 2015	System Settings Update
April 8, 2014	Fixed broken graphic links
October 28, 2013	Added CellGuard Option
June 12, 2013	Added SCAN protocol support
April 9, 2013	Added D-Wire support
June 19, 2012	Initial release. First division from Hardware User Manual. To be used with Firmware version 1.1A and above.
June 25, 2012	Updated Analog Images
July 19, 2012	Updated Edit Controls with information about Advanced Controls build option
November 19, 2012	Described Battery Monitoring Features within the Adv. Controls build option

Notice

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Contents

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1 Web Interface Overview

The NetGuardian's Web Browser Interface lets you manage alarms and configure the unit through the Internet or your Intranet. You can quickly set up alarm point descriptions, view alarm status, issue controls, and configure paging information, and more. The NetGuardian supports Internet Explorer versions 4.0 and above and Netscape Navigator versions 4.7 and above.

2 Configuring the NetGuardian

The NetGuardian must be provisioned with log-on passwords, alarm descriptions, port parameters, ping targets, control descriptions, and other system information. Most provisioning will be done via the NetGuardian Web Interface. The NetGuardian also supports a limited TTY interface (used mostly for initial unit configuration. See the NetGuardian 420 Hardware User Manual for information about the TTY interface).

You can provision the NetGuardian IP Address either locally through the craft port or remotely through a LAN connection. However, to access the NetGuardian via LAN you must first make a temporary connection to the NetGuardian and assign it an IP address on your network. For more information, see the following section, "Connecting to the NetGuardian."

2.1 RADIUS Authentication

RADIUS authentication is now supported by any NetGuardian 420 platform.

RADIUS (Remote Authentication Dial In User Service) is an industry-standard way to manage logins to many different types of equipment in one central location. The NetGuardian connects to your central RADIUS server. Every time a device receives a login attempt (usually a username & password), it requests an authentication from the RADIUS server. If the username & password combination is found in the server's database, an affirmative "access granted" reply is sent back to the unit device, allowing the user to connect.

Also included in the reply are the user's individual access rights, so different users can be granted different privilege levels. If the user's login attempt is not found, a rejection is returned instead. RADIUS configuration for the NetGuardian will be achieved via the web browser interface or TTY interface. For details, see the separate user manuals for the NetGuardian 420 web browser.

3 Connecting to the NetGuardian

3.1 ... via Craft Port

NetGuardian Craft Port

The simplest way to connect to the NetGuardian is over a physical cable connection between your PC's COM port and the NetGuardian's craft port.

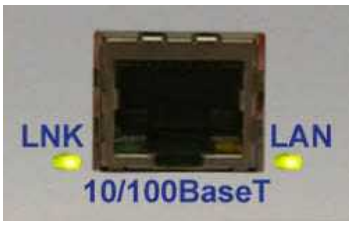
Use the DB9M-DB9F download cable provided with your NetGuardian to make a craft port connection.

Select the following COM port options:
• Bits per second: **9600**
• Data bits: **8**
• Parity: **None**
• Stop bits: **1**
• Flow control: **None**

The default password is 'dpstelecom'

You can perform basic configuration via the craft port — but if you like, you can connect via the craft port just to configure the NetGuardian's Private LAN IP address, and then do the rest of your configuration via a LAN connection.

3.2 ... via LAN



Ethernet port 1

You can also connect to the NetGuardian over a LAN connection. This is a very convenient way to provision multiple NetGuardian units at multiple locations.

To connect to the NetGuardian via LAN, all you need is the unit's IP address (Default IP address is 192.168.1.100).

Note: NET is defaulted to 192.168.1.100

If you have physical access to the NetGuardian, the easiest thing to do is connect to the unit through the craft port and then assign it an IP address. Then you can complete the rest of the unit configuration over a remote LAN connection, if you want. For instructions, see Section 12.1, "Connecting to the NetGuardian via Craft Port."

If you DON'T have physical access to the NetGuardian, you can make a LAN connection to the unit by temporarily changing your PC's IP address and subnet mask to match the NetGuardian's factory default IP settings. Follow these steps:

1. Look up your PC's current IP address and subnet mask, and write this information down.

2. Reset your PC's IP address to **192.168.1.200**.

3. Reset your PC's subnet mask to **255.255.0.0**. You may have to reboot your PC to apply your changes.

4. Once the IP address and subnet mask of your computer coincide with the NetGuardian's, you can access the NetGuardian via a Telnet session or via Web browser by using the NetGuardian's default IP address of **192.168.1.100**.

5. Provision the NetGuardian with the appropriate information, then change your computer's IP address and subnet mask back to their original settings.

4 Web Interface

Thet NetGuardian's Web Interface provides access to configure and monitor your NetGuardian.

4.1 Logging on to the NetGuardian

Your NetGuardian must first be assigned an IP address via the TTY interface before you will be able to connect via LAN/WAN using the Web Browser. If you have not yet done this, see **Ethernet Port Setup** in section (TTY Interface) of the hardware manual.

To connect to your NetGuardian:
1. Type the IP address of the NetGuardian in your web browser's address bar
2. Type your password in the password field that appears.

Note: The factory default password is **dpstelecom**.

Upon successfully logging in, you will be brought to the alarm summary screen in monitor mode.

The NetGuardian must be assigned an IP address before you will be able to connect via LAN/WAN using a Telnet client or a Web browser. To connect via LAN, the minimum configuration requires setup of the IP address and subnet mask. Minimum WAN configuration requires that the default gateway be set as well. Follow the instructions below to configure the NetGuardian's IP address, subnet mask, default gateway, trap address, SNMP port number, proxy base, and DHCP option.

4.2 Navigating the Web Interface

The links in the left pane of the web interface allow you to navigate to the monitoring or editing screen you wish to view.

Only links for the mode of operation you are in will be visible in the navigation pane.

The web interface has two modes of operation:
1. **Monitor Mode**, in which you may monitor your unit's alarms and issue controls.
2. **Edit Mode**, in which you may configure the unit

The unit defaults to Monitor Mode upon logging in. Clicking the green **Edit** button in the left pane of the web interface will take you to Edit Mode. From Edit mode, you may revert to Monitor Mode by clicking the blue **Monitor** button.

4.3 Edit Mode

Edit Mode provides the user access to all of the unit's configuration options.

If the **Edit** menu does not appear in the left frame after logging on, another station has already logged on as the primary user or you do not have access to edit the NetGuardian 420 database.

4.3.1 System Settings

From the System screen, you can enter basic user information for person responsible for the NetGuardian and configure basic settings for the unit.

System	
Name	NetGuardian420
Location	
Contact	
Phone	
Features	3E22-32-DEE4
Serial Number	0 (NOT SET)
Unit ID	0 **(Disabled)**
DCP Port	2001 UDP
DCP Protocol	DCPx
SCAN Unit ID	0 **(Disabled)**
SCAN Serial Port	0
Get history	Download
Advanced	
Silence non-reportable system alarms	☐
LCD Point Mode (uncheck for scroll)	☐

Submit Data

Field	Description
Name	Used to set the Name of the Name@Location email address of the person responsible for the NetGuardian. **Note:** Name is the portion of the email address before the @ character.
Location	Used to set the Location Name@Location email address of the person responsible for the NetGuardian. **Note:** Location is the portion after the @ character and should be a host name or an IP address.
Contact	Provide information for how to contact the person responsible for this NetGuardian.
Phone	Enter the contact's telephone number.
Features	Used for entering feature codes for future upgrade features. Do not enter anything in this field unless so instructed by DPS Telecom
Unit ID	Enter a user definable ID number for this NetGuardian (DCP Address).
DCP Port	Enter the DCP Port for this NetGuardian. (1-8 serial otherwise UDP/IP Port) **Note**: DCPe added to the list of DCP protocols.
DCP Protocol	Choose between DCPx, DCPf, or DCPe.
SCAN Unit ID	The NetGuardian's unit address if responding to a SCAN interrogator (such as FarSCAN). Valid values are 1-999. Use '0' to disable.
SCAN Serial Port	Select which serial port (1-4) on the NetGuardian will be used for SCAN communication.
Get history	Download the unit's history file.
Silence non-reportable system alarms	Check the box to silence alarms not applicable to your configuration. Example: This NetGuardian is not setup to send SNMP traps. Check this box to avoid receiving a failure notification for system alarm 13 (SNMP Trap not sent).
LCD Point Mode	Check this box to have the front panel LCD operate in "Point Mode". In this mode, only the points in alarm are displayed on the screen, instead of the full alarm descriptions. Point numbers for discrete alarms, analog threshold crossings, and latched relays will appear on the LCD.
DNP Address	This is the DNP3 polling address of the NetGuardian. This value can range from 0 - 65519.
DNP TCP Port	This option allows you to select the port for DNP3 polling over LAN. Set to "0" to disable DNP3

System fields

Once you've entered your information, click **Submit Data** to commit the data to the NetGuardian.

4.3.2 Defining SNMP Parameters

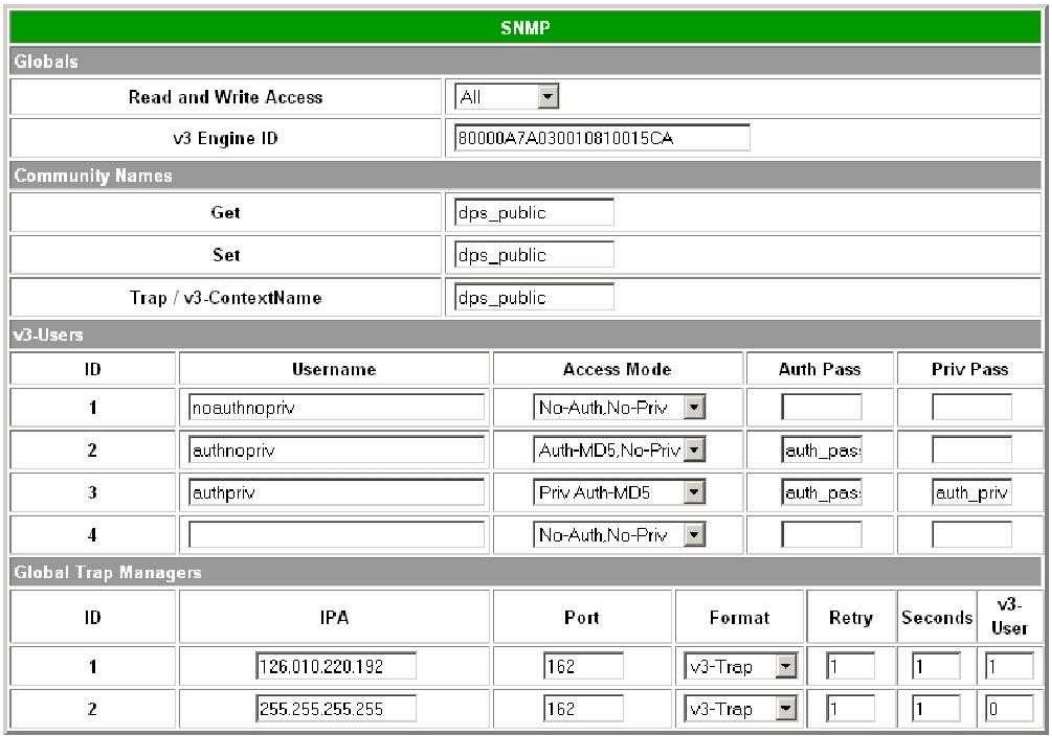
Access the **Edit** > **SNMP** link to view and edit your unit's SNMP settings.

To define your NetGuardian SNMP parameters:

1. From the **Edit** menu choose SNMP.
2. If you wish to restrict **Read and Write Access** to **All**, **v1-Only**, **v2c-Only,** or **v3-Only**, choose the appropriate option from the drop down dialog box..
3. Enter the community name for SNMP GET requests.
4. Enter the community name for SNMP SET requests.
5. Enter the community name for SNMP TRAPs.
6. If using SNMPv3, enter usernames and access information in the v3-User's section.
7. Define the **IP** address of your trap managers. Set to 255.255.255.255 if not using.
8. Define the **UDP** port set by the SNMP managers to receive traps; usually 162.
9. Select the Format in which you want your traps to be sent to your managers.

10. Click **Submit** to save your system information settings.

For more information on the above steps, see the field descriptions for the Edit SNMP screen in the table below.



SNMP Menu

Globals	
Read and Write Access	This field defines how the NetGuardian unit may be accessed via SNMP. This can be set to the following: • All- Allows you to read or write using any version of SNMP (v1, v2c, v3) • Disabled- Restricts all access to unit via SNMP • v1-Only- Allows SNMPv1 access only • v2c-Only- Allows SNMPv2c access only • v3-Only- Allows SNMPv3 access only
v3 Engine ID	Specifies the v3 Engine ID for your NetGuardian device. DPS recommends using the default ID for the unit, which is automatically generated by the unit. The default ID is generated according to RFC3411 and is based on the unit's unique MAC address and DPS Telecom's SNMP enterprise number. **Note:** To have the unit generate a unique Engine ID, clear the **v3 Engine ID** field and press the **Submit** key.
SNMP Communities	
Get	Community name for SNMP requests.
Set	Community name for SNMP SET requests.
Trap / v3 Context Name	Community name for SNMP TRAP requests. In SNMP v3, defines the context name field of a v3-Trap. **Note:** Make sure that your community strings match those used by the SNMP manager. In v1 and v2c, community strings are security passwords; if the strings do not match, the SNMP manager will not accept Traps from the NetGuardian. Community

	strings are case sensitive.
v3-Users	
ID	The user number designated for a v3-user. The NetGuardian supports up to four v3-User profiles.
Username	The name of the user for which an SNMPv3 management operation is performed.
Access Mode	This identifies the security modes available when SNMPv3 is utilized. The modes are as follows: • **No-Auth, No-Priv-** This access mode does not require authentication and does not require encryption. This mode is the least secure and is comparable to v1 and v2c. • **Auth-MD5,No-Priv-** Provides authentication based on the MD5 algorithm and does not require encryption. • **Auth-SHA,No-Priv-** Provides authentication based on the SHA algorithm and does not require encryption. • **Priv Auth-MD5-** Provides authentication based on the MD5 algorithm and provides DES 56-bit encryption based on the CBC-DES standard. • **Priv Auth-SHA-** Provides authentication based on the SHA algorithm and provides DES 56-bit encryption based on the CBC-DES standard.
Auth Pass	This field contains the password used with either MD5 or SHA authentication algorithms.
Priv Pass	This field contains the password used with privatization encryption.
Global Trap Managers	
IPA	Defines the SNMP trap manager's IP address. Set to 255.255.255.255 if not using.
Port	The SNMP port is the UDP port set by the SNMP manager to receive traps, usually set to 162.
Format	Select between v1-Trap, v2c-Trap, v2c-Inform, or v3-Trap.
Retry	Number of times the NetGuardian will resend SNMP v2c-Informs
Seconds	Time interval in seconds between attempts to resend SNMP v2c-Informs.
v3-Users	Association to the v3-User Table is made to specify the username, security mode, and passwords that should be used for sending a v3-Trap.

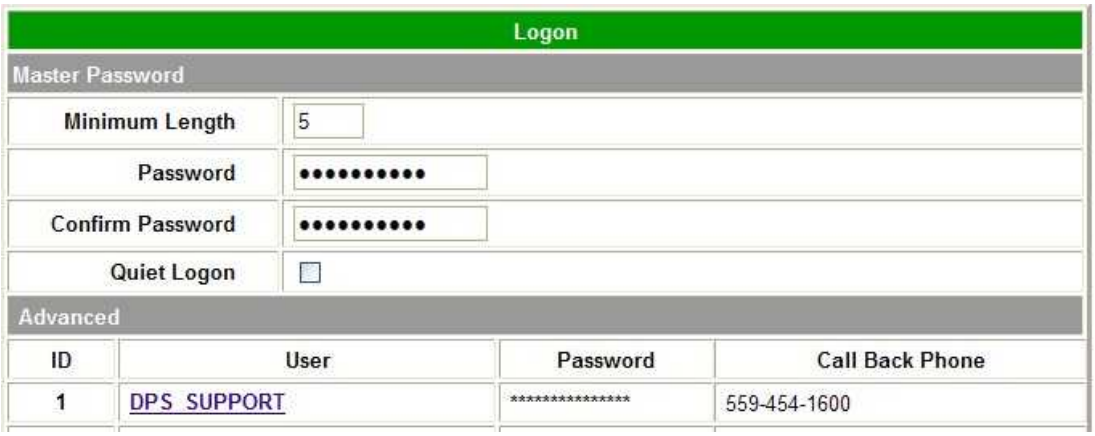
Fields in the Edit > SNMP settings

If you are using SNMPv3, any changes to the Engine ID or passwords will require a reboot. At bootup,you may experience a slight delay while the authorization and privatization keys update.

4.3.3 Controlling Access to the NetGuardian

4.3.3.1 Logon Settings

From the Logon screen, you can change basic logon information for the NetGuardian and create up to 16 unique user profiles each with individual rights to access the NetGuardian.



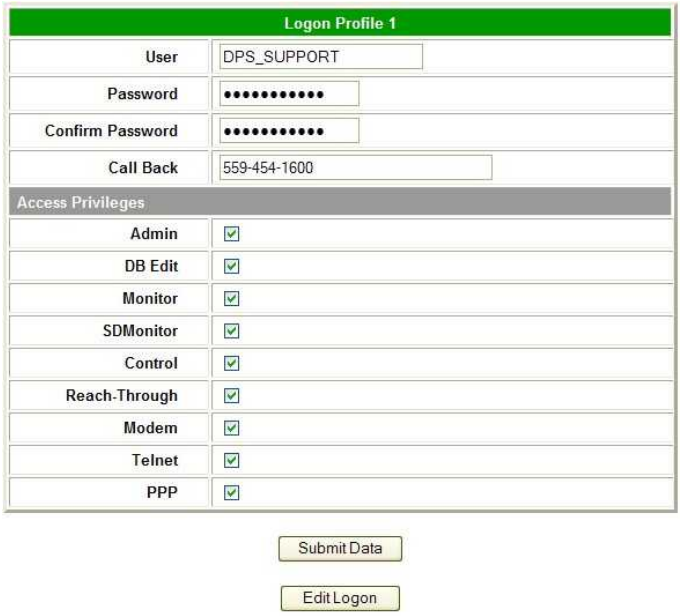
To change the Master password for the unit:
1. Set the minimum password length in the **Minimum Length** field.
2. Enter your new password and confirm the password in the appropriate fields.
3. Check the box if you wish to enable **Quiet Logon.** Quiet Logon keeps the user ID and Password fields from appearing when a user attempts to login to the TTY interface adding another layer of security should anybody mistakenly or maliciously attempt to access your NetGuardian.

To create or edit user profiles, click on the link in the **User** field. By default, the link will read **Available**.

4.3.3.2 Logon Profiles and Access Rights

The NetGuardian 420 allows you to setup up to 16 distinct user profiles and restrict and enable access rights to the NetGuardian based on those profiles.

Note: If you reach the Logon Profile screen by accident, you may return to the previous screen by clicking the back button on your browser, Logon from the navigation links in the left pane of the web interface, or by clicking **Edit Logon** at the bottom of the Logon Profile screen.



Logon Profile Configuration Screen

From the User Profile (1-16) screen, you can configure individual user profiles.

1. Enter a User ID in the **User** field
2. Enter and confirm the User's password in the appropriate fields
3. In the **Call Back** feature, enter the phone number the NetGuardian will use to call-back the user's modem.
4. Set **Access Privileges** for the user.

Profile Field	Access Privilege Descriptions
Admin	Enables the user to add/modify logon profiles and NetGuardian password information.
DB Edit	Enables the user to perform database edits in the NetGuardian.
Monitor	Enables the user to have Monitor access of the NetGuardian.
SDMonitor	Enables the user to view serial port buffers.
Control	Gives the user the ability to issue controls. This also automatically activates Monitor.
Reach-Through	Enables the user to achieve reach-through (Proxy) access.
Modem	Enables the user to call into the unit.
Telnet	Enables the user to have Telnet access to the unit.
PPP	Enables the user to access the PPP server with the user defined password.

Access Privilege descriptions

When you've finished creating or editing a user profile, click **Submit Data.**

4.3.3.3 Filter IPA Config and Operation

The Filter IPA table allows you to increase the NetGuardian's network security by allowing or blocking packets from specified IP addresses. Addresses which appear in the table will be processed by the NetGuardian. Defined IP addresses associated with network cameras or the network time server are automatically processed and will not be filtered out by this feature. Broadcast packets of 255.255.255.255 and ARP requests for the NetGuardian IP address are also not filtered.

1. From the **Edit** menu select **Filter IPA**.
2. A warning prompt will appear. Click **OK** to continue.

Filter IPA warning prompt

Select Filter IPA from the Edit menu to configure your Filter IPA table

3. Click the checkbox to **Enable IPA Table.**
4. Click the **Block These Addresses** if you wish to block only the addresses listed in the table. If you wish to allow only those IP Addresses listed in the table, do not check this box.
5. Enter the IP address of the machine(s) you would like to give access to the NetGuardian.
6. Click **Submit** to save the configuration settings.

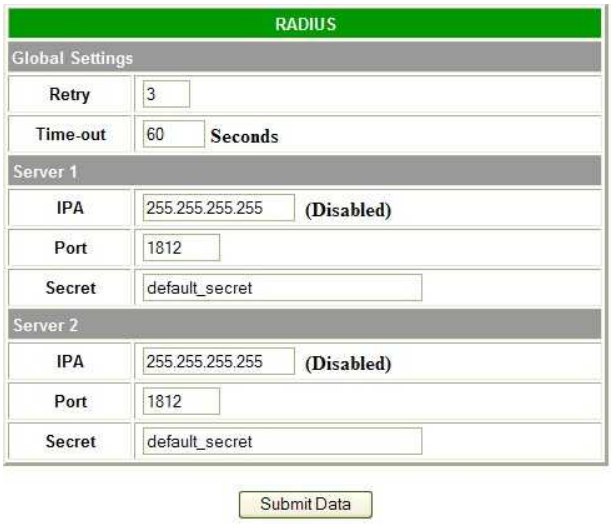
Hot Tip!

Entering a zero in any of the octet fields will declare that part of the octet to be a wildcard.

WARNING: Does not work with networks that assign IP addresses. Use the wildcard field to open an entire subnet.

4.3.3.4 Radius Authentication Settings

RADIUS (Remote Authentication Dial In User Service) is an industry-standard way to manage logins to many different types of equipment in one central location. The NetGuardian 420 connects to your central RADIUS server. Every time a device receives a login attempt (usually a username and password), it requests an authentication from the RADIUS server. If the username & password combination is found in the server's database, an "access granted" reply is sent back to the unit, allowing the user to connect.



RADIUS configuration screen

*RADIUS server prompt for Username **and** Password.*

To configure RADIUS authentication for your NetGuardian, input the appropriate information in the following fields:

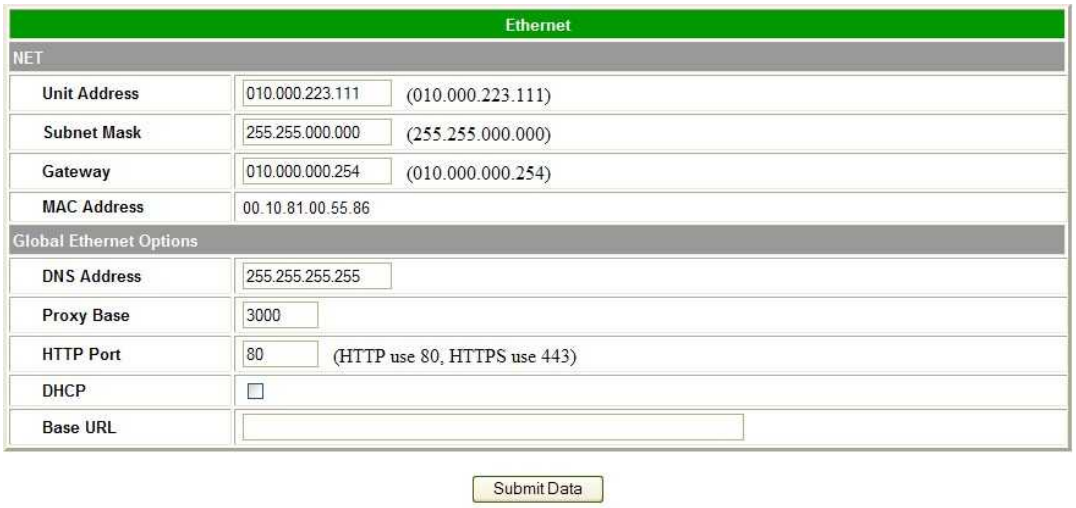
Global Settings	
Retry	Enter the number of times the RADIUS server should retry a logon attempt
Time-out	Enter in the number of seconds before a logon request is timed out
Servers 1 / 2	
IPA	Enter the IP address of the RADIUS server
Port	Port 1812 is an industry-standard port for using RADIUS
Secret	Enter the RADIUS secret in this field

After successfully entering the settings for the RADIUS server, the NetGuardian Web Browser will prompt users for both a Username and Password, which will be verified using the information and access rights stored in the RADIUS database.

RADIUS logons **are** case-sensitive. If the RADIUS server is unavailable or access is denied, the master password will work for craft port access only. Also, the "dictionary.dps" files (included on the Resource Disk) needs to be loaded on the RADIUS server for access-right definition. If RADIUS is enabled on the NetGuardian, local authentication will not be valid.

4.3.4 Ethernet Settings

From the **Ethernet** screen, you can configure information for your NetGuardian 420's ethernet ports.



To change Ethernet information, enter information in the appropriate fields and click **Submit Data**:

Field	Description
Unit Address	IP address of the NetGuardian
Subnet Mask	A road sign to the NetGuardian telling it whether your packets should stay on your local network or be forwarded somewhere else on a wide area network.
Default Gateway	An important parameter if you are on a network that is connected to a wide area network. It tell the NetGuardian which machine is the gateway out of your local network. Set to 255.255.255.255 if not using a gateway.
MAC Address	Hardware address of the NetGuardian (not editable, for reference only).
DNS Address	IP address of the domain name server. Set to 255.255.255.255 if not using.
Proxy Base	Defines the NetGuardian TCP ports used by data ports 1-8 (serial ports). Data port 1 receives the port number entered here. Data ports 2-8 receive the next 7 port numbers in ascending order. (i.e. TCP port 3000 through port 3007 at the IP address of the NetGuardian).
HTTP Port	Enter 80 if using HTTP, 443 if using HTTPS
DCHP	Toggles the Dynamic Host Connection Protocol On or Off
Base URL	The Base URL is the destination website address or the alarm point description hyperlinks. See Section "Using the Base URL Field."

Field Descriptions on the Ethernet Screen

4.3.4.1 Using the Base URL Field

The NetGuardian allows users to turn each alarm point description into a hyperlink. When utilized, the alarm description for each alarm point that appears in the monitor mode (for base alarms, ping targets, or system alarms) becomes a link that directs technicians/managers to specific Web pages or to other files viewable by a Web browser. This allows users to create easily accessible informational databases on how to handle specific alarm conditions or other instructions. The hyperlinked page or file will be displayed in the main window frame of the NetGuardian Web browser. Follow the directions below to create hyperlinks for alarm point descriptions.

1. From the **Edit** Menu select **Ports**. Scroll down to the **Base URL** field, see Figure 2.5.

2. Enter your base URL (e.g. **http://www.dpstelecom.com**). The NetGuardian creates the links from the alarm point descriptions based on the URL. Once the base URL is entered, the NetGuardian automatically attaches a unique suffix to each alarm point. For example, if the base URL is **http://www.dpstelecom.com** the link for the base alarm at point 1 would be **http://www.dpstele.com/base1.html**, Base Alarm Point 2 would be **http://www.dpstele.com/base2.html**, and so on.

3. To add a suffix other than html to the hyperlinks, insert the text **&pntID;** into the base URL. This allows the user to specify the extension. For example, if the base URL is **http://www.dpstele.com/&pntID;.pdf**, the link for the base alarm at point 1 would be **http://www.dpstele.com/base1.pdf/.**

Hot Tip! Any file type that is viewable in your Web browser (e.g. word document, PDF, txt, etc.) is a linkable file.

4. The same link structure applies to the Ping Alarms, System Alarms, and Analog Alarms fields. See Table 2.D for specific URL extension link information.

Alarm Page	Base URL web page link*
Base Alarms	Base1.html - Base20.html
Ping Alarms	Ping1.html - Ping32.html
System Alarms	System1.html - System64.html
Analog Alarms	Analog1.html - Analog8.html

Table 2.D. *Specific link extensions*

* Using the **&pntID;** code in the base URL enables you to link to any file type viewable in your Web browser.

4.3.5 Configuring Ports

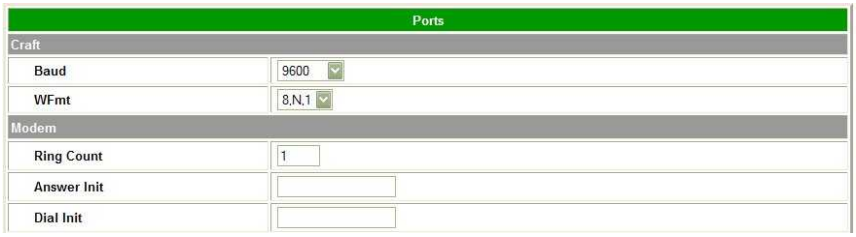
You'll configure your unit's modem and terminal server ports from the **Edit** menu > **Ports** screen.

4.3.5.1 Modem Settings

To configure your NetGuardian for PPP or Dial-up access, you may need to enter information in the Modem fields on the **Ports** screen.

To configure the modem port settings.

1. In the **Ring Count** field enter the number of rings before answering. (Default = 1)
2. The **Dial Init** and the **Answer Init** fields can be used if any other modem initialization settings need to be set. For example, the modem can be set to ignore the dial-tone by entering a character code in either the Answer Init (into the NetGuardian) or the Dial Init (out from the NetGuardian).
3. Click **Submit Data** to save your modem port settings.



Change the modem settings from the Edit menu > Ports screen

Command	Description	
A	Answer command	
Bn	Select communications standard	
D	Dial	
	P	Pulse dial
	T	Tone dial
	R	Connect as answering modem
	W	Wait for dial tone
	,	Pause for the duration of S8
	@	Wait for silence
	!	Switch hook flash
	;	Return to the command state
En	Command echo	
Hn	Switch hook control	
In	Modem identification	
Ln	Speaker volume	
Mn	Speaker activity	
On	Online	
Qn	Responses	
Sr?	Interrogate register	
Sr=n	Set register value	
Vn	Result codes	
Xn	Result code set	
Z	Reset	

Modem commands may vary. See your modem user manual for commands specific to your modem.

If you set the ring count to 0, the NetGuardian will still be able to dial out for notifications, but will NEVER answer an incoming call.

4.3.5.2 Data Port Settings

Data port settings can be configured in the **Edit** menu > **Ports** screen.

To configure your data ports:

1. From the **Ports** window, scroll down to the **Data Ports** section.
2. Enter a description for each port with a connected device. You can configure baud rate, word format, and to ignore or remove CR/LF (carriage return/line feed) characters in either the input or output data stream for each port.
3. Click on the link in the **Type** field to choose the data port type. Advanced settings - baud rate, WFmt, CR/LF Mode, and RTS Times - can also be configured when you select an appropriate data port type. (See the following section for details.)
4. Under the options heading, enter in the appropriate number of GLDs (1-12) or NetGuardian Discrete Expansions (1-3) installed. Entering zero disables these options. If connecting more than 3 GLDs, the baud rate must be set to 9600.

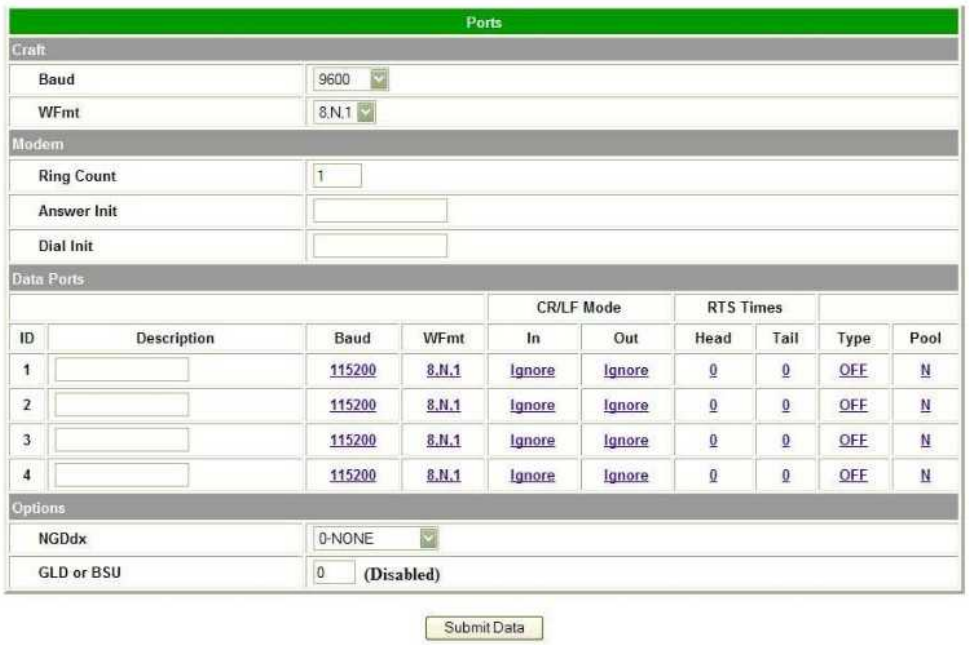
Note: Your NetGuardian's expandability may depend on your unit's availability of RS-232 and RS-485 ports. Normally, NetGuardian expansion units are installed on port 3.

Hot Tip!

NGDdx is an abbreviation for "NetGuardian Expansion." Expansion units enable you to scale from 20 base alarms and 4 base relays to a maximum of 164 alarms and 28 relays. In addition to standard

DX units, you can use the NG480 (configured as a DX) as an expansion unit. The NG480 will give you an additional 80 alarms and 4 relays. You also have the option of adding the NetGuardian E16 DX, giving you 16 more alarm points and 16 more controls.

Note: You can have either 1 NG480 or 1 to 3 NGDdx units. You cannot have both at the same time.



Configure the data port parameters from the Ports screen

4.3.5.2.1 Data Port Types

Each of the NetGuardian's 8 data ports can be configured with different functions:

TCP
Makes reach-through available at TCP ports (Telnet).

RTCP
Raw TCP (negates Telnet negotiation). The RTCP (Raw TCP Data Port) negates Telnet negotiation and will allow all characters (including [FF]) to pass straight through from IP to serial or serial to IP.

HTCP
High speed TCP port (only 1 HTCP port is available). An HTCP, or High-speed TCP data port, which operates in Telnet Raw mode, is essentially the same as a RTCP port except that it has better performance and is more robust when transferring streaming data (like a data file). Unlike RTCP ports, the user can only assign one port as HTCP.

PTCP
Permanent TCP (during a proxy connection, the connection will never time out).

SPS8
Serial Port Switch 8. The Serial Port Switch 8 is an external device hub that allows the connection of up to eight serial port devices to a single NetGuardian data port. When an SPS8 port is selected, the NetGuardian will negotiate the connection for the user. To break the SPS8 connection and return to the normal NetGuardian interface, type @@@ and press Enter.

Hot Tip!

SPS8 ports do not support direct proxy. You must navigate via the TTY menu. If interfacing a T/Mon to SPS8 through a NetGuardian, set the port type to **TCP**.

UDP
Makes reach-through available at UDP ports (up to 4 UDP ports available).

CHAN
Creates logical bridge to odd/even partner. The odd/even partners are pairs of 1-2 and 3-4. This allows the NetGuardian to view communication traffic in either direction when inserted in the serial communication path between two devices. This is accomplished by going "in" to the NetGuardian with one device and "out" to the other device from the odd/even partner port. Data is passed directly from one port to its odd/even partner without being altered in any way. This ability greatly simplifies troubleshooting communication problems by isolating the non-communicating device.

When **CHAN** is selected, the NetGuardian automatically activates the odd/even partner as **CHAN**. Baud rates for the odd/even pairs can be set to any available rate except for any combination of 19200 and 38400 between the two ports. Use "SPO" filter debug to analyze protocol traffic in a terminal.

CRFT
Causes the data port to have the same functionality as the front panel craft port.

CAP
Allows the user to capture debug information. The debug information is stored in the receive queue of the NetGuardian (See section "Monitoring Data Port Activity" for more information). This is used primarily as a troubleshooting feature.

ECU
For use if an ECU is connected to this port (see section "Building Access Controller").

SCAN
Creates logical bridge between all ports set up as SCAN. When data comes in one port, it will forward out all other SCAN ports. The SCAN port defined under SCAN Serial Port will be the only port that will respond to scan polls. The rest will only forward data.

MBSI
Allows the use of the optional Cellguard Battery Monitoring System. When **MBSI** is selected, the NetGuardian automatically sets the Description and Baud settings.

4.3.5.2.2 Direct and Indirect Proxy Connections

The NetGuardian supports both direct and indirect proxy connections. In a direct proxy connection, the user enters an IP address and port number to Telnet directly to a TCP serial port. In an indirect connection, the user navigates the TTY menu to select a proxy port. Because the TTY interface is password protected, thus providing greater security, indirect connections are preferred. Some users prefer to disable direct proxy for all connections in order to enforce the password security provided by the TTY interface.

To disable proxy connections you may either:
1. Set the proxy port to an uncommon value.
2. Set the data ports to **off** in the **Type** field. When set to **off**, the port is no longer associated with a TCP socket, which effectively disables the port from direct access. This is a more secure and convenient method of disabling proxy access.

4.3.6 Configure Alarm Notifications

The **Edit** menu > **Notification** screen allows you to configure methods for alarm notification. The following sections will explain how to configure individual methods for alarm notification.

Multiple notification methods and group assignments are configured from the Notification screen

Pager Format	Description
Alphanumeric Paging	Format recognizes numbers, letters, and symbols. Can receive information including alarm point addresses, alarm descriptions, time of alarms, and alarm state a.k.a TAP.
Numeric Paging	Format recognizes numbers only. Message is reported in the following order: [IP]*[Display] [Address]*[State]. When read on the pager it appears as follows: 192.168.1.100 99.01.01.01
Text Paging	Can receive information including alarm point addresses, alarm descriptions, time of alarms, and alarm state. May be accessed using a terminal.
T/Mon Paging	The T/Mon may receive alarm information from the NetGuardian via dial-up and display alarm information, alarm description, and threshold status. (Only activates if DCP Poller is inactive)
TCP (ASCII) Paging	Alarm status notification via multiple TCP or HTCP ports. Connection from a higher level master must be established for alarm notification.
Email/SMTP Paging	Provides alarm notification via email, with a description similar to the Alphanumeric pager.
SNMPv1 Paging	May send alarm status to multiple SNMP managers, including the SNMP that alarms are reporting to. The SNMP trap format is v1.
SNMPv3 Paging	May send alarm status to multiple SNMP managers, including the SNMP that alarms are reporting to. The SNMP trap format is v3.
Num17 Paging	Provides alarm notification in a manner similar to that of the Numeric pager. However, Num17 eliminates the (*) symbol from the page. Message is reported in the following order: [IP] [Display][Address][State]. When read on the pager it appears as follows: 192.168.1.100 99.01.01.01
Echo	Allows an alarm point on the NetGuardian to operate a control on another SNMP-enabled, DPS Telecom RTU.

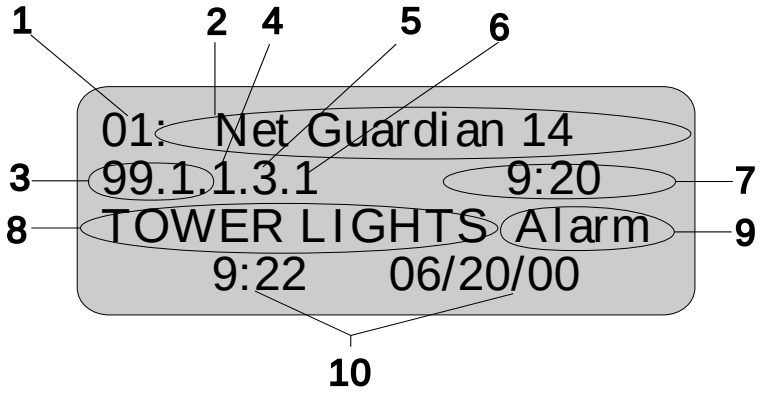
Notification formats

Many cellular carriers offer a TAP gateway to SMS. Check with your carrier to see if you can use a dial-up connection to send SMS messages to your phone. This creates an out-of-band path in the case of a network failure.

4.3.6.1 Alphanumeric Pager Setup

The alpha numeric pager can receive text messages including alarm descriptions, time of occurrence, and point addresses.

Use the following steps to configure the alpha numeric pager settings:
1. Under the **Type** column, select type **Alpha** from the drop-down menu, see Figure 2.14.
2. Enter the phone number of the Alpha numeric pager under the **Phone/Domain** heading.
3. Enter a personal identification number under the **PIN/Rcpt/Port** heading.
4. Set the pager data rate (i.e. 300, 1200, 2400 or 9600). The default baud is 1200.
5. Select a pager word format (Data Bits, Parity, Stop Bits). The default setting is 7,Even,1.



1. Number of pages
2. Unit name
3. Port # and Address
   (Applicable to T/Mon and IAM only)
4. Display number
5. Alarm point number
6. Alarm status: 1=alarm, 0=clear
7. Time Net Guardian sent page
8. Alarm point description
9. Alarm status
10. Time & date pager received

Alpha numeric pager description

4.3.6.2 SNPP Notification Setup

Alpha numeric pagers can receive text messages including alarm descriptions, time of occurrence, and point addresses using SNPP.

Use the following steps to configure the alpha numeric pager settings:.
1. Under the **Type** column, select type **SNPP** from the drop-down menu.
2. Use the **Phone** field if a login username and password are required. They must be separated by a colon and be no longer than 29 characters combined. Otherwire, leave this field blank.
3. Enter the numeric pager number under the **PIN/Rcpt/Port** heading.
4. Under the IPA field, enter the static IPA of the SNPP server. Port automatically defaults to 444.

4.3.6.3 Numeric Pager Setup

The numeric pager can receive point addresses of alarms.

Use the following steps to configure the numeric pager settings:
1. Under the **Type** column select **Numeric** from the drop-down menu.
2. Enter the phone number of the numeric pager under the **Phone/Domain** heading, followed by 7 commas (e.g. **555-1212,,,,,,,**). Placing a comma after the phone number initiates a two second pause (per comma). This allows enough time for the pager to answer before the NetGuardian sends the alarm information.

The Baud/Wfmt and IPA fields are not used from numeric pager types.

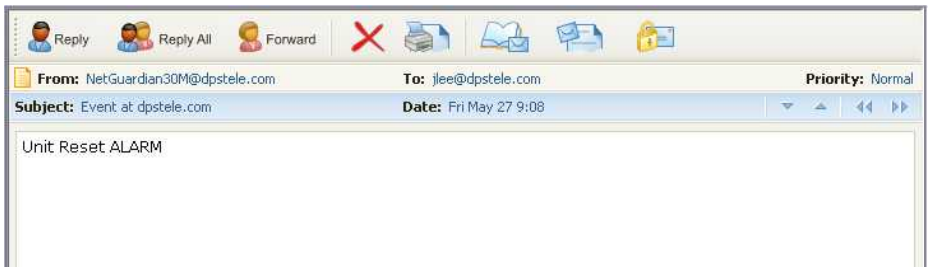
4.3.6.4 Text Paging Setup

Text pages can receive information including the point addresses of alarms, the alarm description, time of the alarm, and state (alarm or clear). The text pages may be viewed using a terminal such as HyperTerminal.

Use the following steps to configure the text paging settings:
1. Under the **Type** column select **Text** from the drop-down menu.
2. Enter the phone number of the text paging device under the **Phone/Domain** heading.
3. Set the pager data rate (i.e. 300, 1200, 2400 or 9600). The default baud is 1,200.
4. Select a pager word format (e.g Data bits: 7 or 8, Parity: none (N), even (E) or odd (O), and Stop Bits: 1). The default setting is 7, Even,1.

To set up text paging from T/Mon see the T/Mon user manual.

4.3.6.5 Email Notification Setup



Email notification from the NetGuardian

The email pager provides alarm notification via email, with a description similar to that of the alpha-numeric pager.

1. Use the following steps to configure the email notification settings:
2. Under the **Type** column, select **Email** from the drop-down menu.
3. Enter the domain name of the email address under the **Phone/Domain** heading. This is the portion of an email address after the @ symbol in **name@domain.com**.

Note: There cannot be any spaces in the domain name.

4. Enter the email recipient's user name under the **PIN/Rcpt/Port** heading. This is the portion of an email address before the @ symbol in the **name@domain.com.**

Note: There cannot be any spaces in the recipient's user name

5. Enter the IP address of the SMTP mail server in the **IPA** field.
6. Click **Submit Data** to save your email notification settings.
7. Click on the **System** link. If you have not done so, set up the "from" address sent in email messages sent from the NetGuardian by entering the appropriate information in the **Name** and **Location** fields. The email notification from the NetGuardian will appear as follows: **name@location**.

Hot Tip!

Most email programs can be set to perform a certain action if a message is received from a specified address, such as moving the message to a special Alarms folder. Use the address entered in the **Systems** screen for such purposes.

8. Click **Submit Data** to save your new system information settings.

The "from" email address is for identification purposes. It is not necessarily a real email address that can

be replied to unless one is entered.

4.3.6.5.1 SMTP Support & POP3 Authentication Support

This section contains steps to configure your NetGuardian for SMTP and POP3 Authentication support.

Unauthenticated Emails:
The configuration setup will not change. If you want the email to send to **user@yourdomain.com**, use the following steps:
1. In the **Phone/Domain** field type **yourdomain.com**.
2. In the **Pin/Rcpt** field type **user**.
3. Click **Submit Data** to save the configuration settings.

The "from" location is specified by the system info name and location strings, which also do not change. Use the following steps to configure the "from" location **from@fromdomain.com:**
1. Click on the **Edit** menu > **System** link.
2. In the Name field type **from**.
3. In the **Location** field type **fromdomain.com**.
4. Click **Submit Data** to save the new system information settings.

Note: SMTP authentication is not supported.

Authenticated Emails (POP3 only):
If you want to send an authenticated email to **user@yourdomain.com** from **from@fromdomain.com**, password **= authentic**, then use the following steps:
1. In the **Pin/Rcpt** field type **authentic** (the password).
2. In **Phone/Domain** field, type **from@fromdomain.com**
3. Click **Submit Data** to save your changes.
4. Click on the **Edit menu > System** link for **To** information.
5. In the Name field type **user**.
6. In the **Location** field type **yourdomain.com.**
7. Click **Submit Data** to save the new system information settings.

4.3.6.6 SNMPv1 Paging Setup

The SNMPv1 paging feature allows you to view alarm status from multiple SNMP managers in addition to the global managers, which are setup from the SNMP menu.

Use the following steps to configure the SNMP paging settings:
1. Under the **Type** column, select **SNMPv1** from the drop-down menu.
2. Set the SNMP port under the **PIN/Rcpt/Port** heading, usually 162.
3. Enter the IP address of the SNMP manager in the **IPA** field.

4.3.6.7 SNMPv3 Paging Setup

The SNMPv3 paging feature allows you to view alarm status from multiple SNMP managers in addition to the global managers, which are setup from the SNMP menu.

Use the following steps to configure the SNMP paging settings:
1. Under the **Type** column, select **SNMPv3** from the drop-down menu.
2. Enter a v3-User ID under the v3-User heading. The values can range from 0-4. These values refer to the **v3-Users** table in the SNMP page. The v3-User association is used to specify username, security mode, and

passwords that should be used for sending a v3-Trap.
3. Set the SNMP port under the **PIN/Rcpt/Port** heading, usually 162.
4. Enter the IP address of the SNMP manager in the **IPA** field.

4.3.6.8 TCP Paging Setup

<MSG_BEG 00001>
VID : DPS Telecom
FID : NetGuardian SNMP v5.0B.3206
SITE: Yale Office
PNT : 99.01.01.01
DESC: RECTIFIER 1
STAT: CLEAR
DATE: 01/01/2001
TIME: 12:17:02
<MSG_END 00001>

Fig. 2.17. *Example TCP message*

Heading	Description
MSG_BEG MSG_END	Sequential message number used to group the message and detect missing messages (e.g. 00001, 00002, etc…).
VID	Vendor ID
FID	NetGuardian Firmware ID.
SITE	NetGuardian system name.
PNT	Point ID (port.address.display.point). See Appendix A for display mapping.
DESC	Description set forth in the Alarm parameters.
STAT	Status of the alarm (Clear or Alarm).
DATE	Date the alarm occurred.
TIME	Time the alarm occurred.

Table 2.H. *TCP alarm message field descriptions*

The NetGuardian offers alarm status notification via multiple TCP ports. When an alarm condition occurs, an alarm condition formatted according to Figure 2.17 will be sent to the specified TCP points for use by a higher level master. This connection must be established by the master. Any applicable alarm activity occurring prior to an established connection will be discarded.

Use the following steps to configure the TCP paging settings:
1. Under the **Type** column, select **TCP** from the drop-down menu.
2. In the **Pin/Rcpt/Port** field enter the NetGuardian TCP port number where alarm messages will be sent (from 1 to 65,536). Multiple ports can be defined by defining multiple pager IDs as TCP pagers and then entering the desired ports.
3. The TCP message can be viewed by a Telnet session by connecting to the NetGuardian's IP address and the TCP port entered in this screen. For example, Telnet to **126.10.220.199 5000** if port 5000 is selected and 126.10.220.199 is the unit's IP address. See Figure 2.17 for an example message and Table 2.H for TCP message format information.

4.3.6.9 NUM17 Pager Setup

The Num17 Pager can receive point addresses of alarms. It is quite similar to the Numeric Paging format in the way it receives and reports alarms. However, on certain pager systems the symbol * will cause a freeze or other undesirable situations. Num17 eliminates the * symbol from the pages it receives and reports alarms as a 17-digit series of numbers.

User the following steps to configure Num17 Pager settings:
1. Under the **Type** column select **Num17** from the drop-down menu.
2. Enter the phone number of the numeric pager under the Phone heading, followed by commas (for example **555-1212,,,,,,,**). Placing a comma after the phone number initiates a two second pause per comma. This allows enough time for the pager to answer before the NetGuardian sends the alarm information. The **Baud/Wfmt** and **IPA** fields are not used from Num17 pager types.
3. Click **Submit Data** to save the configuration settings.

4.3.6.10 Echo Notification Setup

An Echo notification type enables an alarm point on the NetGuardian to operate a control on another SNMP remote from DPS.

1. From the Notification devices tab, choose **Echo** as the notification Type.
2. Enter the Community Set Name in the Phone/Domain field.
3. Enter the Relay Point Reference in the Pin/Pcpt/Port field. This is entered as:[Port].[Address].[Display].[Relay Point] NOTE: The Port will always be 99, and the address is always 1. Therefore, your entries will always begin with 99.1.
4. The Baud/Wfmt and Group fields will not be used.
5. Under IPA, enter in the IP address of the SNMP-enabled, DPS remote you are setting up to operate its relay.

NOTE: If more than one point is mapped to Echo notification, the OR'ed logic is applied.

4.3.7 Defining Point Groups

Each NetGuardian Alarm point can be assigned to one of eight groups, which are identified with a user-defined label. Once the point groups are defined, the Point Group IDs can be used to group base and system alarms, see section "Configuring Base Discrete Alarms."

Use the following steps to define alarm messages for alarm point groups:
1. To define the point groups, select **Point Group** from the **Edit** menu.
2. Then enter the appropriate descriptions in the **Description**, **When Set** and **When Clear** fields for each point group.
3. Click **Submit Data** to save the point group settings.

Point Groups			
ID	Description	When Set	When Clear
1	Doors	Open	Closed
2	Generators	On	Off
3			
4			
5			
6			
7			
8			

Submit Data

Define the Alarm and Clear messages for up to eight different point groups

4.3.8 Configuring Base Discrete Alarms

All of the NetGuardian's 20 discrete alarms are configured from the **Edit** menu > **Base Alarms** screen. Descriptions of the alarm point, polarity (normal or reversed), whether to use an SNMP Trap or not, and the primary and secondary pager used to report the alarm, and group assignments, are configured in this screen.

Use the following steps to configure base discrete alarm settings:

1. From the **Edit** menu select the **Base Alarms** link.
2. Enter a description for each discrete input alarm being used in the **Description** field.
3. Under the **Polarity** column, you can choose to reverse the polarity or leave it normal. If you select **Normal**, a contact closure is an alarm. If the Reverse option is selected, the alarm is clear when closed.
4. Select the **Trap** check box to send an SNMP trap for that alarm point in the event of an alarm condition. Leave the box blank if you do not wish the NetGuardian to send an SNMP trap.
5. Set the primary and secondary pagers with a pager ID from your Notification list. (See Section "Configure Notification Methods" for more information.) The NetGuardian will notify both the primary and the secondary notification device when point status changes (both alarm and clear).
6. Under the **Group** column enter the appropriate point group ID. (For more information, see "Defining Point Groups.")
7. Under the **Qual** column click the **None** link to configure an event qualification time setting for the alarm point. The **Event Qual** screen will appear. For more information on the Qual field, see the section titled, "Event Qualification Timers".
8. Click **Submit Data** to save base alarm configuration settings.

The pager device can be an ASCII terminal, T/Mon element manager, email, or multiple SNMP managers as well as an alpha or numeric pager.

Base Alarms

				Pagers			
ID	Description	Polarity	Trap	Pri	Sec	Group	Qual
1	Equip Major	Normal	☑	0	0	1	None
2	Equip Minor	Normal	☑	0	0	1	None
3	INTRSN	Normal	☑	1	2	1	None
4	BEACON	Normal	☑	1	2	2	None
5	SIDE LT	Normal	☑	1	2	3	None
6	HMDTY	Normal	☑	1	2	3	None
7	H20 LEAK	Normal	☑	1	2	3	None
8	FIRE	Normal	☐	1	2	3	None
9	TXAACTIVE	Normal	☐	4	1	2	None
10	TXBACTVIE	Normal	☐	4	1	2	None
11	DELAYED	Normal	☐	0	0	3	None

Configure the 20 discrete alarms from the Base Alarms screen

4.3.9 Configuring System Alarms

System Alarms

			Pagers		
ID	Description	Trap	Pri	Sec	Group
17	Timed Tick	☐	0	0	1
18	Exp.Module Callout	☐	0	0	1
19	Network Time Server	☐	0	0	1
20	Accumulation Event	☐	0	0	1
21	Duplicate IP Address	☐	0	0	1
33	Unit Reset	☐	0	0	1
36	Lost Provisioning	☐	0	0	1
37	DCP Poller Inactive	☐	0	0	1
38	NET 1 is not Active	☐	0	0	1
40	NET Link Down	☐	0	0	1
41	Modem not Responding	☐	0	0	1
42	No Dialtone	☐	0	0	1
43	SNMP Trap not Sent	☐	0	0	1

SNMP Traps and primary or secondary pager devices can be selected for each system alarm

The **System Alarms** screen allows you to individually set the notification method for each system alarm. See the "System Alarms Display Map" in the Reference Section for detailed descriptions of System Alarm Points.

To configure your system alarm notification settings:

1. From the **Edit** menu select the **System Alarms** link.
2. Check the **Trap** box to send an SNMP trap for that alarm point.
3. Set the primary and secondary pagers with a Notification ID from your defined notification list. (See Section "Configure Alarm Notifications" for more information.)

Note: The NetGuardian will notify both the primary and the secondary notification device when point status changes (both alarm and clear).

4. Under the **Group** column enter the appropriate Point Group ID, see section.
5. Click **Submit Data** to save the configuration settings.

4.3.10 Setting Ping Targets

Fig. 2.23. *Configure the ping target parameters from the Ping Info screen*

Each of the 32 ping targets can be provisioned with a description, an IP address, primary and secondary notification devices, and an option to verify connection using SNMPv1 GET.

Note: To set ping response and fail times, see the section titled **Setting System Timers**.

To configure the ping targets:

1. From the **Edit** menu select **Ping Targets.**.
2. In the **Description** field, enter a description of the device to be pinged.
3. In the **IP Address** field enter the IP address of the device to be pinged.
4. Under the **Trap** column check the box to designate that an SNMP trap will be sent when an alarm condition exists. Leaving the box blank indicates that an SNMP trap will not be sent when an alarm condition exists.
5. Set the primary and secondary pagers with a Notification ID from your defined Notification list.

Note: The NetGuardian 420 will notify both the primary and the secondary notification device when point status changes (both alarm and clear).

6. Under the **Group** column enter the appropriate Point Group ID.
7. Under the **SNMP** column check the box to enable pinging of the device using SNMPv1 GETs instead of traditional ICMP. If the box is not checked, the device will be pinged using traditional ICMP.
8. Select the OID to retrieve with the SNMP GET. The following is a list of available MIB variables in the **System OID** field:

   sysDescr, OID .1.3.6.1.2.1.1.1.0
   sysObjectID, OID .1.3.6.1.2.1.1.2.0
   SysUpTime, OID .1.3.6.1.2.1.1.3.0

9. In the **Community** field enter the community string for the SNMP GET request.The community string must match the community string configured in the target device.
10. Click **Submit Data** to save the configuration settings.

4.3.11 Setting the Accumulation Timer

Define the Accumulation Timer settings to send an Accumulation Event alarm

The NetGuardian's **Accumulation Timer** keeps a running total of the amount of time a point is in an alarm state to send an Accumulation Event system alarm once the total time exceeds a defined threshold.

To configure the accumulation timer settings:

1. Go to the **Edit** menu and select the Accum._Timer link.
2. In the **Display Reference** field enter the display number to be monitored.
3. In the **Point Reference** field enter the alarm point to be monitored.
4. In the **Event Threshold** row enter the appropriate running total days, hours and minutes a point is in a alarm state in order to send an accumulation event system alarm.
5. Click **Submit Data** to save the configuration settings.

Accumulated Time indicates the number of days, hours, and minutes the timer's been running. **Accumulated Since** indicates when the Timer started.

Hot Tip!

Only check the **Reset Accumulation Timer** box if you wish to reset the timer.

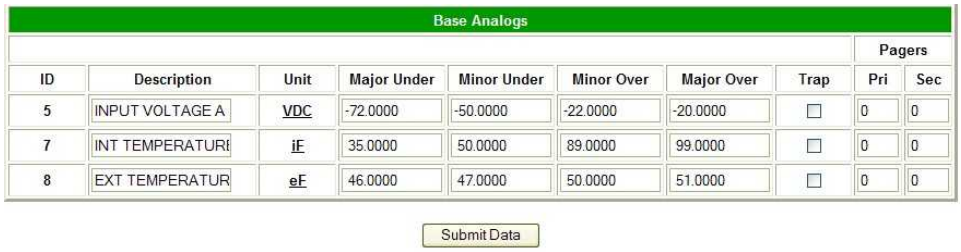
The **Point Description, Point Status, Accumulated Time, and Accumulated Since** fields are not configurable. These fields will show the corresponding data of the point you configure for the accumulation timer after you have hit the **Submit Data** button.

4.3.12 Configuring Analogs

Each of the NetGuardian 420's analog channels must be individually configured to monitor data. The ADCs (analog to digital converters) support a range of –70 to 94 VDC. There are four alarm trip points (thresholds) in ascending order: major under, minor under, minor over, and major over. You can choose the values for each of the thresholds on all channels. As with the other alarms, you can designate whether or not to send an SNMP trap when a threshold is crossed. The primary/secondary pager used to report the alarm is also set here. The thresholds must be set from **Under** to **Over** in either ascending or descending potential (or current) order. Thus the settings of –10, –5, 5 and 10 corresponding respectively to major under, minor under, minor over and major over is valid.

The analog alarms are set to measure voltage by default and the thresholds are reported as "native units." For example, you may set Channel 3 to measure outside temperature. If you were using a sensor with a measurable temperature range between –4° to 167° Fahrenheit (–20° to 75° Celsius). The voltage for that channel varies between 1 and 5 VDC for that sensor, which is to be reported as ° Fahrenheit (native units) where 1 volt represents –4° Fahrenheit and 5 volts represents 167° Fahrenheit.

To change any one analog alarm to measure current instead, a dip switch setting must be changed. Refer to the NetGuardian hardware user manual for details on jumper locations and positions. The jumper inserts a 250 ohm shunt resistor across the input to convert the sensors current output to volts. Use ohms law to find the voltage drop across the 250 ohm shunt resistor (multiply the current by the resistance 250 ohms). Please refer to the operation manual for your sensor to determine any other conversion factors. This will allow you to correctly set the thresholds for **over** and **under** conditions.



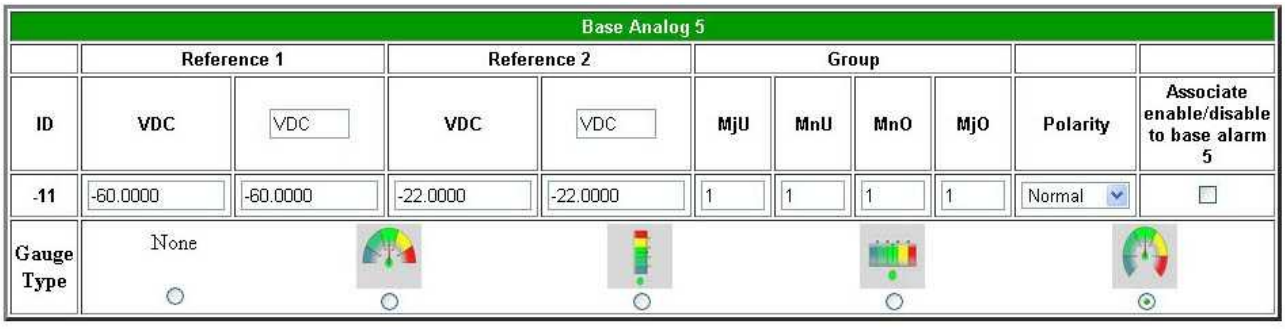
Base Analogs

								Pagers	
ID	Description	Unit	Major Under	Minor Under	Minor Over	Major Over	Trap	Pri	Sec
5	INPUT VOLTAGE A	VDC	-72.0000	-50.0000	-22.0000	-20.0000	☐	0	0
7	INT TEMPERATURE	iF	35.0000	50.0000	89.0000	99.0000	☐	0	0
8	EXT TEMPERATUR	eF	46.0000	47.0000	50.0000	51.0000	☐	0	0

Submit Data

The Analog Parameters can be viewed and changed from the Analogs screen

NOTE: To configure the gauge type, select the link in the 'Unit' column. From here you can select which gauge (or none at all) you want displayed under Base Analogs in Monitor Mode.

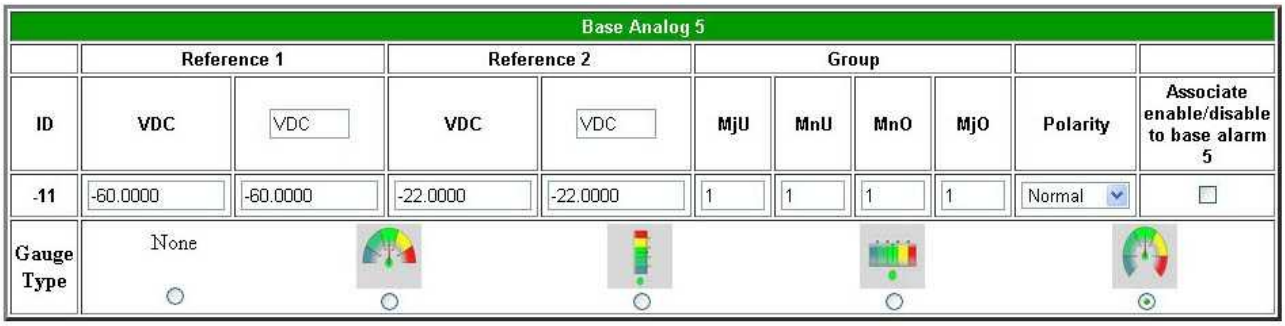


Base Analog 5

	Reference 1		Reference 2		Group					
ID	VDC	VDC	VDC	VDC	MjU	MnU	MnO	MjO	Polarity	Associate enable/disable to base alarm 5
-11	-60.0000	-60.0000	-22.0000	-22.0000	1	1	1	1	Normal	☐
Gauge Type	None ○	○	○	○	○				◉	

1. From the **Edit** menu click on the **Analogs** link.
2. In the **Description** field enter a description for each analog channel being utilized.
3. Under the **Unit** column, click on the abbreviated units link (e.g VDC, RH, F, etc.).
4. Set **Reference 1** (VDC) to the minimum output (in volts DC) of the analog device being configured.
5. In the box next to **VDC** (the space may already contain the abbreviation VDC) enter an abbreviation for the native units (e.g. RH for relative humidity, F for ° Fahrenheit, etc.).

6. In the box below the abbreviated native unit setting enter the native unit amount that corresponds to the minimum output entered in the previous step.
7. Set **Reference 2** (VDC) to the maximum output (in volts DC) of the analog device being configured.
8. In the box next to **VDC** enter an abbreviation for the native units (e.g. RH for relative humidity, F for ° Fahrenheit, etc.).
9. In the box below the abbreviated native unit setting enter the native unit amount that corresponds to the maximum output entered in the previous step.
10. Enter the Point Group ID designated for each alarm level (MjU = Major Under, MnU = Minor Under, MjO = Major Over, MnO = Minor Under).
11. Check the 'Polarity' checkbox if you want the polarity set to 'Normal' or 'Reversed'. When set to 'Reversed', the polarity of the analog reading will be changed (positive to negative and negative to positive).
12. Check the 'Associate enable/disable to base alarm #' if you want the analog channel to be tied to the base discrete point of the same number (i.e. channel 5 with alarm 5). When in this mode, the analog is only enabled when the associated alarm point is set.
13. Select which type of gauge best represents your data. This is the gauge type that will be displayed when viewing Base Analogs in Monitor Mode. Selecting 'None' will cause the Base Analogs display in Monitor Mode to display the analog value instead of a gauge. Set all channels to 'None' to default the analog display to Table View. Gauge support is only supported with the xFLSH hardware option.
14. Click the **Submit Data** button to save the configuration settings.
15. Follow these steps for each analog channel being configured.



Reference 1 and reference 2 correspond to the minimum and maximum output values of your analog device

4.3.12.1 Integrated Temperature and Battery Sensor (Optional)

The optional integrated temperature and battery sensor allows the user to monitor surrounding temperature as well as the unit's current draw. This is only available if the NetGuardian was purchased with this option. If you are using the temperature or battery sensor, you must dedicate an analog port to each one (see user manual for connection information).

CAUTION: Ambient room temperature will be cooler than the NetGuardian integrated temperature.

Temperature Sensor

1. In the **Description** field enter a description in the analog channel you are using for the integrated temperature sensor. 7=internal and 8=external.
2. Under the **Unit** column, click on the abbreviated units link (e.g VDC, RH, F, etc.) to convert the reference units and the native units for that analog channel, see Figure 2.24.
3. In **Reference 1** enter **iF** (integrated Fahrenheit or external Fahrenheit) in the box next to **VDC** (the space may already contain the abbreviation VDC), see Figure 2.24. This enables the NetGuardian's pre-configured temperature settings. Repeat this step for **Reference 2.**
4. Set your desired thresholds.

Battery Sensor

1. In the **Description** field enter a description in the analog channel you are using for the integrated current

sensor. 5= Battery A and 6= Battery B.
2. Set your desired thresholds. Be sure to set your thresholds in reference to your NetGuardian's power input (e.g. –24 VDC, –48 VDC, or wide range).

4.3.12.2 D-Wire Sensors

Fig. 2.28. D-Wire Sensors menu

If this NetGuardian has support for D-Wire sensors, their configuration links will appear in the **Edit** menu. The interface will resemble that of the regular analog pages, with the difference being a new column for the **ROMID**'s of each sensor. Any detected or configured sensor will appear in this column. The color of each **ROMID**'s cell in the table will depend on its detected status. If the cell is yellow, that sensor is detected but is not yet configured. The page must be submitted in order to configure these detected **ROMID**s. Once submitted, all of the settings mentioned in the previous section will apply to this sensor (the "Unit" field will automatically be configured upon submission, no changes should be made to this field for D-Wire sensors). If the cell is red, then the sensor is configured but has not been detected. The D-Wire Sensor Not Detected System Alarm will set if any configured sensor is not detected. The **Freq.** column determines how often (in minutes) the unit logs each sensor to a .csv file.

Note: It may take up to one minute for a newly attached sensor to register in the **Edit** or **Monitor** interface.

Note: In T/Mon when defining the D-Wire temperature sensors use "iF" for the unit value. For D-Wire humidity sensors, set the Voltage Value 1 to 1, the Unit Value 1 to 5.5238, Voltage Value 2 to 4 and Unit Value 2 to 100.762"

4.3.12.3 Analog Polarity Override

eF : external temperature sensor in fahrenheit or iC for celsius
iF : integrated temperature sensor in fahrenheit or iC for celsius
oV+ : override polarity VDC to positive
oV- : override polarity VDC to negative

If you have a positive powered NetGuardian, you may want to use this feature if you are using the internal battery sensor. The Web Browser Interface will override **oV+** and **oV-** tags and show VDC. So you won't have to view an uncommon looking tag while in monitor mode.

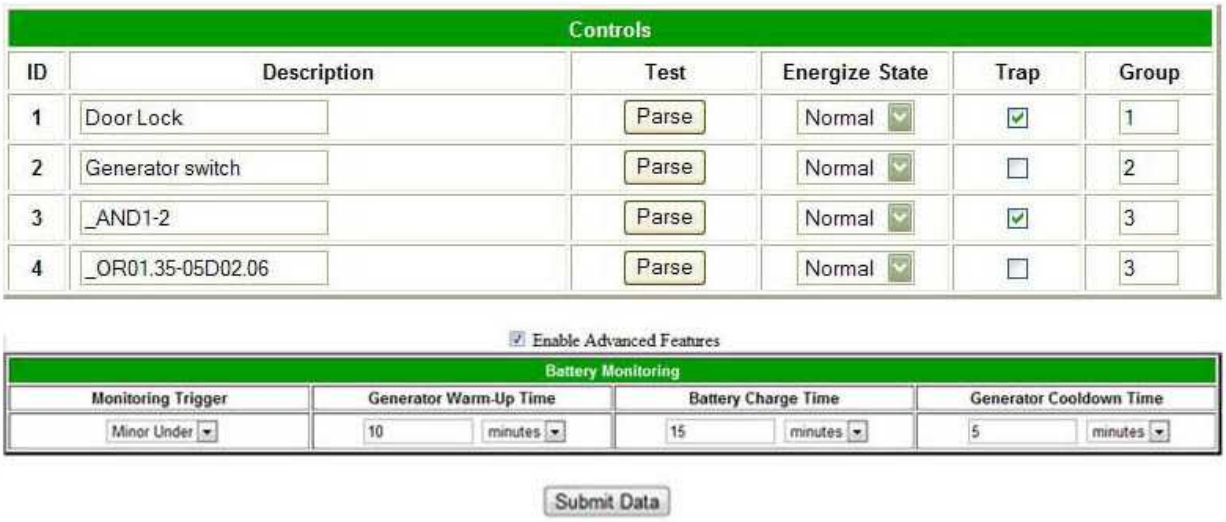
Analog Accuracy: +/- 1% of analog range.

4.3.12.4 Analog Step Sizes

Analog Step Sizes	
Input Voltage Range	**Resolution (Step Size)**
0-5 V	.0015 V
5-14 V	.0038 V
14-30 V	.0081 V
30-70 V	.0182 V
70-90 V	.0231 V

Analog step sizes

4.3.13 Configuring Control Relays



Configure controls in the Edit menu > Controls screen

The NetGuardian 420's 3 or 4 relays (depending on build option) can be identified and configured using the **Edit** menu > **Controls** screen.

Relays are normally open (N/O) by default. A circuit board jumper can be changed for each control to make it normally closed (N/C). Refer to

To configure your relays:

1. From the **Edit** menu, select the **Controls** link.
2. In the **Description** field enter a description for each control/relay being used.
3. Set the **Energize State** to either **Normal** or **Inverted**. Selecting **Normal** sets the relay's normal electrical state to **De-energized**. Selecting **Inverted** sets the relay's normal electrical state to **Energized**.
4. Check the **Trap** box to send an SNMP trap for that alarm point. Selecting the box will set that point to send a SNMP trap when the relay is activated, leaving the box blank will set that point to not send an SNMP trap.
5. Under the **Group** column enter the appropriate Point Group ID
6. Click **Submit Data** to save the configuration settings.

Hot Tip!

The Energize State is different than the normal state of the physical contact closure position of each relay, which is determined by circuit board jumpers. This gives you the added benefit of being able to monitor the wire. In the event of a power failure, the relay would de-energize back to it's normal physical contact closure set by the circuit board jumper for that relay. Check your jumper settings and relay connections before setting to Normal or Inverted.

4.3.13.1 Advanced Controls Build Option

When encountering the Edit Controls interface with the Advanced Controls build option, you'll see an additional checkbox below the main window titled 'Enable Advanced Features'. These advanced features control the timing for a generator and are used to charge the batteries. To configure advanced controls settings, select this checkbox.

NOTE: Selecting the 'Enable Advanced Features' checkbox will occupy control relay slots #1 and #2.

Edit Controls > Enable Advanced Features

Monitoring Trigger	This selects which severity level will cause Control #1 to latch and start the generator. The Battery Monitoring feature monitors analog channels 5 and/or 6 (Battery A and B).
Generator Warm-Up Time	Determines how long the generator will run before Control #2 latches, initiating the battery charging. Can be configured in seconds, minutes or hours, within a range of 1 - 120.
Battery Charge Time	Determines how long the batteries will charge until Control #2 releases. Can be configured in seconds, minutes or hours, within a range of 1 - 120.
Generator Cooldown Time	Determines how long the generator will cooldown until Control #1 releases. Can be configured in seconds, minutes or hours, within a range of 1 - 120.

Once you have configured your settings, press the 'Submit Data' button. In order for the changes to take effect, you will need to reboot your NetGuardian 420 device.

4.3.14 Setting Event Qualification Timers

Event qualification timers allow you to determine a length of time that must pass before an event can occur. For example: you may set a qualification timer that requires an alarm to be set for five seconds before it is reported.

Edit the Even Qualification Timer settings from the Edit > Even Qual screen

To configure Event Qual timers:

1. From the **Edit** menu select from the **Event Qual** drop down menu. The NetGuardian supports up to 128 Event Qualification Timers, which are grouped into sections of sixteen.
2. Enter the display and point number for the point you wish to qualify.

Note: the ID will correspond to Event Qualification. A list of displays and points can be found in Appendix B.

3. In the **Value** field enter the appropriate value (the field handles entries between 1 - 127).
4. Under the **Units** column, click on the drop-down menu and select the appropriate unit of time (sec, min, hour).
5. Under the **Type** column click on the drop-down menu and select the appropriate event type (Alm = alarm, Pri = primary, Sec = secondary).

Note: To delete an entry, set the **Type** to None.

6. When you are done making changes, scroll to the bottom of the page and click **Submit Data**.

CAUTION: Set conditions for alarms are qualified, clear conditions are not.

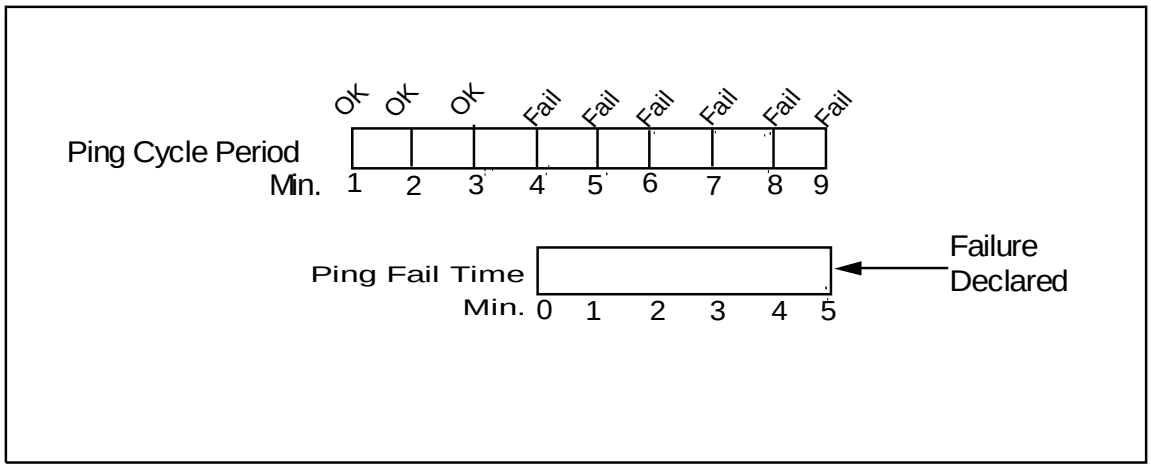
By referencing a control relay in the display and point fields, an event becomes a momentary relay time. Controls are mapped to Display 11, Points 1-4. See the Reference Section of this manual for display mapping information.

4.3.15 Setting System Timers

Timers		
	Value	Units
Cycle (1-120)	60	sec
Wait (1-12)	8	sec
Fail (1-120)	5	min
Sound (0-120)	6	sec
Channel (1-120)	2	min
Craft (0-120)	0	min
DCP (0-120)	30	sec
Tmd Tick (0-60)	0	min
PPP (0-120)	15	min
NTP Sync (0-120)	60	min
Proxy (0-120)	20	min
Web Timeout (0-120)	10	min
Web Refresh (5-120)	60	sec
LCD Delay (1-60)	2	sec

Submit Data

When a target fails to respond to a ping within the fail time period, a fault is declared



Default timer settings

The NetGuardian's System Timers allow you to control the rate of your pinging activity, time of speaker sounding, inactivity time for data ports, and discrete alarm detect time. Ping timer settings allow you to balance network traffic against alarm response times. Although you can change the values from their default settings, it is recommended that you use either the default settings or plan your settings so that there is no conflict among the timers. Specifically, the FAIL time should be set to several times the CYCLE time to allow multiple PINGs before a FAIL is declared. Likewise, the CYCLE time should be set to several times the wait time.

Hot Tip!

The smaller the CYCLE number, the sooner you will find out about failures; however, you will increase traffic on your network.

1. From the **Edit** menu select **Timers**.
2. Set the **Cycle** time. This determines how often the NetGuardian will go through its list of ping targets and

attempts to reach them with an ICMP ping. Set the value between zero and 120 and set the units to either seconds or minutes. Default is 60 seconds.

3. Set the **Wait** time. The NetGuardian waits after sending a ping request before it determines that the target is unreachable. Set the value between zero and 12 and set the units to either seconds or minutes. Default is 8 seconds.
4. Set the **Fail** time. This determines the period of time over which, if a unit has not responded, it is considered failed. Set the value between zero and 120 and set the units to either seconds or minutes. Default is 5 minutes.
5. Set the **Sound** time. This determines how long the NetGuardian's speaker will sound when an alarm occurs or clears. The alarm condition will still be present after the speaker shuts off. The sound timer only affects the duration of the audible alarm annunciation. Set the value between zero and 120 and set the units to either seconds or minutes.
6. Set the **Channel** time. This determines the period of time over which, if there is no activity on the data ports designated as channel ports, it is considered failed. Set the value between zero and 120 and set the units to either seconds or minutes. Alarm activity is indicated in Display 11, Point 62. (See Appendix A, "Display Mapping.")
7. Set the **Craft** time. This determines the period of time over which, if the device connected through a port designated as a **craft** port doesn't reset the timer, an alarm will be triggered. Set between 0 and 120 (min or sec). Alarm activity is indicated in Display 11, Point 63. (See Appendix A, "Display Mapping.")
8. Set the **DCP** time. Set between 0–120 (sec or min). This determines the period of time over which, if the NetGuardian does not receive a DCP poll, to trigger an alarm. Once the alarm is triggered, then dial back-up may be enabled if a T/Mon pager profile is configured.
9. Set the **Timed Tick** between 0–60 minutes. This is a "keep alive or heartbeat" function that can be used by Masters who don't perform integrity checks. For example, if you entered 30, the NetGuardian would notify you every 30 minutes. See section "Setting Up Notification Methods" for paging information.
10. Set the **PPP** time. Set between 0–120 for onDemand mode.
11. Set the **NTP** Sync. Set between 0–120 (sec or min).

Note: The timer settings are accurate to ± one tick. This means that if a timer is set to one minute, it may actually respond anywhere from zero to two minutes. If your target time is one minute, then set the timer to 60 seconds so that it will respond anywhere from 59-61 seconds.

12. Set the **Proxy** time between 0-120 minutes. This indicates the length of time that has to pass before a proxy connection times-out from inactivity.
13. Set the **Web Edit Timeout** time between 5–120 minutes. This determines the period of time a Web edit page may be active without any activity. A logon is required if a Web edit timeout occurs. The default Web edit time is 10 mins.

    Note: The time units are preset to minutes by default and cannot be changed.

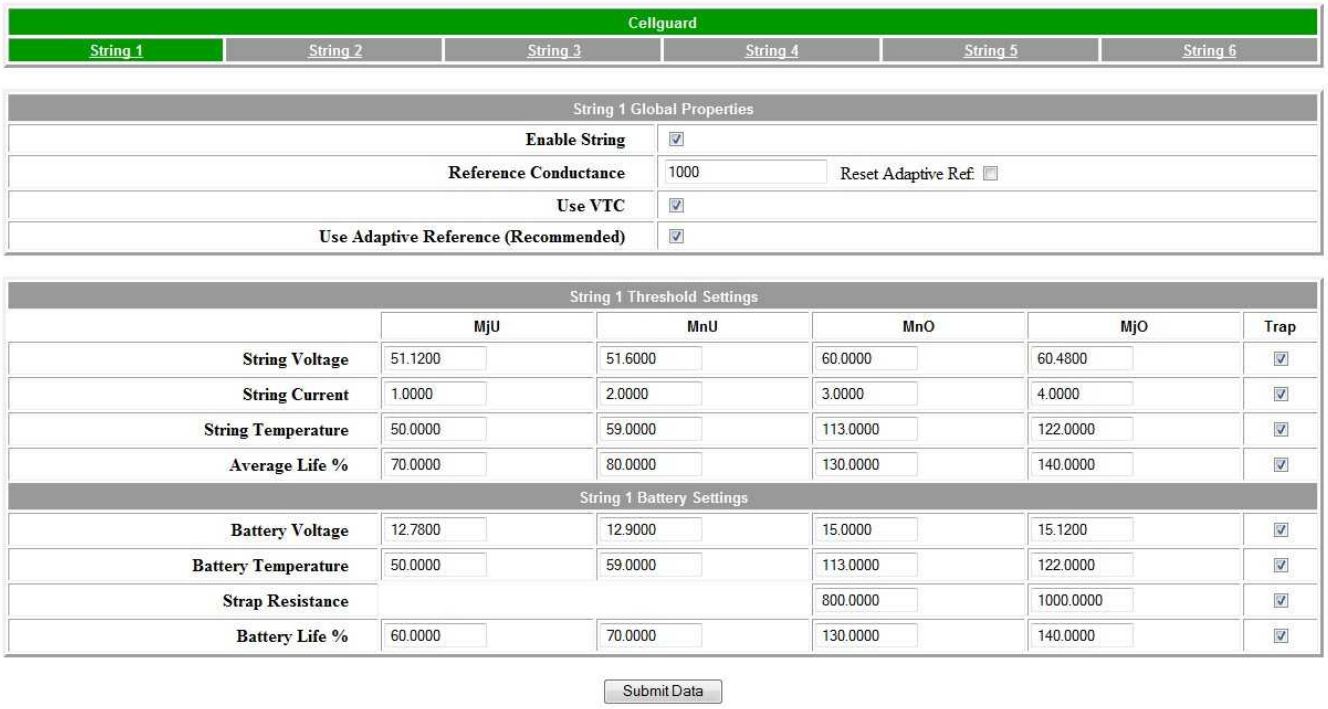
14. Set the **Web Monitor Refresh** time between 5–120 seconds. This timer enables the user to specify how long the NetGuardian should wait before auto-refreshing a Monitor page to the Web browser. The default Web monitor refresh time is 60 seconds.

    Note: The time units are preset to seconds by default and cannot be changed.

15. Set the **LCD Delay** time between 1–60 seconds. This timer is used when you have set the LCD to "Point Mode." This time is how long you want the alarm to be displayed on the front panel LCD screen. The default is 2 seconds.
16. Set the **LCD Scroll** speed between 100 to 1000 milliseconds. This timer is used to configure how much time passes for the LCD to continue scrolling. The default is 600 milliseconds.

4.3.16 CellGuard Battery Settings

Each string of batteries must be configured in the Edit->CellGuard menu. Each string has four alarm trip points (thresholds) in ascending order: major under, minor under, minor over, and major over. You can choose the values for each of the thresholds on all channels. As with the other alarms, you can designate whether or not to send an SNMP trap when a threshold is crossed. SNMP version 2C is used for all CellGuard Traps. The thresholds must be set from **Under** to **Over** in either ascending or descending potential (or current) order. Thus the settings of –10, –5, 5 and 10 corresponding respectively to major under, minor under, minor over and major over is valid.



To view the status of your batteries, select Monitor > CellGuard

Field	Description
Enable String	Check to enable monitoring this battery string.
Reference Conductance	The factory rated conductance of the batteries. If this value is unknown, generic values can be used, but DPS recommends using the reference value provided for your specific battery. (See CellGuard User Manual Appendix for values)
Reset Adaptive Ref:	This clears the adaptive reference conductance value for each battery back to the original reference setting. This box does not stay checked. The values are reset immediately when the "submit data" button is clicked.
Use VTC	Enables optional Cellguard VTC module.
Use Adaptive Reference (Recommended)	Adaptive reference accounts for new batteries whose actual conductance reading may be larger than the rated conductance rating. This setting allows the reference conductance to rise individually with each battery and gives a more accurate life estimate for each battery.

String Global Properties

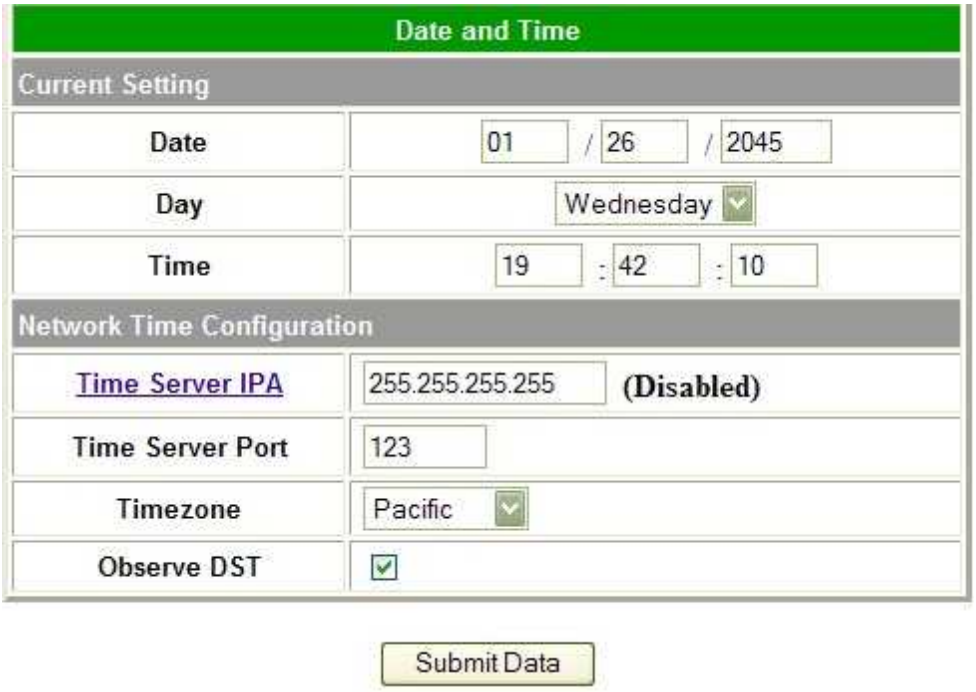
Field	Description
String Voltage	The voltage of the selected battery string. (VTC Module required)
String Current	The current of the selected battery string. (VTC Module required)
String Temperature	The temperature reading from the battery sensor. (VTC Module required)
Average Life %	The average life % of the all batteries in the string. Life is calculated as a percentage of measured conductance vs reference conductance.

String Threshold Settings

Field	Description
Battery Voltage	Set the threshold for each battery voltage.
Battery Temperature	Set the threshold for each battery temperature.
Strap Resistance	Set the threshold for Strap resistance. (Minor Over and Major Over only)
Battery Life %	Set the threshold for each battery life percentage. Life is calculated as a percentage of measured conductance vs reference conductance.

Battery Settings

4.3.17 Setting the System Date and Time



The current date and time can be entered from the Date and Time screen or from an SNMP manager

The date is entered in the mm/dd/yyyy format and the time is entered in the hh:mm:ss format.

Hot Tip!

The date and time can also be set from an SNMP manager.

Use the following steps to manually set the system's time and date:

1. From the **Edit** menu, select **Date and Time**, see Figure 2.31.
2. Enter the appropriate date, the day of the week, and time.
3. Click **Submit Data** to save the data and time settings.

The date and time will need resetting following a power failure or reboot unless your NetGuardian is equipped with the real-time clock option or network time is enabled.

4.3.17.1 Network Time Protocol Support

Configure the Network Time Protocol feature in the Date and Time screen

Network Time Protocol support enables you to set a server to provide your NetGuardian the correct date and time, so you don't have to enter the information if your NetGuardian loses power or has to be reset to factory settings.

To enable Network Time Support:
1. From the **Edit** menu select **Date and Time.**
2. Click on the **Time Zone** drop-down menu and select the appropriate time zone.
3. Put a check next to **Observe DST** if you are in an area that observes daylight saving.
4. Enter the IP of the network time server in the **Time Server IPA** field.

Note: To disable NTP support, simply set the **Time Server IPA** to 255.255.255.255

6. Click **Submit Data** to save the date and time settings.

4.3.18 PPP Modes

Configure the PPP port settings in the Edit menu > PPP screen

If the LAN connection to your remote sites fails, you can still keep in touch with your remote equipment by using

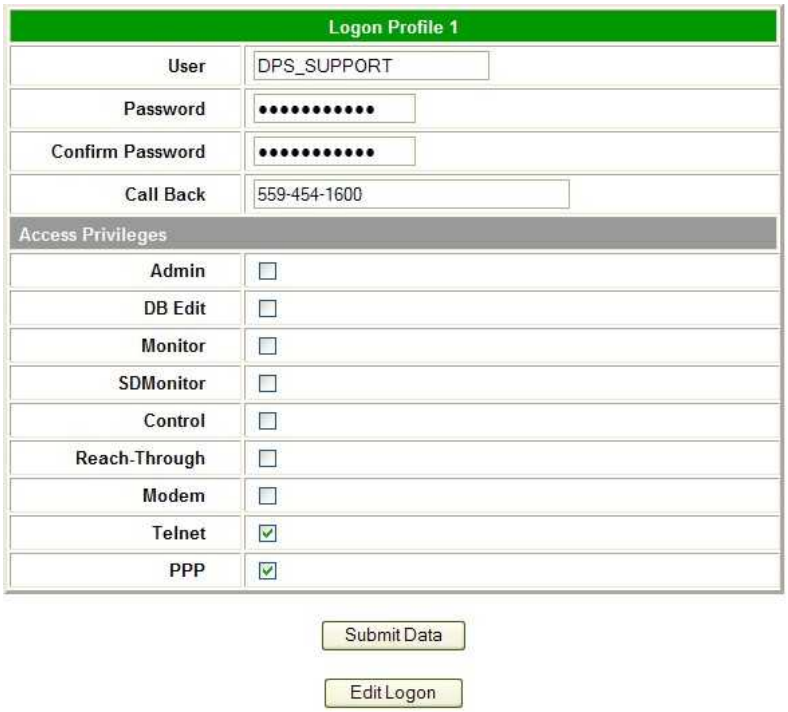
the NetGuardian as a PPP (Point-to-Point Protocol) server via dial-up.

To configure the NetGuardian as a PPP Server:

1. Select **PPP** from the **Edit** menu.
2. In the **Server** section check the **Enable Server** (also known as Hosting Mode) box.
3. Set the IP address that is given to the guest dialing in. (This must be a valid and available IP address for the subnet on the LAN you will be connecting to, the same one the NetGuardian is connected to.)
4. Click **Submit Data** to save your PPP settings.

Edit the Modem settings for the PPP server in the Edit menu > Ports screen > Modem section

5. Select **Ports** from the **Edit** menu.
6. Scroll down to the **Modem** section. Make sure the **Ring Count** field is greater than 0.
7. In Answer Init String field type **&Q6**.
8. Click **Submit Data** to save your Modem changes.



Select PPP and Telnet access privileges in the Edit menu > Logon > Logon Profiles screen

9. Make sure the users who will need it have the access privilege to access the unit via Telnet. Select **Logon** in the **Edit** menu.

Hot Tip!

There can be up to 16 different user names and each one must have its own password.

10. Click the **Available** link or the user you want to have PPP and Telnet access privileges.
11. Under the **Access Privileges** section check the **PPP** and **Telnet** boxes.
12. Click **Submit Data** to save the configuration settings.
13. Select **Reboot** in **Edit** menu to reboot the NetGuardian. (See section "Rebooting the NetGuardian.")

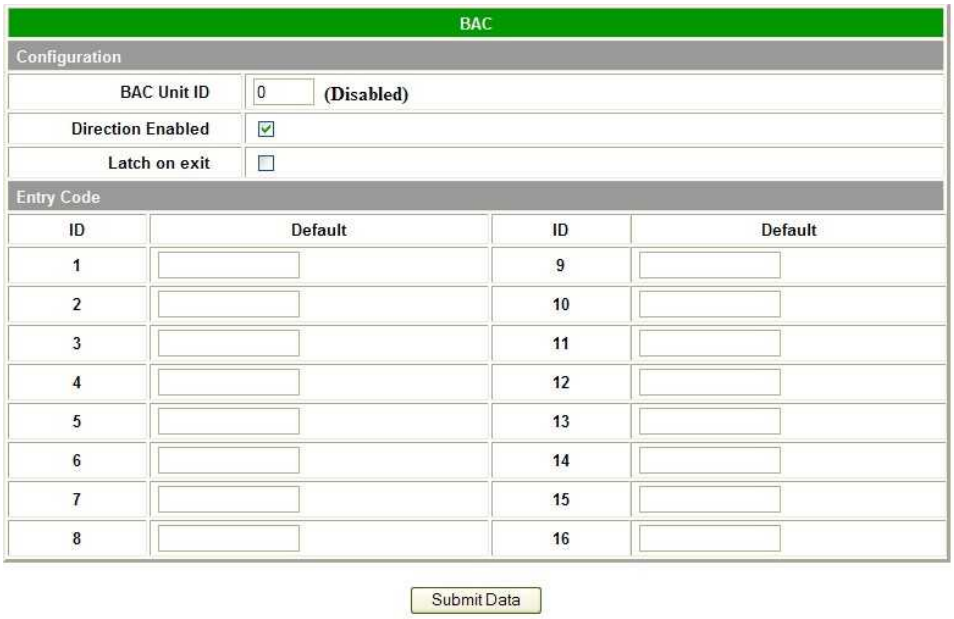
You also need to configure your remote terminal modem in order to access your NetGuardian by following these steps:

Windows 98 users: Set baud rate to **9600.**

Windows 2000, XP users: In **Modem Configuration General** tab uncheck **Enable modem error control** and **Enable compression.**

Mac OSX users: Use standard dial-in.

4.3.19 Building Access Control



Passwords entered in the NetGuardian will only remain valid until BAC provisioning information is downloaded from T/MonXM.

The Building Access Controller (BAC) option is only available for NetGuardian 420 builds with an RS-485 connection attached to an Entry Control Unit (ECU).

1. Enter the BAC unit ID number (This is the DCP address of the ECU. It must match the expansion address being polled by the master. Any range from 1-255 is acceptable or enter zero to disable the unit).

2. When **Direction** is enabled, users are required to enter a 1 for enter immediately following their password or a 4 for exit immediately following their password. For example, if the password is 4541600, and direction is enabled ,users need to type in 45416001# to enter, or 45416004# to exit.

3. The Defaults column is where door passwords can be edited. These passwords are temporary passwords used primarily for turn up and test. A valid password is a combination of up to 14 digits. When a valid password is entered on the keypad, the NetGuardian will send a command to the Entry Control Unit (ECU) to operate the relay to energize the door strike.

Hot Tip!

Be sure to define the data port you are using for the ECU as an **ECU** type.

To configure Building Access on T/Mon, see your T/MonXM manual.

4.3.20 Configuring IP Cameras

The NetGuardian SiteMon G2 provides users with live streaming video of their remote sites. The direct pan-and-tilt features allows users to visually check the status of their sites from the convenience of their desktop. The NetGuardian allows your to view up to four cameras from the NetGuardian web interface.

To configure your camera settings:

1. From the **Edit** menu select **Camera**.
2. Enter the appropriate information in the **Name**, **Description**, **IP Address**, and **MAC Address** fields for each of your cameras.
   Note: See Section "Monitoring Camera Activity" for camera viewing options.
3. Click Submit Data to save your camera configuration settings.

View live streaming video of your remote sites via Web browser

Appropriate Web Browser Settings

In order to perform the pan-and-tilt functions of the camera, your Web browser must be set to check for newer versions of stored pages at every visit to the page.

The directions for checking for newer versions of stored pages may vary depending on what version of Windows you are running. The instructions below are relevant to Internet Explorer 5.5 and 6.0 only.

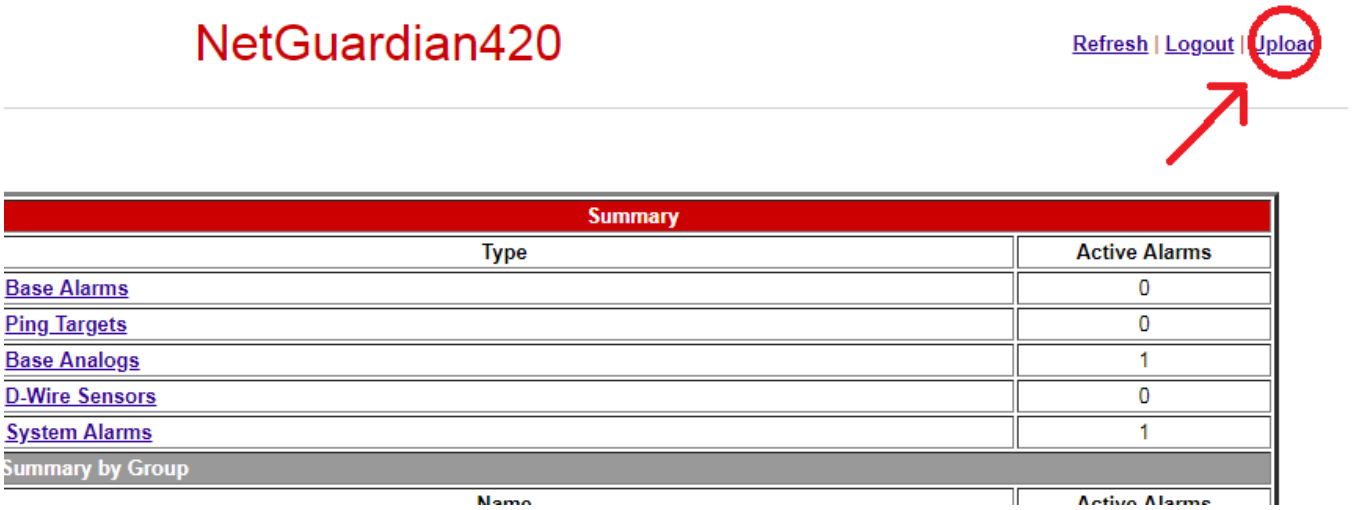
1. With the Web browser open (Internet Explorer version 5.5 or later), click on **Tools** and select **Internet Options** from the drop-down menu.
2. Click on the **Settings** button under the **Temporary Internet files** heading.
3. Click on the **Every visit to the page** button and click Ok.

4.3.21 Backup Configuration

With the NetGuardian 420 you can backup your current configuration from the Web Interface. These configuration files can then be uploaded later, or uploaded to other NetGuardian 420 units.

How to backup your current configuration:

1. From the Edit menu select NVRAM
2. Click on the **config.bin** link to the right of **Backup Configuration** to download your configuration file.
3. Now your configuration should be saved. If you need to upload a configuration, follow the steps below.

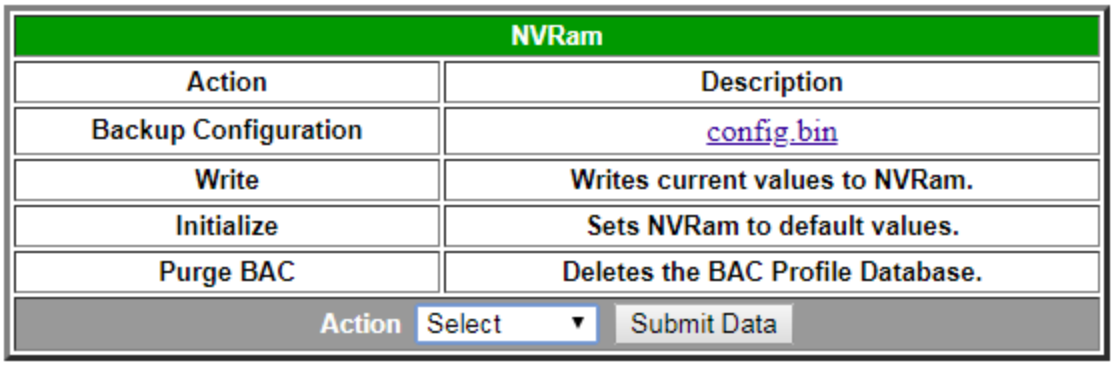


How to upload a saved configuration:

1. Click the upload button at the top right corner of the Web Interface.
2. Click the “Choose File” button.
3. Browse to the location of the .bin file from the steps above.
4. Select that .bin file and press the “Upload” button.
5. You should now have the same configuration settings loaded from when you saved the .bin file above.

4.3.22 Alarm Sync

Clicking on the Alarm Sync link from the Edit menu will re-synchronize all of the NetGuardian alarms. This command clears all alarms, so that a new notification is sent for all standing alarms. This allows you to easily test alarm connections during turnup without rebooting the NetGuardian unit. A warning prompt will appear, click **Ok** to continue or **Cancel** to exit without resynchronizing your alarms.



Click Ok to re-synchronize the NetGuardian alarms or Cancel to exit

4.3.23 Saving Changes or Resetting Factory Defaults

Your NetGuardian 420 comes equipped with Non Volatile RAM (NVRAM), which enables the retention of data in the event of power loss. You may use the NVRAM function from the web interface to either write your changes to the NetGuardian or revert to factory defaults.

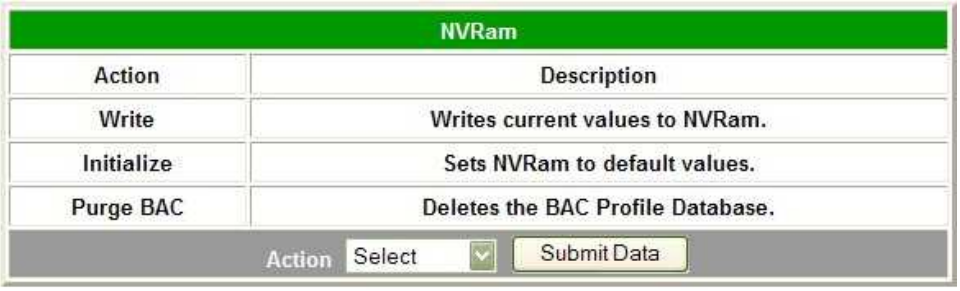
Some changes require a reboot of the NetGuardian to take effect, see Section "Rebooting the NetGuardian."

To access NVRAM:

1. From the **Edit** menu select **NVRAM**.
2. Select **Write** to cause the current data in RAM to be written to NVRAM and then verified.
3. Select **Initialize** to reload factory defaults into NVRAM.

DO NOT SELECT THIS OPTION UNLESS YOU WANT TO RE-CONFIGURE YOUR NETGUARDIAN.

4. Select **Purge BAC** to delete the Building Access Controller profile database downloaded from T/Mon XM.



NVRAM enables the NetGuardian to retain data even through a power loss

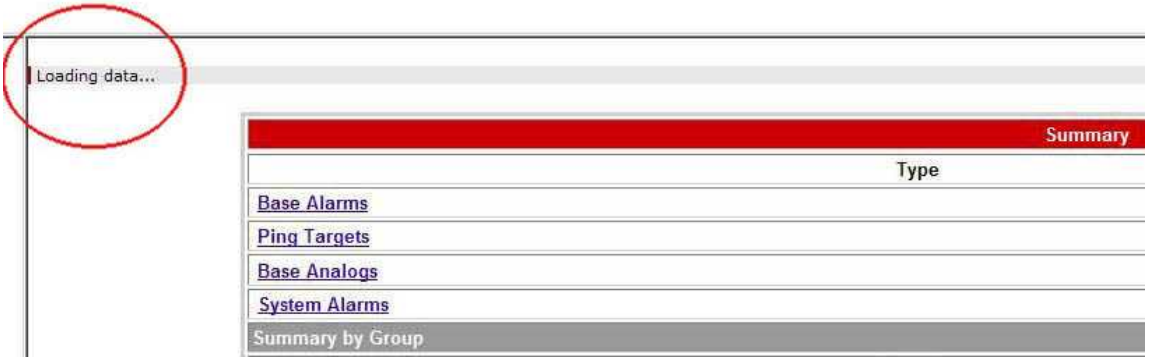
4.3.23.1 Rebooting the NetGuardian

Click on the **Reboot** link from the **Edit** menu to reboot the NetGuardian after writing all changes to NVRAM. Any changes to port settings require a reboot to take effect. The window footer will display the text **Reboot Needed** if a reboot is necessary to initiate changes.

4.4 Monitor Mode

From Monitor Mode, you can monitor all of the unit's alarms, analogs, ping targets, cameras, and issue controls. When you logon to the NetGuardian, it will be in Monitor Mode. To revert to Monitor Mode from Edit Mode, simply click the blue Monitor button.

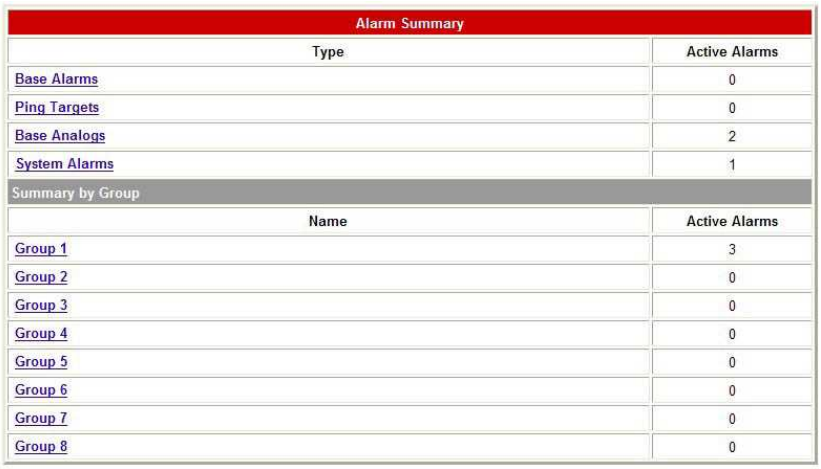
If your hardware supports xFLSH, periodically a gray line will flash near the top of the interface. This indicates that data is being refreshed for the interface.



If your hardware supports xFLSH and if there is a problem with the connection or a problem with the data loading, an error message will be displayed.

NOTE: When SSL (secure) mode is enabled, the web refresh will be no faster than 30 seconds (for example, if your refresh time is configured for 5 seconds, web refreshes will revert to a 30 second refresh time).

4.4.1 Alarm Summary



Alarm Summary	
Type	Active Alarms
Base Alarms	0
Ping Targets	0
Base Analogs	2
System Alarms	1
Summary by Group	
Name	Active Alarms
Group 1	3
Group 2	0
Group 3	0
Group 4	0
Group 5	0
Group 6	0
Group 7	0
Group 8	0

Entering Monitor Mode will bring you to the Alarm Summary Screen. From here, you can see the total number of active alarms, ping targets, analogs, and system alarms. You can also view alarms by point group. Click any of the links in the Alarm Summary to see details or use the navigation links on the left to browse your NetGuardian's alarms and resources.

4.4.2 Base Alarms

From the Base Alarms screen, you can view the state of your NetGuardian's 20 base alarms.

Base Alarms		
Point	Description	State
1	DOOR	Clear
2	BEACON	Clear

If you added alarms to point groups, the state field will display the appropriate set or clear messages. If you're ever unsure of the set or clear messages, green font will always indicate a cleared alarm, red will always indicate a set alarm.

4.4.3 Ping Targets

You can monitor your NetGuardian's 32 ping targets from the **Monitor > Ping Targets** screen.

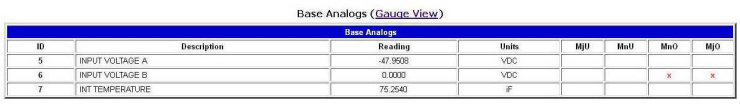
Ping Targets		
Point	Description	State
1		Clear

If you added your ping targets to point groups, the state field will display the appropriate set or clear messages. If you're ever unsure of the set or clear messages, green font will always indicate a cleared alarm, red will always indicate a set alarm.

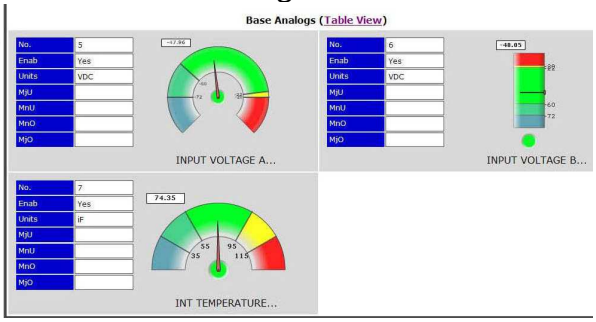
4.4.4 Base Analogs

The **Monitor** menu > **Analogs** screen provides a table or a gauge display (depending on your configuration in Edit Mode) of each analog channel, the current reading, the units being read, and alarm conditions (major under, minor under, major over, minor over) according to your analog settings.

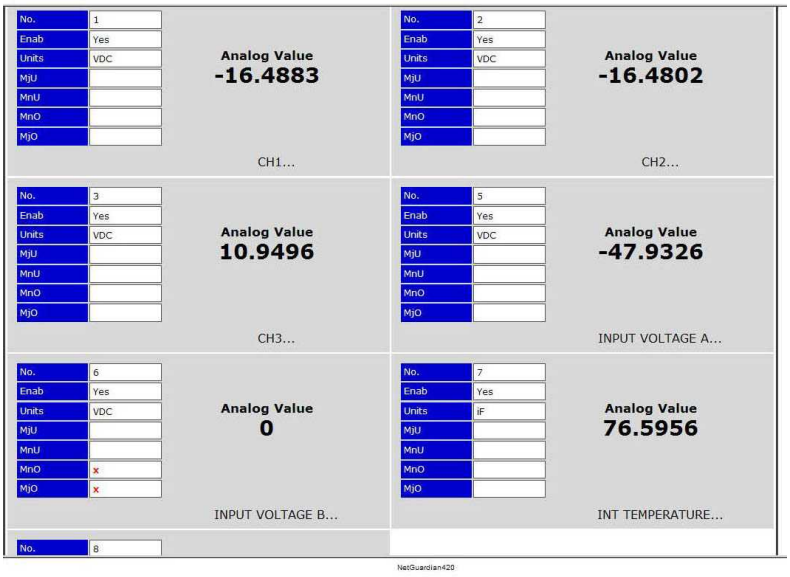
Table View



Gauge View



If you selected "None" for the analog guage type in edit mode (see section 13.3.12), the interface will display the analog value as shown below.



Note: With the D-Wire top board build option, D-Wire Sensors 1-8 and 9-16 links will appear under the Analogs link. These pages add the ROMID columns to the original analog tables. If a sensor is not detected, its ROMID font will appear red.

4.4.5 System Alarms

The System Alarms link will show you the state of your NetGuardian's internal alarms.

System Alarms		
Point	Description	State
17	Timed Tick	Clear
18	Exp.Module Callout	Clear
19	Network Time Server	Clear
20	Accumulation Event	Clear
21	Duplicate IP Address	Clear

If you added alarms to point groups, the state field will display the appropriate set or clear messages. However, in the state field, green font will always indicate a cleared alarm, red will always indicate a set alarm.

4.4.6 Accum Timer

Clicking on **Accum. Timer** will take you to the Accumulation Timer. From here, you can see how many times an alarm (configured from the Accum Timer field in Edit Mode) has occurred in a set period of time.

Accum. Timer	
Display Reference	0
Point Reference	0
Point Description	Undefined
Point Status	-
Event Threshold	00:00:00 (dd:hh:mm)
Accumulated Time	00:00:00 (dd:hh:mm)
Accumulated Since	01-Jan-2001 12:00

4.4.7 Controls

Selecting **Controls** from the Monitor Mode navigation menu gives the user access to the unit's control relays

Controls			
ID	Description	Mode	State
1		Normal	Rls
2		Normal	Rls
3		Normal	Rls
4		Normal	Rls

Submit Data

To operate controls:

1. Under the **State** field, choose a command (Opr - operate, Rls - release, or Mom - momentary).
2. Click **Submit Data** to issue the control.

The control relay's normal state - open or closed - is determined by a PCB jumper. Operating a control thus changes the normal state of the relay (energizes it) until it is released (de-energized). By default, the momentary

command energizes the relay for approximately one second before it is released again. Use the event qualifiers to extend the momentary period.

4.4.8 Event Log

To view a log of alarm events, click **Event Log** in the Monitor Menu Navigation frame.

The NetGuardian's Event Log allows the NetGuardian to post and monitor up to 100 events including power up, base and system alarms, ping alarms, analog alarms, and controls. Posted events for the various alarms include both alarm and clear status. All information in the event log will be erased upon reboot or a power failure.

Event Log Field	Description
Event	Event number (1-500)
Date	Date the event occurred
Time	Time the event occurred
Group	Group number of the point
State	State of the event (A=alarm, C=clear)
Disp	DCP display
Point	Point reference.
Description	User defined description of the event as entered in the alarm point and relay description fields

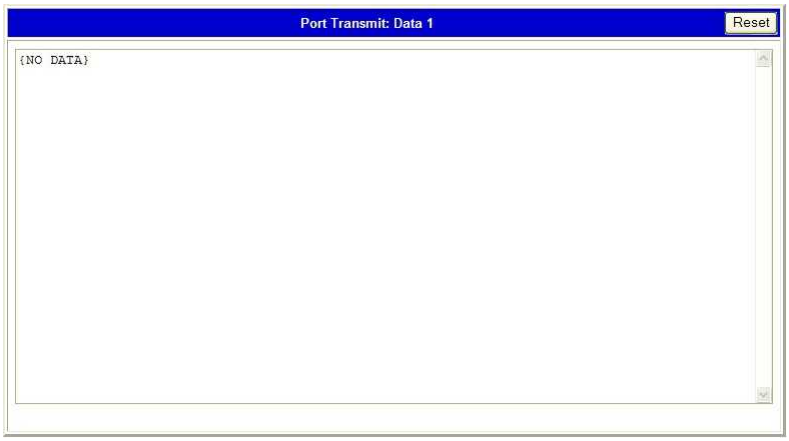
Event Logging window field descriptions

4.4.9 Monitoring Port Activity

To view the data being received by the connected equipment, select the data port number from the Monitor menu > Port Receive drop-down menu

The **Port Transmit** and **Port Receive** screens provide live status information for the NetGuardian's 4 data ports by

displaying transmit or receive activity in ASCII for the selected port. See "ASCII Conversion" in the Reference Section of this manual for specific ASCII symbol conversion.



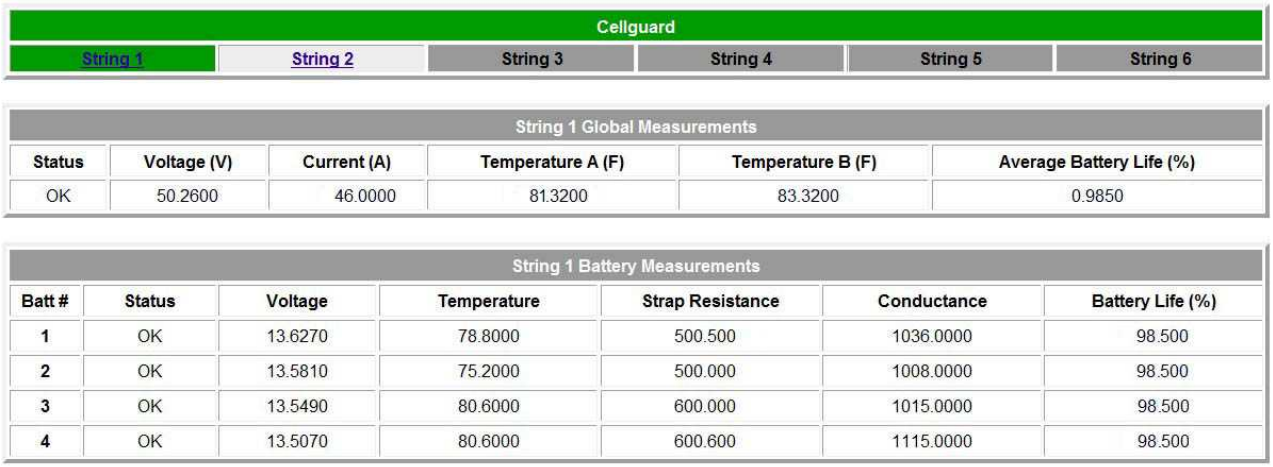
The Port Transmit screen displays activity for the selected port

Hot Tip!

Use the NetGuardian's CHAN feature to analyze bi-directional communication between two device in real time, see section "Data Port Types."

4.4.10 CellGuard Battery Alarms

The Monitor->CellGuard screen will show you the state of your NetGuardian's battery alarms. If you have more than one battery string then you can click String 1-6 to view their status. The String Global Measurements table monitors the entire string batteries. The String Battery Measurements section monitors each individual battery.



Cellguard

String 1 | String 2 | String 3 | String 4 | String 5 | String 6

String 1 Global Measurements

Status	Voltage (V)	Current (A)	Temperature A (F)	Temperature B (F)	Average Battery Life (%)
OK	50.2600	46.0000	81.3200	83.3200	0.9850

String 1 Battery Measurements

Batt #	Status	Voltage	Temperature	Strap Resistance	Conductance	Battery Life (%)
1	OK	13.6270	78.8000	500.500	1036.0000	98.500
2	OK	13.5810	75.2000	500.000	1008.0000	98.500
3	OK	13.5490	80.6000	600.000	1015.0000	98.500
4	OK	13.5070	80.6000	600.600	1115.0000	98.500

To view the status of your batteries, select Monitor > CellGuard

Status	Description
OK	No thresholds are crossed and device is functioning properly.
Device Failed	Hardware error with the device.
Disabled	Device is disabled.
ALARM	A voltage, temperature, current, resistance, conductance or battery life threshold has been crossed.
ERROR	A software or hardware error has occurred.

Status field definitions

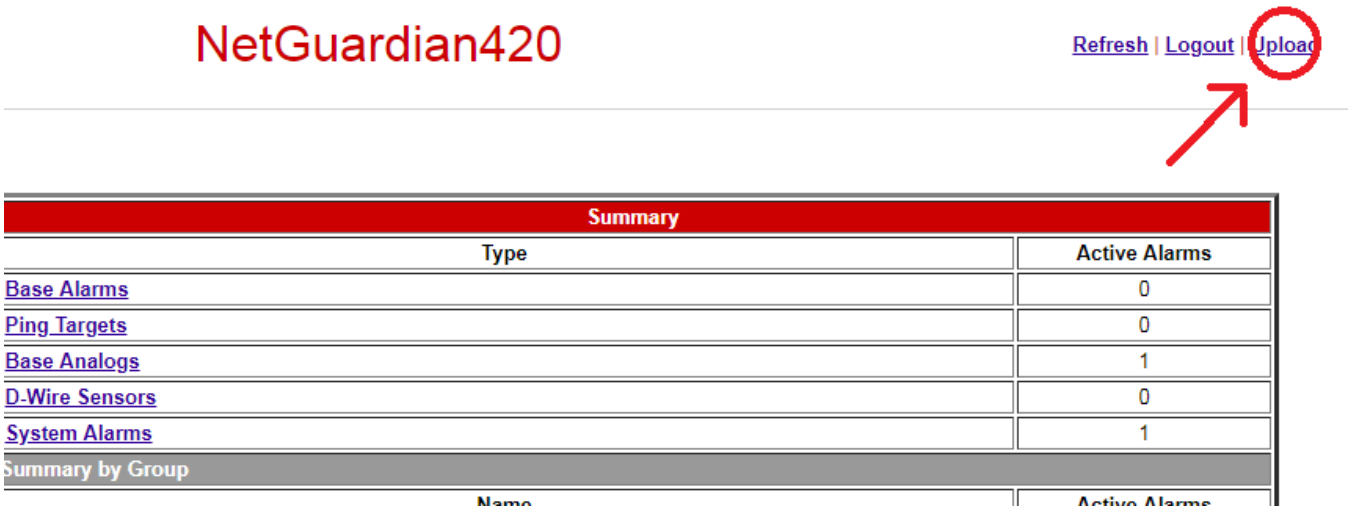
Note: If a threshold is crossed, one of the following indicators will be present next to the value in the table.

< Minor Under
<< Major Under
> Minor Over
>> Major Over

Battery Conductance second reading in parentheses:
If adaptive reference is enabled, a second conductance reading will be shown in parentheses. This is the adaptive reference value which is being used to calculate the life of each battery.

4.5 Firmware Upgrade

To upgrade your NetGuardian 420 firmware, click on the upload link at the top right corner of the Web Interface.



At the **Multiload** screen, click the "Choose File" button, browse to the firmware file that you've downloaded from www.dpstele.com and click **Upload.** The page will display "Upload Successful" When the upload is complete. Click on the "Site main page" link to return to the Monitor Summary page.

Browse for downloaded firmware upgrade

5 Frequently Asked Questions

Here are answers to some common questions from NetGuardian users. The latest FAQs can be found on the NetGuardian support web page, **http://www.dpstelecom.com.**

If you have a question about the NetGuardian, please call us at **(559) 454-1600** or e-mail us at

support@dpstele.com

5.1 General FAQs

Q. How do I telnet to the NetGuardian?

A. You must use **Port 2002** to connect to the NetGuardian. Configure your Telnet client to connect using TCP/IP (**not** "Telnet," or any other port options). For connection information, enter the IP address of the NetGuardian and Port 2002. For example, to connect to the NetGuardian using the standard Windows Telnet client, click Start, click Run, and type "telnet <NetGuardian IP address> 2002."

Q. How do I connect my NetGuardian to the LAN?

A. To connect your NetGuardian to your LAN, you need to configure the unit IP address, the subnet mask and the default gateway. A sample configuration could look like this:
Unit Address: 192.168.1.100
subnet mask: 255.255.255.0
Default Gateway: 192.168.1.1
Save your changes by writing to NVRAM and reboot. Any change to the NetGuardian's IP configuration requires a reboot.

Q. When I connect to the NetGuardian through the craft port on the front panel it either doesn't work right or it doesn't work at all. What's going on?

A. Make sure your using the right COM port settings. Your COM port settings should read:
Bits per second: 9600 (9600 baud)
Data bits: 8
Parity: None
Stop bits: 1
Flow control: None
Important! Flow control **must** be set to **none**. Flow control normally defaults to hardware in most terminal programs, and this will not work correctly with the NetGuardian.

Q. I can't change the craft port baud rate.

A. If you select a higher baud rate, you must set your terminal emulator program to the new baud rate, press Enter, and type in your password. If your terminal emulator is set to a slower baud rate than the craft port, normal keys can appear as a break key — and the craft port interprets a break key as an override that resets the baud rate to the standard 9600 baud.

Q. How do I use the NetGuardian to access TTY interfaces on remote site equipment?

A. If your remote site device supports RS-232, you can connect it to one of the eight data ports located on the NetGuardian back panel. To make the data port accessible via LAN, configure the port for TCP/IP operation. You now have a LAN-based proxy port connection that lets you access your device's TTY interface through a Telnet session.

Q. I just changed the port settings for one of my data ports, but the changes did not seem to take effect even after I wrote the NVRAM.

A. In order for data port and craft port changes (including changes to the baud rate and word format) to take effect, the NetGuardian must be rebooted. Whenever you make changes, remember to write them to the NetGuardian's NVRAM so they will be saved when the unit is rebooted.

Q. The LAN link LED is green on my NetGuardian, but I can't poll it from my T/Mon.

A. Some routers will not forward packets to an IP address until the MAC address of the destination device has been registered on the router's Address Resolution Protocol (ARP) table. Enter the IP address of your gateway and your T/Mon system to the ARP table.

Q. What do the terms "port," "address," "display" and "alarm point" mean?

A. These terms refer to numbers that designate the location of a network alarm, from the most general (a port to which several devices are connected) to the most specific (an individual alarm sensor).

Port: A number designating a serial port through which a monitoring device collects data.

Address: A number designating a device connected to a port.

Display: A number designating a logical group of 64 alarm points.

Alarm Point: A number designating a contact closure that is activated when an alarm condition occurs. For example, an alarm point might represent a low oil sensor in a generator or an open/close sensor in a door.

These terms originally referred only to physical things: actual ports, devices, and contact closures. For the sake of consistency, port-address-display-alarm point terminology has been extended to include purely logical elements: for example, the NetGuardian reports internal alarms on Port 99, Address 1.

Q. What characteristics of an alarm point can be configured through software? For instance, can point 4 be used to sense an active-low signal, or point 5 to sense a level or a edge?

A. The NetGuardian's standard configuration is for all alarm points to be level-sensed. You **cannot** use configuration software to convert alarm points to TTL (edge-sensed) operation. TTL alarm points are a hardware option that must be specified when you order your NetGuardian. Ordering TTL points for your NetGuardian does not add to the cost of the unit What you can do with the configuration software is change any alarm point from "Normal" to "Reversed" operation. Switching to Reversed operation has different effects, depending on the kind of input connected to the alarm point:

- **If the alarm input generates an active-high signal,** switching to Reversed operation means the NetGuardian will declare an alarm in the absence of the active-high signal, creating the practical equivalent of an active-low alarm.
- **If the alarm input generates an active-low signal,** switching to Reversed operation means the NetGuardian will declare an alarm in the absence of the active-low signal, creating the practical equivalent of an active-high alarm.
- **If the alarm input is normally open,** switching to Reversed operation converts it to a normally closed alarm point.
- **If the alarm input is normally closed,** switching to Reversed operation converts it to a normally open alarm point.

Q. Every time my NetGuardian starts up, I have to reenter the date and time. How can I get the NetGuardian to automatically maintain the date and time setting?

A. You have three options for keeping the correct time on your NetGuardian:

Real Time Clock Option: You can order your NetGuardian with the Real Time Clock hardware option. Once it's set, the Real Time Clock will keep the correct date and time, regardless of reboots.

Network Time Protocol Synchronization: If your NetGuardian has Firmware Version 2.9F or later, you can configure the unit to automatically synchronize to a Network Time Protocol (NTP) server.

- To get the latest NetGuardian firmware, sign in to MyDPS at www.dpstelecom.com/mydps.
- For instructions on configuring your NetGuardian to use NTP synchronization, see the "Network Time Protocol Support" section of this manual.

T/Mon RTU Time Sync Signal: You can configure your T/Mon NOC to send an RTU Time Sync signal at a regular interval, which you can set to any time period between 10 and 10,080 minutes. The Time Sync will automatically synchronize the NetGuardian's clock to the T/Mon's clock. And if you set your T/Mon to NTP synchronization, you'll make sure you have consistent, accurate time stamps throughout your monitoring network.

Q. How do I back up my NetGuardian configuration?

A. Use FTP

You can use File Transfer Protocol (FTP) to read and write configuration files to the NetGuardian's NVRAM, but you can't use FTP to edit configuration files.

5.2 SNMP FAQs

Q. How do I configure the NetGuardian to send traps to an SNMP manager? Is there a separate MIB for the NetGuardian? How many SNMP managers can the agent send traps to? And how do I set the IP address of the SNMP manager and the community string to be used when sending traps?

A. The NetGuardian begins sending traps as soon as the SNMP managers are defined. The NetGuardian MIB is included on the NetGuardian Resource CD. The MIB should be compiled on your SNMP manager. (**Note:** MIB versions may change in the future.) The unit supports 2 SNMP managers, which are configured by entering its IP address in the Trap Address field of Ethernet Port Setup. You can also configure up to eight secondary SNMP managers, which is configured by selecting the secondary SNMP managers as pager recipients. Community strings are configured globally for all SNMP managers. To configure the community strings, choose System from the Edit menu, and enter appropriate values in the Get, Set, and Trap fields.

Q. Does the NetGuardian support MIB-2 and/or any other standard MIBs?

A. The NetGuardian supports the bulk of MIB-2.

Q. Does the NetGuardian SNMP agent support both NetGuardian and T/MonXM variables?

A. The NetGuardian SNMP agent manages an embedded MIB that supports only the NetGuardian's RTU variables. The T/MonXM variables are included in the distributed MIB only to provide SNMP managers with a single MIB for all DPS Telecom products.

Q. How many traps are triggered when a single point is set or cleared? The MIB defines traps like "major alarm set/cleared," "RTU point set," and a lot of granular traps, which could imply that more than one trap is sent when a change of state occurs on one point.

A. Generally, a single change of state generates a single trap, but there are two exception to this rule. Exception 1: the first alarm in an "all clear" condition generates an additional "summary point set" trap. Exception 2: the final clear alarm that triggers an "all clear" condition generates an additional "summary point clear" trap.

Q. What does "point map" mean?

A. A point map is a single MIB leaf that presents the current status of a 64-alarm-point display in an ASCII-readable form, where a "." represents a clear and an "x" represents an alarm.

Q. The NetGuardian manual talks about eight control relay outputs. How do I control these from my SNMP manager?

A. The control relays are operated by issuing the appropriate set commands, which are contained in the DPS control grid. For more information about the set commands, see Appendix, "Display Mapping," in any of the NetGuardian software configuration guides.

Q. How can I associate descriptive information with a point for the RTU granular traps?

A. The NetGuardian alarm point descriptions are individually defined using the Web Browser or TTY interfaces.

Q. My SNMP traps aren't getting through. What should I try?

A. Try these three steps:

1. Make sure that the Trap Address (IP address of the SNMP manager) is defined. (If you changed the Trap Address, make sure you saved the change to NVRAM and rebooted.)
2. Make sure all alarm points are configured to send SNMP traps.
3. Make sure the NetGuardian and the SNMP manager are both on the network. Use the NetGuardian's ping command to ping the SNMP manager.

5.3 Pager FAQs

Q. Why won't my alpha pager work?

A. To configure the NetGuardian to send alarm notifications to an alpha pager, enter the **data** phone number for your pager in the Phone Number field. This phone number should connect to your pager service's modem. Then enter the PIN for your pager in the PIN/Rcpt/Port field. You don't need to enter anything in any of the other fields. If you still don't receive pages, try setting the Dial Modem Init string to ATS37=9. This will limit the NetGuardian's connection speed. Be sure to use the rpt debug feature, if needed.

Q. Numeric pages don't come in or are cut off in the middle of the message. What's wrong?

A. You need to set a delay between the time the NetGuardian dials your pager number and the time the NetGuardian begins sending the page message. You can set the delay in the Pager Number field, where you enter your pager number. First enter the pager number, then enter some commas directly after the number. Each comma represents a two-second delay. So, for example, if you wanted an eight-second delay, you would enter "555-1212,,,," in the Pager Number field.

Q. What do I need to do to set up e-mail notifications?

A. You need to assign the NetGuardian an e-mail address and list the addresses of e-mail recipients. Let's explain some terminology. An e-mail address consists of two parts, the user name (everything before the "@" sign) and the domain (everything after the "@" sign). To assign the NetGuardian an e-mail address, choose System from the Edit menu. Enter the NetGuardian's user name in the Name field (it can't include any spaces) and the domain in the Location field. For example, if the system configuration reads:

Name: netguardian
Location: proactive.com

Then e-mail notifications from the NetGuardian will be sent from the address "netguardian@proactive.com." The next step is to list the e-mail recipients. Choose Pagers from the Edit menu. For each e-mail recipient, enter his or her e-mail domain in the Phone/Domain field and his or her user name in the PIN/Rcpt/Port field. You must also enter the IP address of an SMTP server in the IPA field and configure the alarm point to use the pager you setup as email.

6 Technical Support

DPS Telecom products are backed by our courteous, friendly Technical Support representatives, who will give you the best in fast and accurate customer service. To help us help you better, please take the following steps before calling Technical Support:

1. Check the DPS Telecom website.
You will find answers to many common questions on the DPS Telecom website, at **http://www.dpstelecom.com/support/**. Look here first for a fast solution to your problem.

2. Prepare relevant information.
Having important information about your DPS Telecom product in hand when you call will greatly reduce the time it takes to answer your questions. If you do not have all of the information when you call, our Technical Support representatives can assist you in gathering it. Please write the information down for easy access. Please have your user manual and hardware serial number ready.

3. Have access to troubled equipment.
Please be at or near your equipment when you call DPS Telecom Technical Support. This will help us solve your problem more efficiently.

4. Call during Customer Support hours.
Customer support hours are Monday through Friday, from 7 A.M. to 6 P.M., Pacific time. The DPS Telecom Technical Support phone number is **(559) 454-1600**.

Emergency Assistance: *Emergency assistance is available 24 hours a day, 7 days a week. For emergency assistance after hours, allow the phone to ring until it is answered with a paging message. You will be asked to enter your phone number. An on-call technical support representative will return your call as soon as possible.*

7 End User License Agreement

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