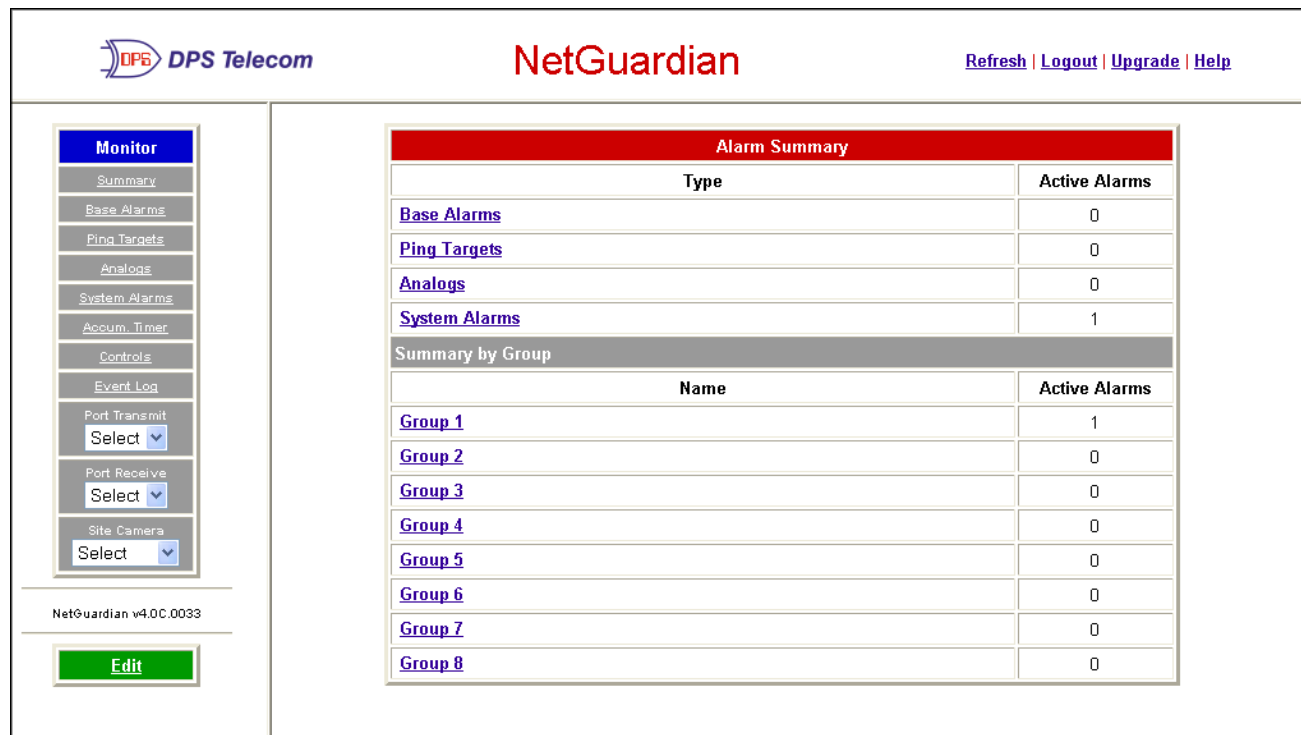


NetGuardian 832A G4 Web Browser

USER MANUAL



The screenshot shows the NetGuardian web browser interface. At the top left is the DPS Telecom logo. The main title is "NetGuardian" in red. On the top right, there are links for "Refresh", "Logout", "Upgrade", and "Help".

On the left side, there is a navigation menu with the following items: Monitor (highlighted in blue), Summary, Base Alarms, Ping Targets, Analogs, System Alarms, Accum. Timer, Controls, Event Log, Port Transmit (with a "Select" dropdown), Port Receive (with a "Select" dropdown), and Site Camera (with a "Select" dropdown). Below the menu, it says "NetGuardian v4.0C.0033" and there is a green "Edit" button.

The main content area displays the "Alarm Summary" page. It features two tables:

Alarm Summary	
Type	Active Alarms
Base Alarms	0
Ping Targets	0
Analogs	0
System Alarms	1

Summary by Group	
Name	Active Alarms
Group 1	1
Group 2	0
Group 3	0
Group 4	0
Group 5	0
Group 6	0
Group 7	0
Group 8	0

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Revision History

March 6, 2020	Minor Updates.
May 1, 2019	Added note to Table 2.G.
February 6, 2018	Updated Display Map and screenshot for XBee/DSCP
June 20, 2013	Added XBee/DSCP device support.
March 22, 2007	Revised with new Display Mapping.
March 31, 2006	Revised to support firmware version 4.0C
May 25, 2005	Revised to support 4.0A series updates: SNMP v2.0c support, Point Grouping, Filter or Reset Event Log, Alarm Sync, etc
March 2, 2005	Revised to support firmware version 3.0J: Proxy Time-out Timer
December 30, 2004	Revised to support 3.0I.
October 8, 2004	Revised to support firmware 3.0D.
March 8, 2004	Revised to support firmware 3.0B.

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1 Overview



Fig. 1.1. NetGuardian 832A G4 monitors alarms, pings network elements, and reports via SNMP, pager, or email

1.1 Introduction

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.

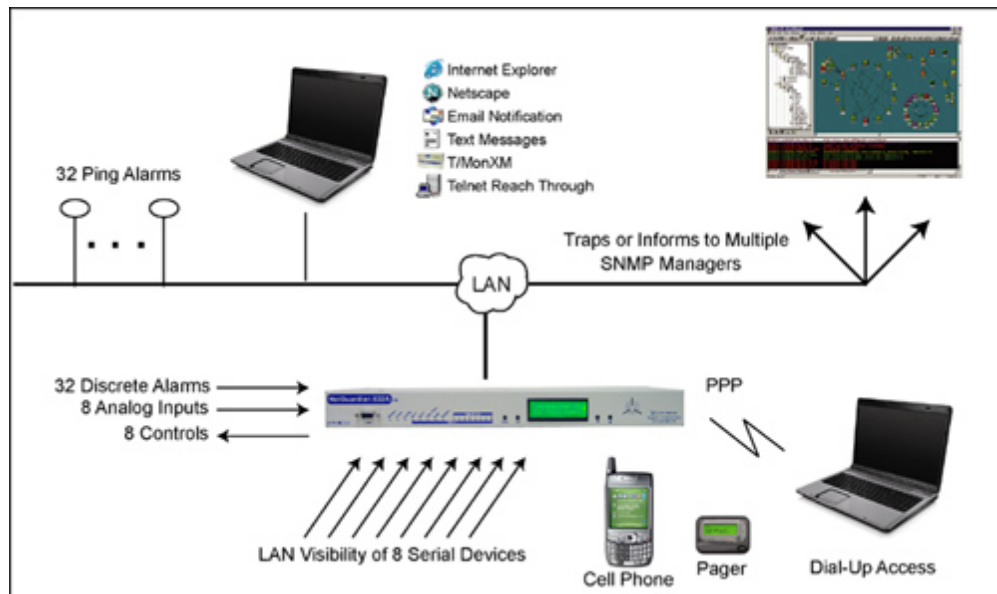


Fig. 1.2. NetGuardian 832A G4 has the capacity to monitor IP aware devices' network presence and also interfaces discrete alarm points and controls at your network sites

1.2 Potential Problems using Web Interface in a Secure Proxy Network

Using the Web Browser Interface for the NetGuardian in a secure proxy network can cause certain problems to occur. If you are logged on to the NetGuardian from within your network through a proxy, and another user from within your network tries to access the same NetGuardian, the second user will not need to login to the NetGuardian. Both users will essentially be logged in using the same IP address because of the masking done by the proxy server.

1.3 What's New in NetGuardian 4.0

The NetGuardian G4 series, available April 2006, adds these new features:

SNMP v2c Support and Robust Message Delivery

NetGuardian G4 supports SNMP v2c, and the SNMP INFORM command, which permits robust delivery of alarm notification to your SNMP manager.

Alarm Point Grouping

Each NetGuardian Alarm point can be assigned to one of eight groups, which are identified with a user-defined label. Some of the ways you can use Alarm Point Grouping include:

Alarm Severity Levels:

Configure the NetGuardian to indicate assigned alarm security levels like Critical, Major, Minor and Status in a variable binding within the SNMP TRAP or INFORM message — so alarms can be sorted by severity even if your SNMP manager doesn't support severity levels.

Two Sets of Alarm Severity Levels:

With 8 alarm groups to work with, you can easily create two different sets of severity levels. For example, you could separate power alarms (rated from Critical to Status) from environmental alarms (also rated Critical to Status).

Custom Virtual Alarms:

Create virtual alarms based on easy formulas like All security alarms or Critical power alarms.

Flexible Custom Derived Controls:

NetGuardian G4 lets you create Derived Controls formulas based on Alarm Point Groups.

Granular Pager and Email Notification:

Selectively assign alarm points to specific pager and email notification recipients. The NetGuardian can be configured to send pager notifications only for Critical or Major alarms — or you can send power alarms to repair technicians and intrusion alarms to a security guard.

Global Support for Dual SNMP Managers

NetGuardian G4 supports sending all SNMP TRAP and INFORM notifications to **two** global SNMP managers. This makes it easier to configure a secondary SNMP manager and frees up your NetGuardian configuration for additional notification devices and more flexible alarm reporting. You can easily send an alarm to your primary SNMP manager at the NOC; to a secondary backup SNMP manager at another location; to the pager of the on-call technician; and the email in-box of the technician's supervisor.

Filter or Reset the NetGuardian Event Log

The NetGuardian Event Log has been enhanced to support new NetGuardian G4 features:

- You can filter Event Log entries by Alarm Point Group, to see only the alarms you want.
- You can reset the Event Log, to clear old alarms from the display.
- You can reset the Event Log by Alarm Point Group; for example, clear power alarms while retaining intruder alarms.

Alarm Sync Makes Turnup and Testing Easy

NetGuardian G4 also provides a new command to re-synchronize all alarms. This command clears all alarms, so that a new notification is sent for all standing alarms. You can easily test alarm connections during turnup without rebooting the NetGuardian unit.

2 Unit Configuration

2.1 Logging on to the NetGuardian

For Web Interface functionality, the unit must first be configured with some basic network information. If this step has not been done, refer to the NetGuardian User Manual for initial software configuration setup.

1. To connect to the NetGuardian from your Web browser, you must know its IP address or domain name if it has been registered with your internal DNS. Enter it in the address bar of your Web browser. It may be helpful to bookmark the logon page to simplify access.
2. After connecting to the NetGuardian's IP address, enter your password and click Submit, see Figure 2.1.
Note: The factory default password is **dpstelecom**.
3. In the left frame there is **Monitor** menu button and an **Edit** menu button. Most of the software configuration will occur in the **Edit** menu. The following sections provide detailed information regarding these functions.



Hot Tip!

If the **Edit** menu does not appear in the left frame after logging on, it means that another station has already logged on as the primary user. The maximum number of users allowed to simultaneously access the NetGuardian via Web is four. The primary user is the only user with access to the editing features.

Exiting the Web interface without logging out prevents other users from accessing the Editing features, as well. Web sessions are tracked by IP Address and the session will time out after twelve minutes of inactivity, unless configured with a longer Web timeout duration. (See section 2.14, "Setting System Timers" for more information.)

Fig. 2.1. Enter your password to enter the NetGuardian Web Browser Interface

2.2 Entering System Settings

From the **System** screen you can enter the name, location, contact, features, and SNMP community names.

Use the following steps to define your NetGuardian system information:

1. From the **Edit** menu choose **System**, see Figure 2.2.
2. Enter the designated user name for your NetGuardian.*
3. Enter the location or address of the NetGuardian.*
4. Set the contact by entering the telephone number or other contact information for the person or group responsible for this NetGuardian.
5. The **Features** field is used for entering feature codes for future upgrades. Do not change this code unless

instructed by DPS Technical Support.

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

* If using email pager type refer to Section 2.5 for correct name and location field formatting.

Fig. 2.2. Configure the system information by selecting the System screen from the Edit menu

Field	Description
Name	Used to set the Name@Location email address. Note: Name is the portion before the @ character.
Location	Used to set the Name@Location email address. Note: Location is the portion after the @ character, this is a host name or IP address.
Contact	Information for how to contact the person responsible for this NetGuardian.
Phone	Contact's telephone number.
Features	Used for entering feature codes for future upgrade features.
Unit ID	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)

Table 2.A. System fields

2.3 Changing the Logon Password

The password can be configured from the **Edit** menu > **Logon** screen > **Master Password** section. The minimum password length is four characters; however, DPS recommends setting the minimum password length to at least five characters. You can also configure security logon profiles to individual access rights and security dial-back functions in the **Logon Profile** screen. (See section 2.3.1 for dial-back and logon profile configuration information.)

Note: The factory default password is **dpstelecom**. DPS Telecom strongly recommends that the default password be changed.

Use the following steps to change the logon password:

1. From the **Edit** menu select **Logon**.
2. Enter the minimum password length you wish to set.
3. Enter your new password in the **Password** and **Confirm Password** fields.
4. Click the **Submit Data** button.

The screenshot shows the NetGuardian web interface. At the top left is the logo for DPS Telecom. At the top center is the title 'NetGuardian'. At the top right are links for 'Refresh', 'Logout', 'Upgrade', and 'Help'. On the left side, there is a navigation menu with 'Monitor' and 'Edit' buttons. Under 'Edit', there is a list of menu items: System, Logon (highlighted), Ports, Filter IPA, SNMP, Notification, Point Groups, Base Alarms, System Alarms, Accum. Timer, Ping Targets, Analog, Controls, Event Qual, Select (dropdown), and Timers. The main content area is titled 'Logon' and contains the following configuration fields:

- Master Password** section:
 - Minimum Length: 5
 - Password: [text input]
 - Confirm Password: [text input]
 - Quiet Logon:
- Advanced** section:

ID	User	Password	Call Back Phone
1	JLEE	*****	
2	AVAILABLE		
3	AVAILABLE		
4	AVAILABLE		
5	AVAILABLE		
6	AVAILABLE		
7	AVAILABLE		
8	AVAILABLE		
9	AVAILABLE		

Fig. 2.3. Configure the password parameters from the Logon screen

2.3.1 Logon Profiles and Access Rights

Creating logon profiles allows you to grant personnel access to certain functions of the NetGuardian without allowing access to sensitive or secure areas of the database.

Use the following steps to create logon profiles:

1. From the **Edit** menu select **Logon**, then click on the **Available** link. (See Figure 2.3.)
2. Enter the user information in the appropriate fields. See Table 2.B for field and access privileges descriptions.
3. Click **Submit Data** to save the user profile.

Logon Profile 1	
User	<input type="text"/>
Password	<input type="text"/>
Confirm Password	<input type="text"/>
Call Back	<input type="text"/>
Access Privileges	
Admin	<input type="checkbox"/>
DB Edit	<input type="checkbox"/>
Monitor	<input type="checkbox"/>
SDMonitor	<input type="checkbox"/>
Control	<input type="checkbox"/>
Reach-Through	<input type="checkbox"/>
Modem	<input type="checkbox"/>
Telnet	<input type="checkbox"/>
PPP	<input type="checkbox"/>

Fig. 2.4. Configure access privileges for users in the Logon Profile screen

Profile Field	Description
User	Enter a username or a user description. (18 characters maximum)
Password	Enter a unique user password. (4 character minimum) Note: This password will be used by the NetGuardian to determine whether or not to initiate the "Call-Back" function and also if any limited access applies.
Confirm Password	Re-enter the password.
Call Back	This is the phone number the NetGuardian uses to call back to the user's modem.
Access Privileges	
Admin	Enables the user to add/modify logon profiles and NetGuardian password information. Note: Selecting security also automatically activates the DB Edit.
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.

Table 2.B. Logon profile field descriptions

2.3.2 Security Dial-Back

The Dial-Back feature serves as an additional level of security when accessing the NetGuardian from the modem. Once users are assigned a logon profile, along with a unique NetGuardian logon password, the unit can be set to initiate a dial-back when a valid logon password is entered. If a valid password is entered users will see **accepted, Disconnecting**. The NetGuardian will then hang up and dial back to the users modem using the number entered in the logon profile. When the NetGuardian dials back, the user will be logged on to whatever security access that user has been granted in their logon profile.



Hot Tip!

To enable dial-back security, at least one of the access privileges must be activated and a call back phone number must be defined. As long as the dial-back security mode is enabled, that will be the only method of external dial-up access to the unit.

2.4 Configuring Port Parameters

The **Edit** menu > **Ports** screen allows you to configure the ethernet, modem, craft port and data port settings.

2.4.1 Ethernet Ports

Use the following steps to configure the ethernet port settings:

1. Configure the NetGuardian ethernet port by clicking on the **Ports** link from the **Edit** menu.
2. Enter the appropriate information for your ethernet port in the corresponding fields. Refer to Figure 2.5 and Table 2.C..
3. Click **Submit Data** to save your configuration settings.

Monitor

NetGuardian-G4 v4.1B.0411

Edit

- System
- Logon
- Ethernet
- Ports
- Filter IPA
- SNMP
- Notification
- Point Groups
- Base Alarms
- System Alarms
- Accum. Timer
- Ping Targets
- Analog
- Controls
- Exp.1 Controls
- Exp.1 Alarms
- Event Qual
- Select ▼
- Timers

Ethernet

NET 1

Unit Address	<input type="text" value="126.010.210.192"/>	(126.010.210.192)
Subnet Mask	<input type="text" value="255.255.192.000"/>	(255.255.192.000)
Gateway	<input type="text" value="126.010.220.254"/>	(126.010.220.254)
MAC Address	<input type="text" value="00.10.81.00.15.AA"/>	

NET 2

Unit Address	<input type="text" value="255.255.255.255"/>	(000.000.000.000)
Subnet Mask	<input type="text" value="255.255.000.000"/>	(000.000.000.000)
Gateway	<input type="text" value="255.255.255.255"/>	(000.000.000.000)
MAC Address	<input type="text" value="00.10.81.00.15.AB"/>	

Global Ethernet Options

DNS Address	<input type="text" value="206.013.031.012"/>	
Proxy Base	<input type="text" value="3000"/>	
DHCP	<input type="checkbox"/>	
Base URL	<input type="text"/>	

Fig. 2.5. All port configuration is accomplished from the Edit menu > Ports screen

Field	Description
Unit Address	IP address of the NetGuardian
Subnet Mask	The Subnet mask is 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 .
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).
DCHP	Toggles the Dynamic Host Connection Protocol On or Off
Base URL	The Base URL is the destination website address o the alarm point descriptions hyperlinks. See Section 2.4.2, "Using the Base URL Field."
MAC Address	Hardware address of the NetGuardian (not editable, for reference only).

Table 2.C. Fields in the Edit > Ports > Ethernet Port settings

2.4.2 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 - Base32.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.

2.4.3 Setting Up The SNMP

Use the following steps to define your NetGuardian system information:

1. From the **Edit** menu choose **SNMP**, see Figure 2.6.
2. Enter the community name for SNMP GET requests.
3. Enter the community name for SNMP SET requests.
4. Enter the community name for SNMP TRAPs.
5. Define the IP address of your trap manager. Set to 255.255.255.255 if not using.
6. Define the UDP port set by the SNMP manager to receive traps; usually 162.
7. Select the Format in which you want your traps to be sent to your manager in.
8. Click **Submit** to save your system information settings.



NetGuardian v4.0C.0033

SNMP

Community Names

Get: public

Set: public

Trap: public

Trap Managers

ID	IPA	Port	Format	Retry	Seconds
1	255.255.255.255	162	v1-Trap	1	1
2	255.255.255.255	162	v2c-Inform	1	1

Submit Data

Fig. 2.6 SNMP Menu

Communities	
G)et	Community name for SNMP requests.
S)et	Community name for SNMP SET requests.
T)rap	Community name for SNMP TRAP requests.
Field	Description
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 SNMPv1 TRAP, SNMP v2c TRAP, and SNMP v2c INFORM.

Table 2.E. Fields in the Edit > SNMP settings

2.4.4 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, see Figure 2.7. Click OK to continue, or Exit to cancel.

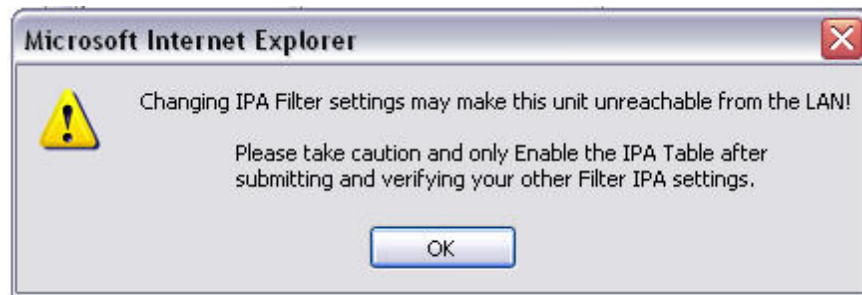


Fig. 2.7. Filter IPA warning prompt

3. Once enabled only the IP addresses in the table will be allowed access to the NetGuardian.
4. Select to **Enable IPA Table**.
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.

Two Modes:

Firewall: Block specific addresses

Filter table: only allow specific addresses



Hot Tip!

Filter IPA table is primarily used for diagnostic purposes and should not be required unless to increase security.

NetGuardian v4.0C.0033

- Edit
- System
- Logon
- Ports
- Filter IPA
- SNMP
- Notification
- Point Groups
- Base Alarms
- System Alarms
- Accum. Timer
- Ping Targets
- Analog
- Controls
- Event Qual
- Select
- Timers
- Date and Time
- PPP

Filter IPA

Enable IPA Table

Block these Addresses (Firewall Mode Enable/Disable)

IPA Table	
ID	Address
1	255.255.255.255 (255.255.255.255)
2	255.255.255.255 (255.255.255.255)
3	255.255.255.255 (255.255.255.255)
4	255.255.255.255 (255.255.255.255)
5	255.255.255.255 (255.255.255.255)
6	255.255.255.255 (255.255.255.255)
7	255.255.255.255 (255.255.255.255)
8	255.255.255.255 (255.255.255.255)
9	255.255.255.255 (255.255.255.255)
10	255.255.255.255 (255.255.255.255)

Fig. 2.8. Select Filter IPA from the Edit menu to configure your Filter IPA table

2.4.5 Changing Craft Port Communication Settings

Use the following steps to change the craft port communication settings:

1. From the **Edit** menu > **Ports** screen, scroll down to the **Craft** section, see Figure 2.9.
2. You can set the baud rate for the craft port to 300, 1200, 2400, 9600, 19200, 38400, 57600, 115200. (Default Baud is 9600)
3. Under the **WfMt** (word format) field, select the appropriate data bits, parity, and stop bits setting to match your terminal emulation software or device connected to the NetGuardian craft port. (Default designation is 8,N,1)
4. Click **Submit Data** to save the craft port settings.

NetGuardian v4.0C.0033

Edit

- System
- Logon
- Ports**
- Filter IPA
- SNMP
- Notification
- Point Groups
- Base Alarms
- System Alarms
- Accum. Timer
- Ping Targets
- Analogs
- Controls
- Event Qual Select
- Timers
- Date and Time
- PPP

NetGuardian [Refresh](#) | [Logout](#) | [Upgrade](#) | [Help](#)

DHCP

Base URL

MAC Address 00.10.81.00.03.59

Craft

Baud 9600

WFmt 8,N,1

Modem

Ring Count 1

Answer Init

Dial Init

Data Ports

ID	Description	Baud	WFmt	CR/LF Mode		RTS Times		Type	Pool
				In	Out	Head	Tail		
1	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N
2	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N
3	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N
4	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N

Fig. 2.9. Configure the front panel craft port parameters from the Ports screen

2.4.6 Configuring Modem Port Settings

Use the following steps to configure the modem port settings:

1. From the **Edit** menu > **Ports** screen, scroll to the **Modem** section, see Figure 2.10.
2. In the **Ring Count** field enter the number of rings before answering. (Default = 1)
3. 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).
4. Click **Submit Data** to save your modem port settings.

Note: The default setting for these fields is blank.

The screenshot shows the NetGuardian web interface. At the top, there is a logo for DPS Telecom and the title "NetGuardian". On the right, there are links for "Refresh", "Logout", "Upgrade", and "Help". The main content area is divided into sections: "Modem" and "Data Ports".

Modem Section:

- WFmt:** 8,N,1 (dropdown menu)
- Ring Count:** 1 (input field)
- Answer Init:** (empty input field)
- Dial Init:** (empty input field)

Data Ports Section:

ID	Description	Baud	WFmt	CR/LF Mode		RTS Times		Type	Pool
				In	Out	Head	Tail		
1	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N
2	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N
3	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N
4	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N
5	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N
6	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N
7	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N
8	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N

On the left side, there is a navigation menu with the following items: Edit (highlighted), System, Logon, Ports, Filter IPA, SNMP, Notification, Point Groups, Base Alarms, System Alarms, Accum. Timer, Ping Targets, Analogs, Controls, Event Qual, Select (dropdown), Timers, Date and Time, and PPP.

Fig. 2.10. 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	

Table 2.F. Standard modem commands (Hayes)

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

2.4.7 Configuring Data Ports 1 - 8

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

Use the following steps to define your data port settings:

1. From the **Ports** window, scroll down to the **Data Ports** section, see Figure 2.11.
2. Under the options heading, enter in the appropriate number of NetGuardian Discrete Expansions (1-3) installed.* Entering zero disables these options.
3. Enter a description for each port with a connected device. The communication settings for each port can be configured for baud rate, word format and to ignore or remove CR/LF (carriage return/line feed) characters in either the input or output data stream.
4. Advanced settings can also be configured when you select an appropriate data port type. See section 2.4.7.1 to select the appropriate data port type setting for your application.



Hot Tip!

NGDdx is an abbreviation for "NetGuardian Expansion." Expansion units enable you to scale from 32 base alarms

and 8 base relays to a maximum of 176 alarm and 32 relays. You can also have one NG480 (configured as a DX) hooked up as an expansion unit. The NG480 will give you an additional 80 alarms and 4 relays.

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

The screenshot shows the NetGuardian-G4 web interface. The top navigation bar includes the DPS Telecom logo, the title 'NetGuardian-G4', and links for 'Refresh', 'Logout', 'Upgrade', and 'Help'. The left sidebar contains a 'Monitor' button and an 'Edit' menu with various system configuration options. The main content area is divided into 'Modem' and 'Data Ports' sections. The 'Data Ports' section features a table with 8 rows, each representing a data port. The table columns are ID, Description, Baud, WFmt, CR/LF Mode (In, Out), RTS Times (Head, Tail), Type, and Pool. All ports are configured with Baud 115200, WFmt 8.N.1, CR/LF Mode Ignore, and RTS Times 0. The 'Options' section at the bottom has a dropdown for 'NGDdx' set to '0-NONE' and a dropdown for 'GLD or BSU' with a list of options: '0-NONE', '1-DX unit', '2-DX units', '3-DX units', and '1-480DX unit'. A 'Submit Data' button is also present.

ID	Description	Baud	WFmt	CR/LF Mode In	CR/LF Mode Out	RTS Times Head	RTS Times Tail	Type	Pool
1		115200	8.N.1	Ignore	Ignore	0	0	OFF	N
2		115200	8.N.1	Ignore	Ignore	0	0	OFF	N
3		115200	8.N.1	Ignore	Ignore	0	0	OFF	N
4		115200	8.N.1	Ignore	Ignore	0	0	OFF	N
5		115200	8.N.1	Ignore	Ignore	0	0	OFF	N
6		115200	8.N.1	Ignore	Ignore	0	0	OFF	N
7		115200	8.N.1	Ignore	Ignore	0	0	OFF	N
8		115200	8.N.1	Ignore	Ignore	0	0	OFF	N

Fig. 2.11. Configure the data port parameters from the Ports screen

2.4.7.1 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 (allows eight serial devices to be connected to single port). See section 2.4.7.2 for more information.

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, 3-4, 5-6, and 7-8. 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 3.8, "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 2.17, "Building Access Controller").

2.4.7.2 Defining SPS8 Ports

The screenshot shows the NetGuardian v4.0C.0033 interface. On the left is a navigation menu with 'Edit' selected. The main area is titled 'Data Ports' and contains a table with 8 rows. The 'Type' column for the 8th row is open, showing a list of options including 'SPS8', which is highlighted. Below the table is a 'Submit Data' button.

ID	Description	Baud	WFmt	CR/LF Mode		RTS Times		Type	Pool
				In	Out	Head	Tail		
1		9600	8,N,1	Ignore	Ignore	0	0	TCP	<input type="checkbox"/>
2		9600	8,N,1	Ignore	Ignore	0	0	TCP	<input type="checkbox"/>
3		9600	8,N,1	Ignore	Ignore	0	0	TCP	<input type="checkbox"/>
4		9600	8,N,1	Ignore	Ignore	0	0	TCP	<input type="checkbox"/>
5		9600	8,N,1	Ignore	Ignore	0	0	TCP	<input type="checkbox"/>
6		9600	8,N,1	Ignore	Ignore	0	0	TCP	<input type="checkbox"/>
7		9600	8,N,1	Ignore	Ignore	0	0	TCP	<input type="checkbox"/>
8		9600	8,N,1	Ignore	Ignore	0	0	TCP	<input type="checkbox"/>

Fig. 2.12. Select SPS8 port type from the Edit > Ports, Data Ports screen

The SPS8 port type can be selected in the **Type** option when configuring data ports with NGEEdit4 or the Web Browser Interface. However, you may only edit SPS8 port descriptions in NGEEdit4. The Web Browser Interface will allow you to set SPS8 type, but not the port descriptions.

The Serial Port Switch 8 (SPS8) 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.



SPS8 ports do not support direct proxy. You must navigate via the TTY menu.

Use the following steps to select a SPS8 port:

1. From the **Edit** menu > **Ports** screen, scroll to the **Data Ports** section.
2. Enter a description and click on the **TCP** link, see Figure 2.11.
3. Under the **Type** column, click on the drop-down menu and select SPS8, see Figure 2.12.
4. Click **Submit Data** to save your configuration settings.

CAUTION: If you initialize the NVRAM, the NetGuardian will erase all SPS8 port descriptions.



If interfacing an IAM-5 to SPS8 through a NetGuardian set port type to TCP.

2.4.7.3 Direct and Indirect Proxy Connections

The NetGuardian supports two proxy connections, direct and indirect. 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. Since the TTY interface is password protected, 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.

One way to disable proxy connections is to set the proxy port to an uncommon value. This restricts the access of other users, but it is more convenient and secure to 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.

Use the following steps to select proxy connections:

1. From the **Edit** menu > **Ports** screen, scroll down to the **Data Ports** section.
2. Enter a description and click on the **TCP** link, see Figure 2.11.
3. Under the **Type** column click on the drop-down menu and select the appropriate proxy connection, see Figure 2.13.
4. Click the **Submit Data** button to save your configuration settings.

The screenshot shows the NetGuardian web interface. At the top, there is a logo for DPS Telecom and the text "NetGuardian". On the right, there are links for "Refresh", "Logout", "Upgrade", and "Help". Below the header, the version "NetGuardian v4.0C.0033" is displayed. On the left, there is a vertical navigation menu with options like "Edit", "System", "Logon", "Ports", "Filter IPA", "SNMP", "Notification", "Point Groups", "Base Alarms", "System Alarms", "Accum. Timer", "Ping Targets", "Analog", "Controls", "Event Qual", "Timers", "Date and Time", "PPP", and "BAC". The main content area is titled "Data Ports" and contains a table with columns: ID, Description, Baud, WFmt, CR/LF Mode (In, Out), RTS Times (Head, Tail), Type, and Pool. The table has 8 rows. The "Type" column for row 1 is open, showing a dropdown menu with options: OFF, TCP, PTCP, HTCP, RTCP, UDP, CHAN, CRFT, CAP, ECU, SPS8, and TCP. A "Submit Data" button is located below the table.

Data Ports									
ID	Description	Baud	WFmt	CR/LF Mode		RTS Times		Type	Pool
				In	Out	Head	Tail		
1		9600	8,N,1	Ignore	Ignore	0	0	OFF	<input type="checkbox"/>
2		9600	8,N,1	Ignore	Ignore	0	0	TCP	<input type="checkbox"/>
3		9600	8,N,1	Ignore	Ignore	0	0	PTCP	<input type="checkbox"/>
4		9600	8,N,1	Ignore	Ignore	0	0	HTCP	<input type="checkbox"/>
5		9600	8,N,1	Ignore	Ignore	0	0	RTCP	<input type="checkbox"/>
6		9600	8,N,1	Ignore	Ignore	0	0	UDP	<input type="checkbox"/>
7		9600	8,N,1	Ignore	Ignore	0	0	CHAN	<input type="checkbox"/>
8		9600	8,N,1	Ignore	Ignore	0	0	CRFT	<input type="checkbox"/>

Fig. 2.13. Set proxy connections in Edit menu > Ports screen > Data Ports


2.5 Setting Up Notification Methods

The **Edit** menu > **Pagers** screen allows you to configure several alarm notification methods in addition to pagers. Each notification method is defined as a pager type in this screen. To define a pager as the primary or secondary notification of alarm conditions, select the pager in the appropriate alarm point provisioning screens.



Hot Tip!

Refer to Section 2.9, "Configuring Base Discrete Alarms," and Section 2.9, "Setting System Alarm Notifications," for more information.



NetGuardian

[Refresh](#) | [Logout](#) | [Upgrade](#) | [Help](#)

Monitor

NetGuardian v4.0C.0033

Edit

- System
- Logon
- Ports
- Filter IPA
- SNMP
- Notification
- Point Groups
- Base Alarms
- System Alarms
- Accum. Timer
- Ping Targets
- Analog
- Controls
- Event Qual
- Timers

Notification							
ID	Type	Phone/Domain	Pin/Rcpt/Port	Baud/WFmt		IPA	Group
1	Off	dpstele	alarmtech	1200	7,E,1	055.113.105.127	0
2	Alpha	dpstele	supervisor	1200	7,E,1	055.113.105.127	0
3	Numeric			1200	7,E,1	209.240.134.104	1
4	Text			1200	7,E,1	255.255.255.255	0
5	T/Mon			1200	7,E,1	255.255.255.255	0
6	TCP			1200	7,E,1	255.255.255.255	0
7	Email			1200	7,E,1	255.255.255.255	0
8	SNMP			1200	7,E,1	255.255.255.255	0
	Num17			1200	7,E,1	255.255.255.255	0
	Off			1200	7,E,1	255.255.255.255	0
	Off			1200	7,E,1	255.255.255.255	0
	Off			1200	7,E,1	255.255.255.255	0

Fig. 2.14. 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.
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. <i>Note: Silencing non-reportable alarms may clear alarm which will prevent sending notifications to T/Mon.</i>)
Email/SMTP Paging	Provides alarm notification via email, with a description similar to the Alphanumeric pager.
SNMP Paging	May send alarm status to multiple SNMP managers, including the SNMP that alarms are reporting to. The SNMP tray format is v1.
TCP (ASCII) Paging	Alarm status notification via multiple TCP or HTCP ports. Connection from a higher level master must be established for alarm notification.
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

Table 2.G. Notification formats

2.5.1 Alpha Numeric 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. From the **Edit** menu > **Notification** screen, select an ID number to use. See Figure 2.14 for pager descriptions.
Note: Pager IDs are used in the alarm provisioning screen to designate the primary and secondary person/device being paged when an alarm condition occurs or clears.
2. Under the **Type** column, select type **Alpha** from the drop-down menu, see Figure 2.14.
3. Enter the phone number of the Alpha numeric pager under the **Phone/Domain** heading.
4. Enter a personal identification number under the **PIN/Rcpt/Port** heading.
5. Set the pager data rate (i.e. 300, 1200, 2400 or 9600). The default baud is 1200.
6. Select a pager word format (Data Bits, Parity, Stop Bits). The default setting is 7,Even,1.

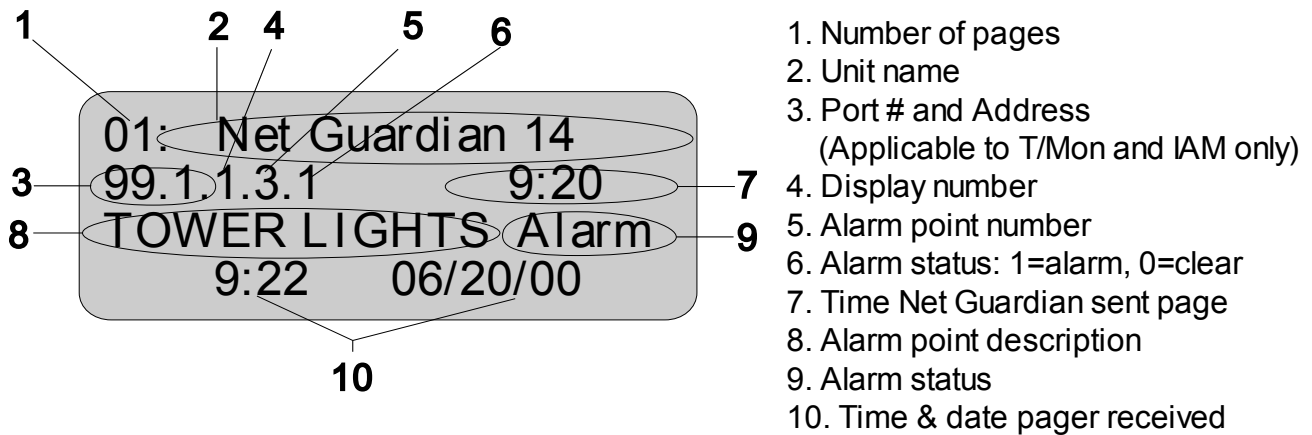


Fig. 2.15. Alpha numeric pager description

2.5.2 Numeric Pager Setup

The numeric pager can receive point addresses of alarms.

Use the following steps to configure the numeric pager settings:

1. From the **Edit** menu > **Notification** screen, select an ID number to use, see Figure 2.14.
Note: Pager IDs are used in the alarm provisioning screen to designate the primary and secondary person/device being paged when an alarm condition occurs or clears.
2. Under the **Type** column select **Numeric** from the drop-down menu, see Figure 2.14.
3. 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.
Note: The Baud/Wfmt and IPA fields are not used from numeric pager types.

2.5.3 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. From the **Edit** menu > **Notification** screen, select an ID number to use, refer to Figure 2.14.
Note: Pager IDs are used in the alarm provisioning screen to designate the primary and secondary person/device being paged when an alarm condition occurs or clears.
2. Under the **Type** column select **Text** from the drop-down menu, see Figure 2.14.
3. Enter the phone number of the text paging device under the **Phone/Domain** heading.
4. Set the pager data rate (i.e. 300, 1200, 2400 or 9600). The default baud is 1,200.
5. 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.

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

2.5.4 Email Notification Setup

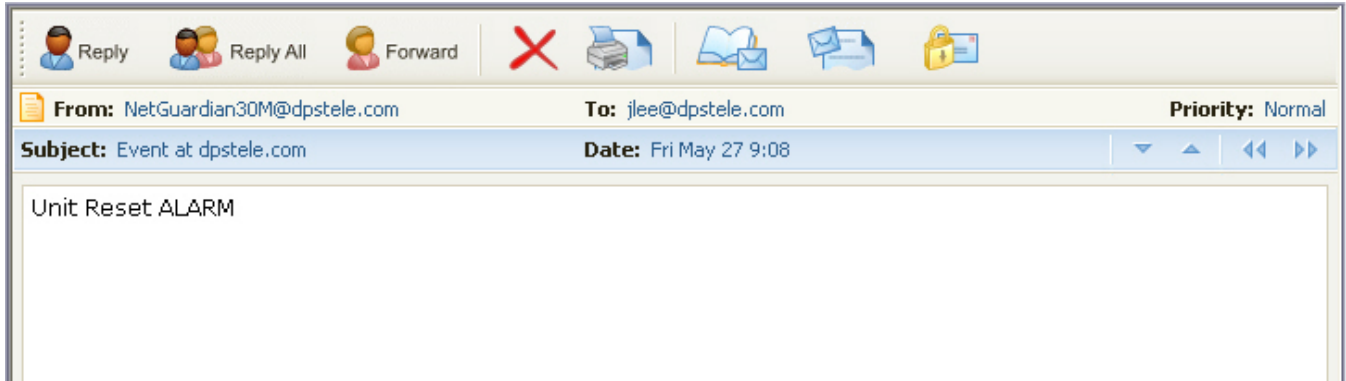


Fig. 2.16. Email notification from the NetGuardian

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

Use the following steps to configure the email notification settings:

1. From the **Edit** menu > **Notification** screen, select an ID number to use, see to Figure 2.14.
Note: Pager IDs are used in the alarm provisioning screen to designate the primary and secondary person/device being paged when an alarm condition occurs or clears.
2. Under the **Type** column, select **Email** from the drop-down menu, see Figure 2.14.
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.

Note: 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.

2.5.4.1 SMTP POP3 Authentication Support

This section contains steps to configure your NetGuardian for SMTP 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.

Authenticated Emails (Note: Only supports POP authentication):

If you want to send an authenticated email to `user@yourdomain.com` from `from@fromdomain.com` with a password then use the following steps:

1. In the **Pin/Rcpt** field type the password.
2. In the **Phone/Domain**, input the address the email will be sent to "`user@yourdomain.com`".
3. Click **Submit Data** to save your changes.
4. Click on the **Edit** menu > **System** link.
5. In the **Name** field type the name of the address you want to receive notifications from the NetGuardian (the part of the email address coming before the `@` symbol - `user@yourdomain.com`).
6. In the **Location** field type the domain of the address you want to receive notifications from the NetGuardian (this is the part of the address coming after the `@` symbol - `user@yourdomain.com`).
7. Click **Submit Data** to save the new system information settings.

2.5.5 SNMP Paging Setup

The SNMP paging feature allows you to view alarm status from multiple SNMP managers in addition to the main one.

Use the following steps to configure the SNMP paging settings:

1. From the **Edit** menu > **Notification** screen select an ID number to use, refer to Figure 2.14.
Note: Pager IDs are used in the alarm provisioning screen to designate the primary and secondary person/device being paged when an alarm condition occurs or clears.
2. Under the **Type** column, select **SNMP** from the drop-down menu, see Figure 2.14.
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.

Note: SNMP trap format is v1.

2.5.6 TCP Paging Setup

```
<MSG_BEG 00001>
VID : DPS Telecom
FID : NetGuardian SNMP v4.0B.0033
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. From the **Edit menu > Notification** screen, select an ID number to use, see Figure 2.14.
Note: Pager IDs are used in the alarm provisioning screen to designate the primary and secondary person/device being paged when an alarm condition occurs or clears.
2. Under the **Type** column, select **TCP** from the drop-down menu, see Figure 2.14.
3. 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.
4. 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.

2.5.7 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.

Use the following steps to configure Num17 Pager settings:

1. From the **Edit menu > Notification** screen select an ID number to use, refer to Figure 2.14.
Note: Pager IDs are used in the alarm provisioning screen to designate the primary and secondary person/

2.7 Configuring Base Discrete Alarms

All of the NetGuardian's 32 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, see Figure 2.19.
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 defined pager list. (See Section 2.5, "Setting up Notification Methods" for more information.)
Note: 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, see section 2.6, "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, refer to section 2.8, "Event Qualification Timers" for more information.
8. Click **Submit Data** to save base alarm configuration settings.



Hot Tip!

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							
ID	Description	Polarity	Trap	Paggers		Group	Qual
				primary	secondary		
1	EQUIP MAJOR	Normal	<input type="checkbox"/>	3	2	1	None
2	EQUIP MINOR	Normal	<input type="checkbox"/>	0	0	1	None
3	INTRSN	Normal	<input type="checkbox"/>	1	2	1	None
4	BEACON	Normal	<input type="checkbox"/>	1	2	1	None
5	SIDE LT	Normal	<input type="checkbox"/>	1	2	1	None
6	HMDTY	Normal	<input type="checkbox"/>	1	2	1	None
7	H2O LEAK	Normal	<input type="checkbox"/>	1	2	1	None
8	FIRE	Normal	<input type="checkbox"/>	1	2	1	None
9	TXA ACTIVE	Normal	<input type="checkbox"/>	1	2	1	None
10	TXB ACTIVE	Normal	<input type="checkbox"/>	1	2	1	None
11	DELAYED	Normal	<input type="checkbox"/>	0	0	1	None
12	FUJSE 112.10	Normal	<input type="checkbox"/>	1	2	1	None

Fig. 2.19. Configure the 32 discrete alarms from the Base Alarms screen

2.8 Event Qualification Timers

Event Qual					
ID	PRef		Timer		Type
	Display	Point	Value	Units	
1	11	1	10	sec	Alm
2	11	2	10	sec	Alm
3	11	3	20	sec	Pri
4	11	4	20	sec	None
5	11	5	10	sec	None
6	11	6	10	sec	None
7	11	7	20	sec	None
8	11	8	10	sec	None
9				sec	None
10				sec	None
11				sec	None
12				sec	None

Fig. 2.20. Edit the Even Qualification Timer settings from the Edit > Even Qual screen

Use the following steps to configure your Event Qual timer settings:

1. From the Edit menu select from the Event Qual drop down menu.
2. The standard NetGuardian units can have up to 128 Event Quals, which are grouped into sections of sixteen.

3. Enter the display and point number for the point you wish to qualify in the appropriate **ID** row.
Note: the ID will correspond to Event Qualification. A list of displays and points can be found in Appendix B.
5. In the **Value** field enter the appropriate amount of time (1 - 127).
6. Under the **Units** column, click on the drop-down menu and select the appropriate unit (min, sec, hour).
7. Under the **Type** column click on the drop-down menu and select the appropriate event type (Alm = alarm, Pri = primary, Sec = secondary).

**Hot Tip!**

To delete the entry, set the **Type** to None.

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

CAUTION: Set conditions are qualified, clears are not.

2.9 Setting System Alarm Notifications

The screenshot shows the NetGuardian web interface. At the top left is the 'DPS Telecom' logo. The title 'NetGuardian' is centered at the top. On the right, there are links for 'Refresh', 'Logout', 'Upgrade', and 'Help'. Below the title bar, there is a 'Monitor' tab and the version 'NetGuardian v4.0C.0033'. A vertical 'Edit' menu is on the left, listing various system settings. The main content area is titled 'System Alarms' and contains a table with the following data:

ID	Description	Trap	Pagers		Group
			primary	secondary	
17	Timed Tick	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	1
18	Exp.Module Callout	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	1
19	Network Time Server	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	1
20	Accumulation Event	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	1
21	Duplicate IP Address	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	1
33	Unit Reset	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	1
36	Lost Provisioning	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	1
37	DCP Poller Inactive	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	1
38	LAN not Active	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	1
41	Modem not Responding	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	1
42	No Dialtone	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	1
43	SNMP Trap not Sent	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	1

Fig. 2.21. 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 Appendix A for system alarm point descriptions.

Use the following steps to configure your system alarm notification settings:

1. From the **Edit** menu select the **System Alarms** link, see Figure 2.21.
2. 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, leaving the box blank will set that point to not send an SNMP trap.
3. Set the primary and secondary pagers with a pager ID from your defined pager list. (See Section 2.5, "Setting up Notification Methods" 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 2.6, "Defining Point Groups."
5. Click **Submit Data** to save the configuration settings.

2.10 Configure the Accumulation Timer

NetGuardian v4.0C.0033

Accum. Timer	
Display Reference	1
Point Reference	12
Point Description	FUSE 112.10
Point Status	Clear
Event Threshold	00 days 00 hours 00 minutes
Accumulated Time	00:00:00 (dd:hh:mm)
Accumulated Since	02-Jan-2000 01:29
Reset Accumulation Timer	<input type="checkbox"/>

Submit Data

Fig. 2.22. Define the Accumulation Timer settings to send an Accumulation Event alarm

Field	Description
Display and Point Reference	Indicates which alarm point is to be monitored
Point Description	The user-defined description of the monitored alarm point.
Point Status	The current status of the monitored point.
Event Threshold	The amount of time allowed to accumulate before the "Accumulation Event" system alarm is set. Maximum is 45 days.
Accumulated Time	The total time the monitored point has been in ALARM state.
Accumulated Since	Indicates the last time the accumulation timer was reset.
Reset Accumulation Timer	Placing a check mark here will reset the timer when the user presses the Submit button.

Table 2.1. Fields in the Accumulation Timer screen

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. Refer to Table 2.1 for field descriptions.

Use the following steps to configure the accumulation timer settings:

1. Go to the **Edit** menu and select the Accum. Timer link, see Figure 2.22.
2. In the **Display Reference** field enter the corresponding display number to be monitored.
3. In the **Point Reference** field enter the corresponding 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.

- Click **Submit Data** to save the configuration settings.



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.

2.10.1 Disabling the Accumulation Timer

To disable the accumulation timer, set all fields for the event threshold (days, hours, and minutes) to 0.

2.11 Configuring Ping Targets

Ping Targets						
ID	Description	IP Address	Trap	Pagers		
				primary	secondary	Group
1	WEB SERVER	255.255.255.255	<input type="checkbox"/>	0	0	1
2	MAIL SERVER	255.255.255.255	<input type="checkbox"/>	0	0	1
3	ROUTER G49	255.255.255.255	<input type="checkbox"/>	0	0	1
4	ROUTER G48	255.255.255.255	<input type="checkbox"/>	0	0	1
5	ROUTER G47	255.255.255.255	<input type="checkbox"/>	0	0	1
6		255.255.255.255	<input type="checkbox"/>	0	0	1
7		255.255.255.255	<input type="checkbox"/>	0	0	1
8		255.255.255.255	<input type="checkbox"/>	0	0	1
9		255.255.255.255	<input type="checkbox"/>	0	0	1
10		255.255.255.255	<input type="checkbox"/>	0	0	1
11		255.255.255.255	<input type="checkbox"/>	0	0	1
12		255.255.255.255	<input type="checkbox"/>	0	0	1

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

Each of 32 the ping targets can be provisioned with a description, an IP address, a choice whether to send SNMP Traps, and the primary and secondary pager devices being used.

Use the following steps to configure the ping targets:

- From the **Edit** menu select **Ping Targets**, see Figure 2.23.
- In the **Description** field, enter a description of the device to be pinged.
- In the **IP Address** field enter the IP address of the device to be pinged.
- 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 designates that an SNMP trap will not be sent when an alarm condition exists.
- Set the primary and secondary pagers with a pager ID from your defined pager list. (See Section 2.5, "Setting up Notification Methods" for more information.)

Note: The NetGuardian 832A G4 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, see section 2.6, "Defining Point Groups."
7. Click **Submit Data** to save the configuration settings.

2.12 Analog Parameters

Each of the NetGuardian 832A G4'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 $^{\circ}$ 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.

The screenshot shows the NetGuardian web interface. At the top, there is a navigation bar with the DPS Telecom logo, the NetGuardian title, and links for Refresh, Logout, Upgrade, and Help. On the left, a vertical menu is visible with 'Monitor' selected at the top and 'Edit' highlighted in green. Below the menu, the version 'NetGuardian v4.0C.0033' is displayed. The main content area is titled 'Analog Parameters' and contains a table with the following data:

ID	Description	Unit	Major Under	Minor Under	Minor Over	Major Over	Trap	Pagers	
								primary	secondary
1	EXTERNAL TEMP	E	-79.0000	-35.0000	35.0000	79.0000	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
2	EXTERNAL HUMIDIT	RH	-79.0000	-35.0000	35.0000	79.0000	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
3	RADIO NORTH-SOL	VDC	-79.0000	-35.0000	35.0000	79.0000	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
4	INTERNAL TEMP	E	-79.0000	-35.0000	35.0000	79.0000	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
5	INTERNAL HUMIDIT	RH	-79.0000	-35.0000	35.0000	79.0000	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
6	BATTERY	VDC	-79.0000	-35.0000	35.0000	79.0000	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
7		VDC	-79.0000	-35.0000	35.0000	79.0000	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
8		VDC	-79.0000	-35.0000	35.0000	79.0000	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

Below the table is a 'Submit Data' button.

Fig. 2.24. The Analog Parameters can be viewed and changed from the Analogs screen

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.) to convert the reference units and the native units for that analog channel, see Figure 2.24.
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), see section 2.6, "Defining Point Groups."
11. Follow these steps for each analog channel being configured.
12. Click the **Submit Data** button to save the configuration settings.

NetGuardian

[Refresh](#) | [Logout](#) | [Upgrade](#) | [Help](#)

Analog Chan 1									
ID	Reference 1		Reference 2		Group				Polarity
	VDC	F	VDC	F	MjU	MnU	MnO	MjO	
1	-35.0000	-35.0000	35.0000	35.0000	8	8	8	8	Normal

Fig. 2.25. Reference 1 and reference 2 correspond to the minimum and maximum output values of your analog device

2.12.1 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: Abort ambient room temperature cooler than the NetGuardian unit temperature.

Temperature Sensor

1. In the **Description** field enter a description in the analog channel you are using for the integrated temperature sensor (either 4 or 8).
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** (internal 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, see section 2.12 for instructions.

Current Sensor

1. In the **Description** field enter a description in the analog channel you are using for the integrated current sensor (either 5 or 7 for power feed "A" or 6 for power input "B").
2. Set your desired thresholds, see section 2.12 for instructions. Be sure to set your thresholds in reference to your NetGuardian's power input (e.g. -24 VDC, -48 VDC, or wide range).

2.12.2 Analog Polarity Override

iF : internal 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.

2.12.3 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

Table 2.J. Analog step sizes

2.13 Configuring the Control Relays

ID	Description	Test	Energize State	Trap	Group
1	01.17-RELAY1	Parse	Normal	<input type="checkbox"/>	1
2	01.18-RELAY2	Parse	Normal	<input type="checkbox"/>	1
3	_AND1.35-5D2.6_ORD3.7	Parse	Normal	<input type="checkbox"/>	1
4	_OR D01.03-05D02.06	Parse	Normal	<input type="checkbox"/>	1
5	_AND01.35-5 DR2.6_OR	Parse	Normal	<input type="checkbox"/>	1
6	_AND1-2	Parse	Normal	<input type="checkbox"/>	1
7		Parse	Normal	<input type="checkbox"/>	1
8		Parse	Normal	<input type="checkbox"/>	1

Fig. 2.26. Configure controls in the Edit menu > Controls screen

The Relays of the NetGuardian 832A G4 can be identified and configured using the **Edit** menu > **Controls** screen. A description can be entered for each of the relays. You can also designate whether or not to send SNMP Traps when a relay is actuated. 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 the NetGuardian user manual for PCB settings and jumper positions.

1. From the **Edit** menu, select the **Controls** link, see Figure 2.26.
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, 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, see section 2.6, "Defining Point Groups."
6. Click **Submit Data** to save the configuration settings.



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 its 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**. Refer to the NetGuardian manual for jumper settings and relay connection options.

4. Check the **Trap** box designate an SNMP trap when a control point operates.

5. Click **Submit Data** to save the configuration settings.

2.13.1 Activating Relays from an Alarm Point's Change of Status

The NetGuardian allows the user to echo an alarm point state to activate a relay. Any of the NetGuardian's discrete alarms, system alarms, ping alarms, or analog alarms may be echoed to activate a relay in the event that alarm is triggered. However, a relay set to echo an alarm point cannot be manually activated. To allow the relay to be manually activated while still maintaining its echoed status, the relay point must be set to **ORed**. See sections 2.13.1.1 and 2.13.1.2 for information regarding echoing and ORing alarm points to relays.

2.13.1.1 Echoing alarm points to relays

In the **Description** field (see Figure 2.26) enter the display, alarm point, a dash (-), and the description of the alarm you wish to echo. For example, if echoing discrete alarm 8, enter **01.08-your alarm description**. (The display and alarm point are formatted as **DD.PP**, where **DD** = the display number and **PP** = the point number or **GX** where **X** is the group number) See Appendix A for a complete list of display and point numbers.

2.13.1.2 Oring echoed alarm points

In the **Description** field enter the display, alarm point, an under bar (_), and the description of the alarm you wish to set to ORed. For example, if ORing discrete alarm 8, enter **01.08_ your alarm description**. The display and alarm point are formatted as **DD.PP**, where **DD** = the display number and **PP** = the point number or **GX** where **X** is the group number) See Appendix A for a complete list of display and point numbers.

2.13.2 Derived Control Relays and Virtual Alarming

Control relays and virtual alarms can be created from derived formulas using the following operations:

_OR : Set the current operation to OR.

_AN : Set the current operation to AND.

_XR : Set the current operation to XOR.

D : Tag to change the active display number.

. : Used like a comma to delimit numbers.

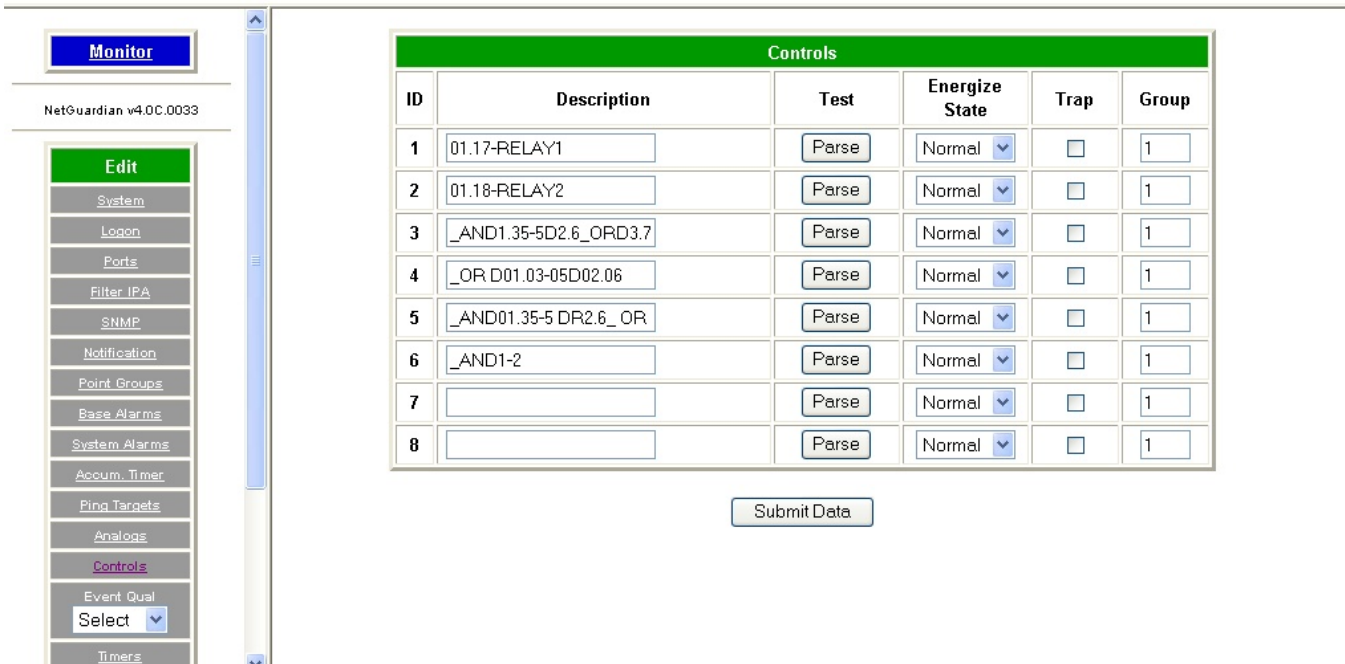
- : Used to specify a range of points.

Note: Spaces included here are for readability purposes only.



Hot Tip!

- Precedence of the operations are always left to right.
- All number references can either be one or two digits.



Controls					
ID	Description	Test	Energize State	Trap	Group
1	01.17-RELAY1	Parse	Normal	<input type="checkbox"/>	1
2	01.18-RELAY2	Parse	Normal	<input type="checkbox"/>	1
3	_AND1.35-5D2.6_ORD3.7	Parse	Normal	<input type="checkbox"/>	1
4	_OR D01.03-05D02.06	Parse	Normal	<input type="checkbox"/>	1
5	_AND01.35-5 DR2.6_OR	Parse	Normal	<input type="checkbox"/>	1
6	_AND1-2	Parse	Normal	<input type="checkbox"/>	1
7		Parse	Normal	<input type="checkbox"/>	1
8		Parse	Normal	<input type="checkbox"/>	1

Submit Data

Fig. 2.27. Derived control relays

_OR D1.3-5 is logically equivalent to (1.3 || 1.4 || 1.5)

_AND 1.3-5 D2.6 _OR D3.7 is logically equivalent to ((1.3 && 1.4 && 1.5 && 2.6) || 3.7)

_OR D01.03-05 D02.06 _AND D02.07 D03.10-12 is logically equivalent to ((1.3 || 1.4 || 1.5 || 2.6 && (2.7 && 3.10 && 3.12))

_AND D1.3-5D2.6_OR.7D3.10.12 is logically equivalent to ((1.3 && 1.4 && 1.5 && 2.6) || 2.7 || 3.10 || 3.12))

o will not parse

_AND D1-2 : Control will parse

_OR G1 will latch if any alarm in group 1 is active

2.13.3 Relay Operating Modes

A trap is sent on a relay COS for normal or echoed controls when the send trap option is selected. A trap is also sent when an oRed relay is manually controlled. A trap will not be sent for an ORed relay latched or released due to an alarm echo.

Each relay can be mapped to one alarm point. Any system, base, or expansion point can be used. Multiple alarm points cannot be mapped to the same control.

The operation of a control is determined by the first six characters of the control description. The format DD.PP is used to specify the display and point number of the alarm to be mapped to the control.

2.13.3.1 Echoed Mode

An echoed control reflects the state of the alarm for which it is assigned. The user is blocked from using manual control commands, like **opr** and **r1s**.

Description format DD.PP- where DD = Display #, and PP = Point #. Example: 01.08-My Control : Echoes the state of the alarm at display 1, point 8 to the relay, see Figure 2.27.

2.13.3.2 ORed Mode

An ORed control is active if the alarm for which it is assigned is active or if the control has been manually activated. The user will see the relay mode displayed in red text.

Note: This will not work with Boolean equations.

Description format **DD** - **PP**_, where **DD** = Display #, and **PP** = Point #. Example: **01_08_My Control** : ORs the state of the alarm at display1, point 8 to the relay, see Figure 2.27.

2.13.3.3 Normal Mode

Relay energized state is similar to alarm point polarity. A normal control is latched when the relay state is **opr**, and open when the relay state is **r1s**. Conversely, an inverted control is latched when the relay state is **r1s**, and open when the relay state is **opr**.

In normal mode, the description does not follow formatting for echoed or ORed modes. Example: **My Control** : Normal relay operation, see Figure 2.27.

2.13.4 Override Default Relay Momentary Time Using Event Qualification

The screenshot shows the NetGuardian web interface. At the top, there is a logo for DPS Telecom and the title 'NetGuardian'. On the right, there are links for 'Refresh', 'Logout', 'Upgrade', and 'Help'. On the left, there is a 'Monitor' button and a version number 'NetGuardian v4.0C.0033'. Below that is an 'Edit' menu with various options, and 'Event Qual' is selected. The main content area displays a table titled 'Event Qual' with the following data:

Event Qual					
PRef		Timer			
ID	Display	Point	Value	Units	Type
1	11	1	10	sec	Alm
2	11	2	10	sec	Alm
3	11	3	20	sec	Pri
4	11	4	20	sec	None
5	11	5	10	sec	None
6	11	6	10	sec	None
7	11	7	20	sec	None
8	11	8	10	sec	None
9				sec	None
10				sec	None
11				sec	None
12				sec	None

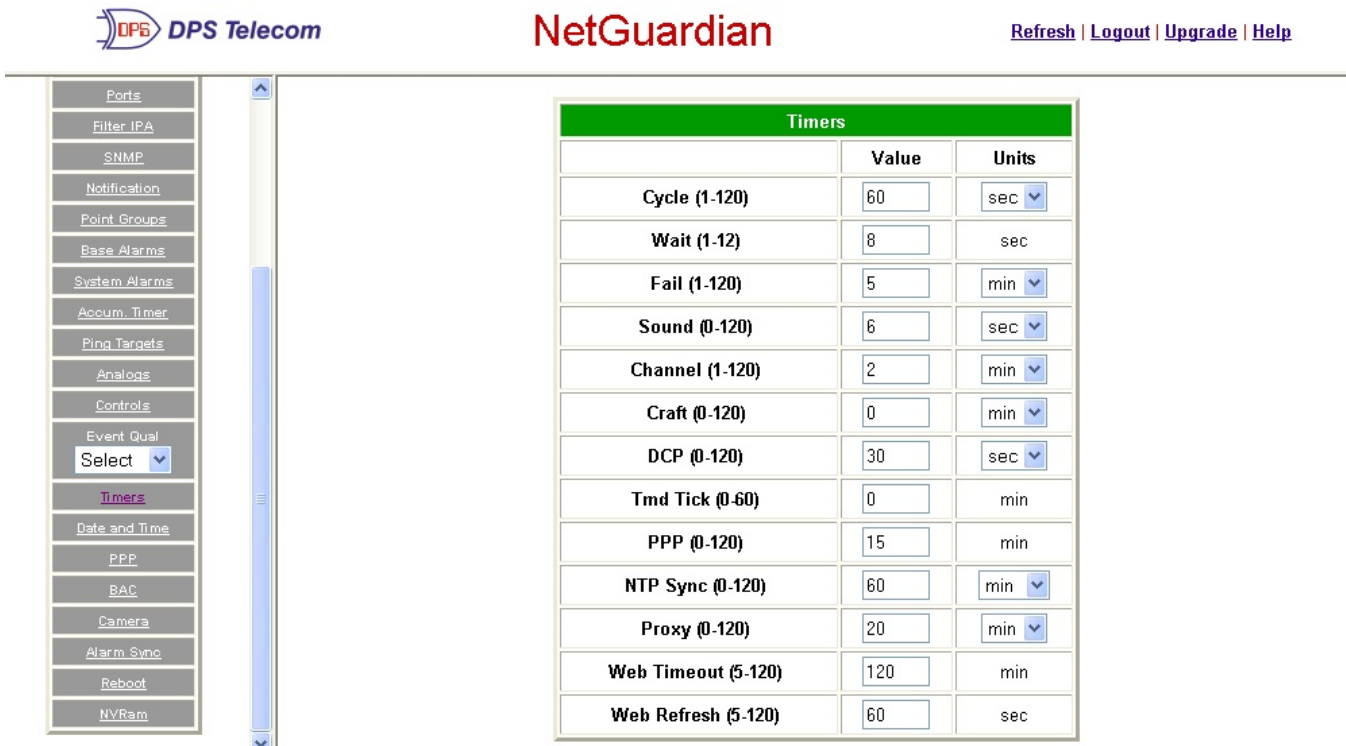
Fig. 2.28. Using Event Qualification to override default relay momentary time

Use the following steps to override default relay momentary time, using the NetGuardian's Event Qualification feature:

1. From the **Edit** menu click on the **Event Qual** drop-down menu and select the appropriate group.
2. In the **Display** text box, type **11**.
3. In the **Point** text box, type the number of the relay you would like to change.
4. In the **Value** box, type the amount of time. You may not select more than 127 units.
5. In the **Units** box, select the appropriate units (seconds, minutes, or hours).
6. In the **Type** box, select **Alm**.

7. Click **Submit Data** to save the changes.

2.14 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 (5-120)	120	min
Web Refresh (5-120)	60	sec

Fig. 2.29. When a target fails to respond to a ping within the fail time period, a fault is declared

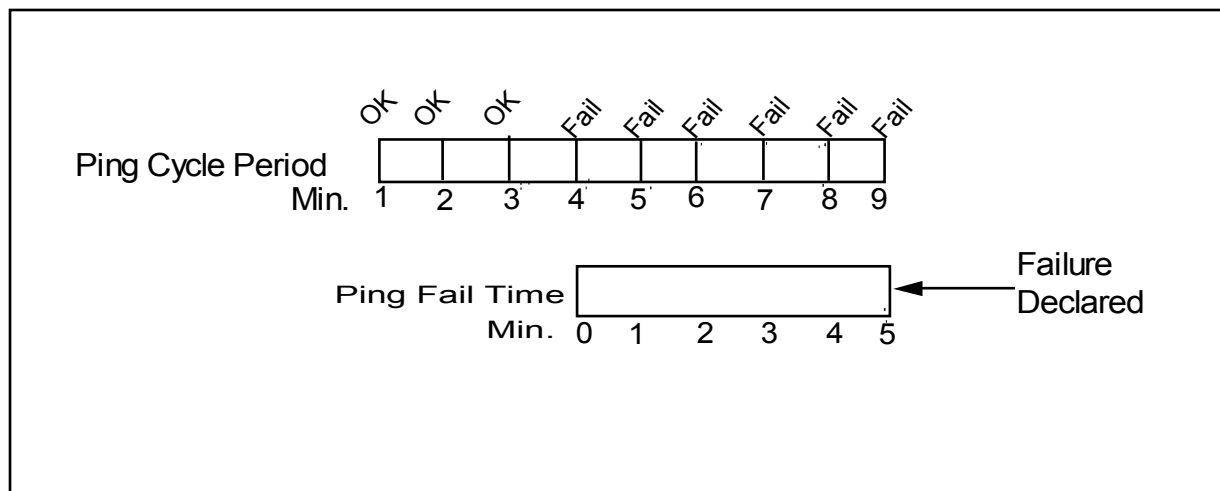


Fig. 2.30. Default timer settings

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 LAN.

1. From the **Edit** menu select **System Timers**, see Figure 2.29.
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 (see Section 2.2.4), 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 2.5, "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).

**Hot Tip!**

The timer settings are accurate to \pm 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.

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.

2.15 Setting the System Date and Time

The screenshot shows the NetGuardian web interface. At the top left is the 'DPS Telecom' logo. At the top center is the 'NetGuardian' title. At the top right are links for 'Refresh', 'Logout', 'Upgrade', and 'Help'. On the left is a vertical navigation menu with various system management options. The main content area is titled 'Date and Time' and contains a form for configuring the system's date and time. The form is divided into two sections: 'Current Setting' and 'Network Time Configuration'. The 'Current Setting' section includes fields for Date (03 / 31 / 2006), Day (Friday), and Time (11 : 04 : 26). The 'Network Time Configuration' section includes fields for Time Server IPA (255.255.255.255), Time Server Port (123), Timezone (Pacific), and Observe DST (checked). A 'Submit Data' button is located at the bottom of the configuration area.

Fig. 2.31. 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.

Note: 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. (See the section 2.15.1 for instructions on setting the network time configuration.)

2.15.1 Network Time Protocol Support

The screenshot shows the NetGuardian web interface. On the left is a sidebar with a menu of configuration options: Ports, Filter IPA, SNMP, Notification, Point Groups, Base Alarms, System Alarms, Accum. Timer, Ping Targets, Analogs, Controls, Event Qual (with a 'Select' dropdown), Timers, Date and Time (highlighted), PPP, BAC, Camera, Alarm Sync, Reboot, and NVRam. The main content area is titled 'Date and Time' and is divided into two sections: 'Current Setting' and 'Network Time Configuration'.

Current Setting

Date	Mar 31, 2006
Day	Friday
Time	11:04:27

Network Time Configuration

Time Server IPA	129.006.015.028
Time Server Port	123
Timezone	Pacific
Observe DST	<input type="checkbox"/>

The 'Timezone' dropdown menu is open, showing a list of time zones: Atlantic, Eastern, Central, Mountain, Pacific (highlighted), Alaskan, Hawaiian, and GMT. A 'Submit' button is visible below the dropdown.

Fig. 2.32. Configure the Network Time Protocol feature in the Date and Time screen

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. You may also change the server IP Address that the NetGuardian syncs with by entering a the appropriate IP address in the **Time Server IPA** field.
5. If you do not want your NetGuardian to sync with an NTP server, simply set the Time Server IPA to 255.255.255.255.
Note: If Time Server IPA is set to 255.255.255.255, you will be able to manually adjust the date and time.
6. Click **Submit Data** to save the date and time settings.

2.16 Configuring DSCP Devices



Note: This feature requires a special firmware. DSCP wireless support firmware restricts the use of some other NetGuardian G4 features, such as GLD, Building Access ECU, and Cameras.

Ports									
Craft									
Baud	9600								
WFmt	8.N.1								
Modem									
Ring Count	1								
Answer Init									
Dial Init									
Data Ports									
ID	Description	Baud	WFmt	CR/LF Mode		RTS Times		Type	Pool
				In	Out	Head	Tail		
1	DSCP port	9600	8.N.1	Ignore	Ignore	0	0	DSCP	N
2		115200	8.N.1	Ignore	Ignore	0	0	OFF	N
3	Serial Device 1	115200	8.N.1	Ignore	Ignore	0	0	OFF	N
4	Serial Device 2	115200	8.N.1	Ignore	Ignore	0	0	OFF	N
5		115200	8.N.1	Ignore	Ignore	0	0	OFF	N
6	NGDDX1	2400	8.N.1	Ignore	Ignore	0	0	NGDDX	N
7	NGDDX2	2400	8.N.1	Ignore	Ignore	0	0	NGDDX	N
8	NGDDX3	2400	8.N.1	Ignore	Ignore	0	0	NGDDX	N
Options									
NGDdx	3-DX units								
GLD or BSU	0 (Disabled)								

Submit Data

Configure your Serial/Data Ports through the Edit > Ports screen

Use the following steps to configure your DSCP device settings:

1. From the Edit > Ports menu, select the 'DSCP' type for the serial port the DSCP device is connected to.

Note: Refer to section 2.4.7 **Configuring Data Ports 1-8** for detailed instructions regarding configuring the Data Ports.

2. From the Edit > DSCP menu, input a value for the Update Frequency (the rate the sensor will report data back to the host NetGuardian unit).
3. Select the type of DSCP device.
4. Click 'Submit Data' to save your settings.

DSCP (wireless sensor)									
Module Configuration									
Module Address High	0013A200								
Module Address Low	40B1677D								
Update Frequency	1 hours								
Type	Propane Monitor ▾								
Fuel Level Change Detection									
Read Frequency	1 hours (0 to disable)								
Level Threshold	2 %								
Generator Running Detection									
Gen. Running Frequency	1 hours								
Generator Point Reference	Display: 0 Point: 0 (0, 0 to disable)								
Analog Configuration									
ID	Description	Unit	Major Under	Minor Under	Minor Over	Major Over	Trap	Paggers	
1	PROPANE SENSOR	%	30.0000	50.0000	100.0000	100.0000	<input checked="" type="checkbox"/>	primary	secondary
2	BATTERY VOLTAGE	VDC	-79.0000	-35.0000	35.0000	79.0000	<input checked="" type="checkbox"/>	0	0

Submit Data

Configure your external DSCP devices through the Edit > DSCP screen

Advanced Configuration and Details:

Module Configuration	
Module Address High	4-byte identification address that is automatically acquired when the DSCP device is sync'd with the NetGuardian.
Module Address Low	4-byte identification address that is automatically acquired when the DSCP device is sync'd with the NetGuardian.
Update Frequency	The rate that the DSCP device will collect information from the sensor.
Type	The specific type of DSCP device (Propane Monitor, Track Monitor, etc...).
Level Detection (Propane Sensor Type Only)*	
Read Frequency	The DSCP device will read the propane level at this frequency and will remember the last read value. Input '0' to disable this feature.
Level Threshold	If the propane level reading differs by the Level Threshold value from the previous reading, then the most recently read value will immediately be sent to the NetGuardian once.
Generator Running Detection (Propane Sensor Type Only)*	
Gen. Running Frequency	When the specified alarm point (from Generator Point Reference) is set, the timer value for Generator Running Frequency will override the timer value for Update Frequency (under Module Configuration). This takes effect after the next update.
Generator Point Reference	Specify the Display and Point attached to Gen. Running Frequency. Input '0' to disable this feature.

***Note:** Generator Run and Level Detection features are designed to detect changes faster while maximizing battery life. They are entirely optional to use.

Refer to section **2.12 Analog Parameters** for detailed instructions on analog channel configuration.

2.17 Configuring PPP Modes

The screenshot shows the NetGuardian web interface. At the top left is the DPS Telecom logo. At the top center is the NetGuardian logo. At the top right are links for Refresh, Logout, Upgrade, and Help. On the left is a vertical sidebar menu with various configuration options. The main content area is titled 'PPP' and contains a form with the following sections:

- Configuration:**
 - Port: Modem (dropdown)
 - VJ Compression:
- Client:**
 - Mode: Backup (dropdown)
 - Phone: 5594641600 (text input)
 - Username: DPS (text input)
 - Password: dpstelecom (text input)
- Server:**
 - Enable Server:
 - Address: 255.255.255.255 (Client Specified) (text input)

A 'Submit Data' button is located below the form.

Fig. 2.33. 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.

Use the following steps 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.

Monitor

NetGuardian v4.0C.0033

Edit

- System
- Logon
- Ports
- Filter IPA
- SNMP
- Notification
- Point Groups
- Base Alarms
- System Alarms
- Accum. Timer
- Ping Targets
- Analog
- Controls
- Event Qual
- Select ▼
- Timers

Base URL		<input type="text"/>							
MAC Address		00.10.81.00.03.59							
Craft									
Baud		9600 ▼							
WFmt		8,N,1 ▼							
Modem									
Ring Count		1							
Answer Init		&Q6							
Dial Init		<input type="text"/>							
Data Ports									
				CR/LF Mode		RTS Times			
ID	Description	Baud	WFmt	In	Out	Head	Tail	Type	Pool
1	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N
2	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N
3	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N
4	<input type="text"/>	9600	8,N,1	Ignore	Ignore	0	0	TCP	N

Fig. 2.34. 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. In the Ring Count field enter a ring count greater than zero, see Figure 2.34.
7. In Answer Init String field type &Q6.
8. Click Submit Data to save your Modem changes.

The screenshot shows the NetGuardian web interface. At the top left is the DPS Telecom logo. The title 'NetGuardian' is centered at the top. On the right, there are links for 'Refresh', 'Logout', 'Upgrade', and 'Help'. On the left side, there is a 'Monitor' button and a version number 'NetGuardian v4.0C.0033'. Below that is an 'Edit' menu with various options like System, Logon, Ports, etc. The 'Logon' option is selected. The main content area shows the 'Logon Profile 1' configuration. It includes fields for 'User' (DPS), 'Password', 'Confirm Password', and 'Call Back'. Below these is the 'Access Privileges' section with checkboxes for Admin, DB Edit, Monitor, SDMonitor, Control, Reach-Through, Modem, Telnet, and PPP. The 'Telnet' and 'PPP' checkboxes are checked. A 'Submit Data' button is at the bottom right.

Logon Profile 1	
User	DPS
Password	••••••••
Confirm Password	••••••••
Call Back	
Access Privileges	
Admin	<input type="checkbox"/>
DB Edit	<input type="checkbox"/>
Monitor	<input type="checkbox"/>
SDMonitor	<input type="checkbox"/>
Control	<input type="checkbox"/>
Reach-Through	<input type="checkbox"/>
Modem	<input type="checkbox"/>
Telnet	<input checked="" type="checkbox"/>
PPP	<input checked="" type="checkbox"/>

Fig. 2.35. Select PPP and Telnet access privileges in the Edit menu > Logon > Logon Profiles screen

9. 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 2.21, "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.

2.18 Building Access Controller

The screenshot shows the NetGuardian web interface for editing BAC configuration. The left sidebar lists various system settings, with 'BAC' selected. The main configuration area is titled 'BAC' and includes the following fields:

- BAC Unit ID:** N/A (Disabled)
- Direction Enabled:**

Below the configuration fields is a table for Entry Codes:

Entry Code			
ID	Default	ID	Default
1	<input type="text"/>	9	<input type="text"/>
2	<input type="text"/>	10	<input type="text"/>
3	<input type="text"/>	11	<input type="text"/>
4	<input type="text"/>	12	<input type="text"/>
5	<input type="text"/>	13	<input type="text"/>
6	<input type="text"/>	14	<input type="text"/>
7	<input type="text"/>	15	<input type="text"/>
8	<input type="text"/>	16	<input type="text"/>

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

Fig.2.36. Edit BAC configuration settings in the Edit menu > BAC screen

The Building Access Controller (BAC) option is only available if the BAC is installed on the NetGuardian. (See BAC user manual for more information.)

Use the following steps to configure the BAC settings:

1. Enter a password for each door point being used. The passwords entered here are for turnup and test procedures only and are only effective until the BAC provisioning information is downloaded from an T/Mon master. Once the information is downloaded from T/Mon, the passwords entered here will be replaced with the new passwords.
2. Enter the BAC unit ID number. This is the DCP address of the BAC module. It must match the base address being polled by the Master. Any range from 1-255 is acceptable or enter zero to disable.



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.

Be sure to define the data port you are using for the ECU as an ECU type. (See Section 2.4.6.1, "Data Port Types.")

If there is no information downloaded from the T/Mon regarding a door point with a NetGuardian password, the NetGuardian password will remain valid.

2.19 Camera Settings

The NetGuardian SiteCam 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.

Use the following steps to configure your camera settings:

1. From the **Edit** menu select **Camera**, see Figure 2.37.
2. Refer to Table 2.K and enter the appropriate information in the **Name**, **Description**, **IP Address**, and **MAC Address** fields.

Note: See Section 3.9, "Monitoring Camera Activity" for camera viewing options.

3. Click **Submit Data** to save your camera configuration settings.

The screenshot shows the NetGuardian web interface. At the top left is the 'DPS Telecom' logo. In the center is the 'NetGuardian' title. On the right are links for 'Refresh', 'Logout', 'Upgrade', and 'Help'. A left sidebar contains a list of menu items: Ports, Filter_IPA, SNMP, Notification, Point Groups, Base Alarms, System Alarms, Accum. Timer, Ping Targets, Analogs, Controls, Event Qual (with a 'Select' dropdown), Timers, Date and Time, PPP, BAC, Camera (highlighted in purple), Alarm Sync, Reboot, and NVRam. The main content area is titled 'Camera' and contains a table with the following data:

ID	Name	Description	IP Address	MAC Address	Refresh
1	Camera 1	Metal Shop	126.010.221.050	FF.FF.FF.FF.FF.FF	0
2	Camera 2		255.255.255.255	FF.FF.FF.FF.FF.FF	0
3	Camera 3		255.255.255.255	FF.FF.FF.FF.FF.FF	0
4	Camera 4		255.255.255.255	FF.FF.FF.FF.FF.FF	0

Below the table is a 'Submit Data' button.

Fig. 2.37. View live streaming video of your remote sites via Web browser

Camera Field	Description
Name	Enter the name of the camera.
Description	Enter a description of the camera.
IP Address	Enter the IP Address of the camera (not the NetGuardian). The NetGuardian will provision this in the camera. The unit will also send the NetGuardian subnet and gateway information.
MAC Address	Enter the hardware address of the camera (not the NetGuardian).
Refresh	Enter the refresh time. This determines the amount of time (in seconds) that elapses before the image will be updated. Entering 0 will cause uninterrupted, live streaming video (bandwidth rated at 146 kB per second).

Table 2.K. Camera field descriptions

Camera Internet 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.

Note: 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 Windows 2000 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**.

2.20 Alarm Sync



New Feature!

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. You can 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, see Figure 2.38.

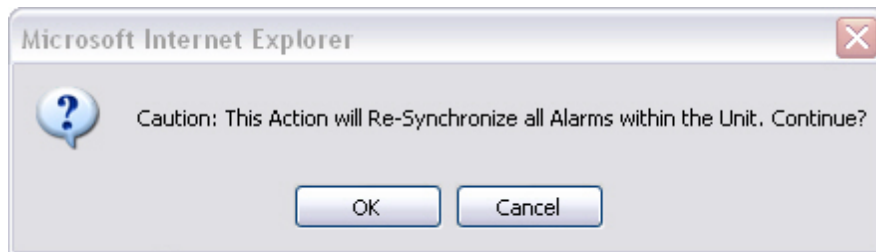


Fig. 2.38. Click Ok to re-synchronize the NetGuardian alarms or Cancel to exit

2.21 Saving Changes or Resetting Factory Defaults

Your NetGuardian 832A G4 comes equipped with Non Volatile RAM (NVRAM), which enables the retention of data in the event of power loss. This section allows you to write and initialize the NVRAM.

Note: Some changes require a reboot of the NetGuardian to take effect, see Section 2.21, "Rebooting the NetGuardian."

1. From the **Edit** menu select **NVRAM**, see Figure 2.39.
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-ENTER ALL OF YOUR CONFIGURATION INFORMATION AGAIN.

4. Select **Purge BAC** to delete the Building Access Controller profile database.

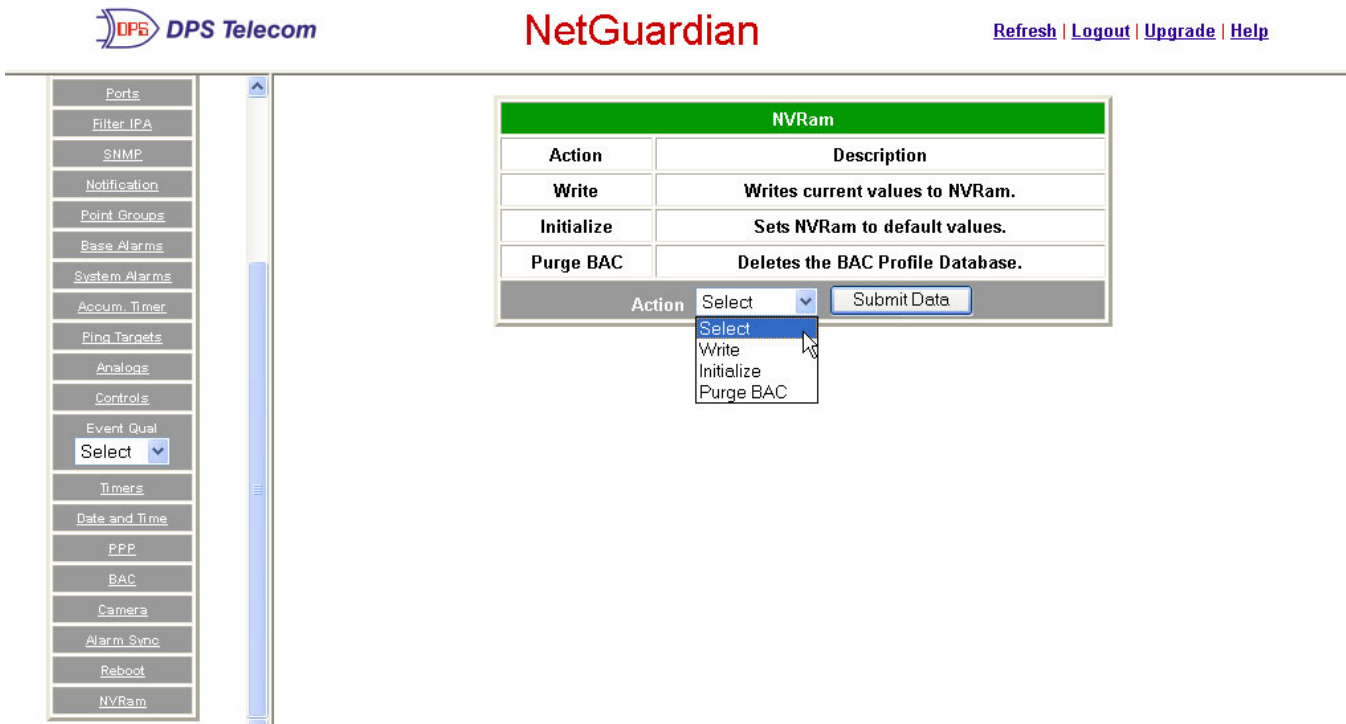


Fig. 2.39. NVRAM enables the NetGuardian to retain data even through a power loss

2.22 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.

3 Web Server Monitoring Chapter 3

The Web browser allows you to do full-system monitoring for your NetGuardian, which includes all alarms, ping information, relays, analogs and system status. To connect to the NetGuardian from your Web browser, you must know its IP address or domain name if it has been registered with your internal DNS. Enter it in the address bar of your Web browser (it may be helpful to bookmark the logon page to simplify access). After connecting to the NetGuardian's IP address, enter your password and click **Submit** (factory default password is **dpstelecom**).

Note: If the **Edit** menu does not appear in the left frame after logging on, it means that another station has already logged on as the primary user.

3.1 Alarm Summary Window



Address <http://126.10.220.63/main.html> Go Links »

DPS Telecom **NetGuardian** [Refresh](#) | [Logout](#) | [Upgrade](#) | [Help](#)

Monitor

- Summary
- Base Alarms
- Ping Targets
- Analog
- System Alarms
- Accum. Timer
- Controls
- Event Log
- Port Transmit
Select ▼
- Port Receive
Select ▼

NetGuardian v4.0A.0286

Edit

Alarm Summary	
Type	Active Alarms
Base Alarms	1
Ping Targets	0
Analogs	0
System Alarms	0
Summary by Group	
Name	Active Alarms
Group 1 - Critical	1
Group 2 - Major	0
Group 3 - Minor	0
Group 4 - Status	0
Group 5 - Env-Crit	0
Group 6 - Env-Maj	0
Group 7 - Env-Min	0
Group 8 - Env-Stat	0

Fig. 3.1. The Alarm Summary display can be accessed by selecting either the Monitor or the Summary link

Clicking on the Monitor or Summary buttons shows the Alarm Summary display. The Summary screen gives you a quick indication of any alarms that have been triggered in the NetGuardian's base alarms, ping targets, analogs, system alarms, and any NetGuardian discrete expansions.

3.2 Monitoring Base Alarms

Address <http://126.10.220.63/main.html> Go Links »

 **NetGuardian** [Refresh](#) | [Logout](#) | [Upgrade](#) | [Help](#)

Monitor

[Summary](#)

[Base Alarms](#)

[Ping Targets](#)

[Analog](#)

[System Alarms](#)

[Accum. Timer](#)

[Controls](#)

[Event Log](#)

Port Transmit
Select ▼

Port Receive
Select ▼

NetGuardian v4.0A.0286

[Edit](#)

Base Alarms		
Point	Description	State
1	EQUIP MAJOR	Critical
2	EQUIP MINOR	Clear
3	INTRSN	Clear
4	BEACON	Clear
5	SIDE LT	Clear
6	HMDTY	Clear
7	H2O LEAK	Clear
8	FIRE	Clear
9	TXA ACTIVE	Clear
10	TXB ACTIVE	Clear
11	DELAYED	Clear
12	FUSE 112.10	Clear
13	FUSE 112.11	Clear
14	RECTIFIER 1	Clear
15	RECTIFIER 2	Clear
16	RECTIFIER 3	Clear

Fig. 3.2. View the status of the Base Alarms from the Monitor > Base Alarms screen

This selection provides the status of the system's base alarms by indicating if an alarm has been triggered. Under the **State** column, the description defined in **Edit menu > Point Groups** will appear in red if an alarm has been activated. The description defined in **Edit menu > Point Groups** will be displayed in green when the alarm condition is not present.

3.3 Monitoring Ping Targets

The screenshot shows the NetGuardian web interface. The address bar indicates the URL is <http://126.10.220.63/main.html>. The header features the DPS Telecom logo, the title "NetGuardian", and navigation links for "Refresh", "Logout", "Upgrade", and "Help".

On the left side, there is a "Monitor" menu with the following options: Summary, Base Alarms, Ping Targets (highlighted), Analogs, System Alarms, Accum. Timer, Controls, Event Log, Port Transmit (with a "Select" dropdown), and Port Receive (with a "Select" dropdown). Below the menu, the version "NetGuardian v4.0A.0286" is displayed, and an "Edit" button is visible.

The main content area displays a table titled "Ping Targets" with the following data:

Point	Description	State
1	WEB SERVER	Clear
2	MAIL SERVER	Clear
3	ROUTER G49	Clear
4	ROUTER G48	Clear
5	ROUTER G47	Clear
6		Clear
7		Clear
8		Clear
9		Clear
10		Clear
11		Clear
12		Clear
13		Clear
14		Clear
15		Clear
16		Clear

Fig. 3.3. View the status of the Ping Targets from the Monitor > Ping Targets screen

This selection provides the status of the system's ping targets by indicating if an alarm has been triggered. Under the **State** column, the description defined in **Edit menu > Point Groups** will appear in red if an alarm has been activated. The description defined in **Edit menu > Point Groups** will be displayed in green when the alarm condition is not present.

3.4 Monitoring Analogs

Address <http://126.10.220.63/main.html> Go Links »

DPS Telecom **NetGuardian** [Refresh](#) | [Logout](#) | [Upgrade](#) | [Help](#)

Monitor

- Summary
- Base Alarms
- Ping Targets
- Analogs**
- System Alarms
- Accum. Timer
- Controls
- Event Log
- Port Transmit
Select ▼
- Port Receive
Select ▼
- Site Camera
Select ▼

NetGuardian v4.0A.0286

Edit

Analogs							
Chn	Description	Reading	Units	MJU	MnU	MnO	MJO
1	EXTERNAL TEMP	75.0000	F		X		
2	EXTERNAL HUMIDITY	50.0000	RH				
3	RADIO NORTH-SOUTH AGC	14.0000	VDC				
4	INTERNAL TEMP	65.0000	F				
5	INTERNAL HUMIDTY	20.0000	RH				
6	BATTERY	52.0000	VDC				
7		0.0000	VDC				
8		0.0000	VDC				

Fig. 3.4. View the status of the Analogs from the Monitor > Analogs screen

This selection provides the status of the system's analogs by indicating if an alarm has been triggered. The Monitor menu > Analogs screen provides a description 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.

3.5 Monitoring DSCP Devices

Analogs							
Chn	Description	Reading	Units	MJU	MnU	MnO	MJO
1	BATTERY VOLTAGE	0.0000	VDC				
2	SOLAR VOLTAGE	0.0000	VDC				
3	TEMPERATURE SENSOR 1	0.0000	VDC				
4	TEMPERATURE SENSOR 2	0.0000	VDC				
5	TEMPERATURE SENSOR 3	0.0000	VDC				
6	TEMPERATURE SENSOR 4	0.0000	VDC				

Fig. 3.5. View the status of the DSCP Analogs from the Monitor > DSCP screen

This Monitor > DSCP screen provides a description of each DSCP device alarm point state and each DSCP device analog channel, the current reading, the units being read, and alarm conditions (major under, minor under, major over, and minor over) according to your analog settings.

3.6 Monitoring System Alarms

Address <http://126.10.220.63/main.html> Go Links »

 **NetGuardian** [Refresh](#) | [Logout](#) | [Upgrade](#) | [Help](#)

Monitor

[Summary](#)

[Base Alarms](#)

[Ping Targets](#)

[Analog](#)

[System Alarms](#)

[Accum. Timer](#)

[Controls](#)

[Event Log](#)

Port Transmit
Select ▼

Port Receive
Select ▼

NetGuardian v4.0A.0286

[Edit](#)

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
33	Unit Reset	Clear
36	Lost Provisioning	Clear
37	DCP Poller Inactive	Clear
38	LAN not Active	Clear
41	Modem not Responding	Clear
42	No Dialtone	Clear
43	SNMP Trap not Sent	Clear
44	Pager Que Overflow	Clear
45	Notification Failed	Clear
46	Craft RcvQ Full	Clear
47	Modem RcvQ Full	Clear


Fig.3.6. View the status of the System Alarms from the Monitor > System Alarms screen

This selection provides the status of the system alarms by indicating if an alarm has been triggered. Under the **State** column, the description defined in **Edit menu > Point Groups** will appear in red if an alarm has been activated. The description defined in **Edit menu > Point Groups** will be displayed in green when the alarm condition is not present.

Refer to Appendix A for system alarm trap numbers.

3.7 Operating Controls

Address <http://126.10.220.63/main.html> Go

 **NetGuardian** [Refresh](#) | [Logout](#) | [Upgrade](#) | [Help](#)

Monitor

Summary

Base Alarms

Ping Targets

Analogs

System Alarms

Accum. Timer

Controls

Event Log

Port Transmit
Select ▼

Port Receive
Select ▼

NetGuardian v4.0A.0286

Edit

Controls			
ID	Description	Mode	State
1	01.17-RELAY1	Echoed	Rls
2	01.18-RELAY2	Echoed	Rls
3	_AND1.35-5D2.6_ORD3.7	Normal	Opr ▼
4	_OR D01.03-05D02.06	Echoed	Rls ▼
5	_AND01.35-5 DR2.6_OR	Normal	Mom ▼
6	_AND1-2	Normal	Rls ▼
7		Normal	Rls ▼
8		Normal	Rls ▼

Fig. 3.7. Issue controls from the Monitor > Controls screen

Use the following rules to operate controls:

1. Select Controls from the Monitor menu.
2. Under the State field, choose a command (Opr - operate, Rls - release, or Mom - momentary).
3. Click Submit Data to issue the control.



Hot Tip!

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). The momentary command energizes the relay for approximately one second before it is released again.

3.8 Event Logging

The screenshot shows the NetGuardian web interface. The address bar indicates the URL is <http://126.10.220.63/main.html>. The page header includes the DPS Telecom logo, the product name "NetGuardian", and navigation links for Refresh, Logout, Upgrade, and Help. On the left, a "Monitor" menu is expanded, showing various monitoring options. The "Event Log" option is selected, displaying a table of events. The table has the following data:

Evt	Date	Time	Grp	State	PRef	Description
1	01-01-2000	00:00:01	1	Critical	1.1	EQUIP MAJOR
2	01-01-2000	00:00:00	1	Clear	11.33	Unit Reset
3	01-01-2000	00:00:00	1	Critical	11.33	Unit Reset

Fig. 3.8. Monitor the last 100 events recorded by the NetGuardian in the Event Log window

Event Log Field	Description
Evt	Event number (1-100)
Date	Date the event occurred*
Time	Time the event occurred*
St	State of the event (A=alarm, C=clear)
Pref	Point reference. See Appendix A for display descriptions.
Description	User defined description of the event as entered in the alarm point and relay description fields

Table 3.A. Event Logging window field descriptions



New Feature!

The NetGuardian Event Log has been enhanced to support new NetGuardian G4 features:

- You can filter Event Log entries by Alarm Point Group, to see only the alarms you want.
- You can reset the Event Log, to clear old alarms from the display.
- You can reset the Event Log by Alarm Point Group; for example, clear power alarms while retaining intruder alarms.

Click on the **Monitor** menu > **Event Log** link to view the event log. 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. See Table 3.A for

Event Alarm field descriptions.

Note: All information in the event log will be erased upon reboot or a power failure.

* DCPx versions of the NetGuardian automatically timestamp events before sending them to the event logs. The time is based on the real-time clock (if installed). If there is no real-time clock installed, the time is based on the NetGuardian's software clock (requires resetting after power failure or power cycle).

3.9 Monitoring Data Port Activity

The screenshot shows the NetGuardian web interface. At the top left is the DPS Telecom logo. The title "NetGuardian" is centered at the top. On the right, there are links for "Refresh", "Logout", and "Info". The left sidebar contains a "Monitor" menu with various options: Summary, Base Alarms, Ping Targets, Analogs, System Alarms, Accum. Timer, Controls, Event Log, Port Transmit, and Port Receive. The "Port Receive" option is selected, and a dropdown menu is open showing "Data 1" through "Data 8". The main content area is titled "Port Receive: Data 1" and contains a "Reset" button and a large text area displaying "(NO DATA)". The footer of the page shows the date and time "Friday, May 20, 2004 5:52", the product name "NetGuardian", and the copyright "©2004 DPS Telecom".

Fig. 3.9. 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 eight data ports by displaying transmit or receive activity in ASCII for the selected port. See Appendix C, "ASCII Conversion" for specific ASCII symbol conversion.

The screenshot displays the NetGuardian web interface. At the top left is the DPS Telecom logo. The main title "NetGuardian" is centered at the top. On the right, there are links for "Refresh", "Logout", and "Info". The interface is divided into a left sidebar and a main content area. The sidebar contains a "Monitor" menu with options: Summary, Base Alarms, Ping Targets, Analogs, System Alarms, Accum. Timer, Controls, Event Log, and Port Transmit. The "Port Transmit" option is selected, and its dropdown menu is open, showing "Select", "Data 1", "Data 2", "Data 3", "Data 4", "Data 5", "Data 6", "Data 7", and "Data 8". A mouse cursor is pointing at "Data 1". Below the menu, there are two green status indicators labeled "Net0" and "0105". The main content area has a blue header "Port Transmit: Data 1" with a "Reset" button. The main area contains the text "{NO DATA}" and a vertical scrollbar on the right. At the bottom of the page, the footer shows "Friday, May 20, 2004 5:52", "NetGuardian", and "©2004 DPS Telecom".

Fig. 3.10. To view the data being transmitted to the connected equipment, select the data port number from the Monitor menu > Port Transmit drop-down menu



Hot Tip!

Use the NetGuardian's CHAN feature to analyze bi-directional communication between two device in real time, see section 2.4.7.1, "Data Port Types."

3.10 Monitoring Camera Activity



Fig. 3.11. Monitor live streaming video via the NetGuardian's Web browser

Select the **Site Camera** drop-down menu from the **Monitor** menu to view activity from the site camera. Bandwidth usage in live streaming mode is rated at 146 kB per second.

Note: The NetGuardian only sends the camera data when a user is monitoring the image.

3.10.1 Pan-and-tilt Camera Controls

Control left-right and up-down viewing options via the **Pan/Tilt** options. Clicking on the image will make that the new center point.

Note: In order to have pan-and-tilt controls, your Internet settings must be set to check for newer versions of stored pages every visit to the page, see section 2.18 , "Camera Internet Settings."



Fig. 3.12. Use the arrow buttons to use the pan-and-tilt features of the NetGuardian SiteCAM

The preset number controls allow you to tilt to the four corners of the screen (1-4). To alter the screen size click on the **Program** link . To adjust the brightness, click on the **-** to darken the image screen or **+** to brighten it. Click on **STD** to return to the default settings.

3.10.2 Monitoring Multiple Cameras

Fig. 3.13 View up to 4 multiple cameras.

You can monitor multiple cameras at one time by clicking the **Multiple** link. To view individual screens you may select the site camera under the **Monitor** menu > **Camera** drop-down menu or click on the title of the screen you wish to view individually. To configure your multiple camera settings, click on the Setup-Multiple link, see Figure 3.13.

Monitor

Summary

Base Alarms

Pind Targets

Analog

System Alarms

Accum. Timer

Controls

Exp.1 Controls

Exp.1 Alarms

Event Log

Port Transmit
Select

Port Receive
Select

Site Camera
Select

NetGuardian v3.00.0105

Edit

Pan / Tilt

Scan 1

Preset Program

1 2 3 4

5 6 7 8

Brightness

- STD +

[Multiple Setup-Multiple](#)

[Start-Capture Viewer](#)

[Upgrade Restart Advanced Config](#)

Multi-Camera

Registration / Modification

1. 2nd Network Camera Enable

IP Address or Host Name

Camera Name (1 to 15 Characters)

2. 3rd Network Camera Enable

IP Address or Host Name

Camera Name (1 to 15 Characters)

3. 4th Network Camera Enable

IP Address or Host Name

Camera Name (1 to 15 Characters)

Fig. 3.14 Enter the IP Address or Host Name of each camera, and title your camera

Before you can setup multiple camera views, you will need to set up your camera for "live streaming." See your camera user manual to configure your camera for live streaming. You may only use up to 15 alphanumeric characters to name your camera. Once you have finished click the **Save** button.

4 Appendixes

4.1 Appendix A — Display Mapping

Port	Address	Display	Description	Set	Clear
99	1	1	Discrete Alarms 1-32	8001-8032	9001-9032
99	1	2	Ping Table	8065-8096	9065-9096
99	1	3	Analog Channel 1**	8129-8132	9129-9132
99	1	4	Analog Channel 2**	8193-8196	9193-9196
99	1	5	Analog Channel 3**	8257-8260	9257-9260
99	1	6	Analog Channel 4**	8321-8324	9321-9324
99	1	7	Analog Channel 5**	8385-8388	9385-9388
99	1	8	Analog Channel 6**	8449-8452	9449-9452
99	1	9	Analog Channel 7**	8513-8516	9513-9516
99	1	10	Analog Channel 8**	8577-8580	9577-9580
99	1	11	Relays/System Alarms (See table below)	8641-8674	9641-9674
99	1	12	NetGuardian Expansion 1 Alarms 1-48	6001-6064	7001-7064
99	1	12	NetGuardian 480 (as DX) Alarms 1-64	6001-6064	7001-7064
99	1	13	NetGuardian Expansion 1 Relays 1-8 or NetGuardian 480 (as DX) Relays 1-4	6065-6072	7065-7072
99	1	13	NetGuardian 480 (as DX) Alarms 65-80	6081-6096	7081-7096
99	1	14	NetGuardian Expansion 2 Alarms 1-48	6129-6177	7129-7177
99	1	15	NetGuardian Expansion 2 Relays 1-8	6193-6200	7193-7200
99	1	16	NetGuardian Expansion 3 Alarms 1-48	6257-6305	7257-7305
99	1	17	NetGuardian Expansion 3 Relays 1-8	6321-6328	7321-7328
99	1	26	DSCP ALG 1/2(Propane Sensor, Battery Voltage)	6449-6452	7449-7452
99	1	27	DSCP ALG 3/4	6513-6516	7513-7516
99	1	28	DSCP ALG 5/6	6577-6580	7577-7580

Table A.1. Display descriptions and SNMP Trap numbers for the NetGuardian

* The TRAP number ranges shown correspond to the point range of each display. For example, the SNMP Trap "Set" number for alarm 1 (in Display 1) is 8001, "Set" for alarm 2 is 8002, "Set" for alarm 3 is 8003, etc.

** The TRAP number descriptions for the Analog channels (1-8) are in the following order: minor under, minor over, major under, and major over. For example, for Analog channel 1, the "Set" number for minor under is 8129, minor over is 8130, major under is 8131, and major over is 8132.

SNMP Trap #s			
Points	Description	Set	Clear
1	Relays	8641	9641
2	Relays	8642	9642
3	Relays	8643	9643
4	Relays	8644	9644
5	Relays	8645	9645
6	Relays	8646	9646
7	Relays	8647	9647
8	Relays	8648	9648
17	Timed Tick	8657	9657
18	Exp. Module Callout	8658	9658
19	Network Time Server	8659	9659
21	Duplicate IP Address	8661	9661
33	Power Up	8673	9673
36	Lost Provisioning	8676	9676
37	DCP Poller Inactive	8677	9677
38	LAN not active	8678	9678
41	Modem not responding	8681	9681
42	No Dial Tone	8682	9682
43	SNMP Trap not Sent	8683	9683
44	Pager Que Overflow	8684	9684
45	Notification failed	8685	9685
46	Craft RcvQ full	8686	9686
47	Modem RcvQ full	8687	9687
48	Serial 1 RcvQ full	8688	9688
49	Serial 2 RcvQ full	8689	9689
50	Serial 3 RcvQ full	8690	9690
51	Serial 4 RcvQ full	8691	9691
52	Serial 5 RcvQ full	8692	9692
53	Serial 6 RcvQ full	8693	9693
54	Serial 7 RcvQ full	8694	9694
55	Serial 8 RcvQ full	8695	9695
56	NetGuardian DX 1 fail	8696	9696
57	NetGuardian DX 2 fail	8697	9697
58	NetGuardian DX 3 fail	8698	9698
62	Chan. Port Timeout	8702	9702
63	Craft Timeout	8703	9703
64	Event Que Full	8704	9704

Table A.2 Display 11 System Alarms point descriptions

Note: See Table A.3 for detailed descriptions of the NetGuardian's system alarms.

4.1.1 System Alarms Display Map

Display	Points	Alarm Point	Description	Solution
11	17	Timed Tick	Toggles state at constant rate as configured by the Timed Tick timer variable. Useful in testing integrity of SNMP trap alarm reporting.	To turn the feature off, set the Timed Tick timer to 0.
	18	Exp. Module Callout	Alarm is triggered whenever an alarm point from an Entry Control Unit (ECU) is collected. A notification event may be associated with the alarm to force a call out or trap.	Disable Building Access Control (BAC) by setting the BAC Unit ID to 0. If Building Access is being used, then investigate the ECU alarm source or don't associate notification with the alarm event.
	19	Network Time Server	Communication with Network Time Server has failed.	Try pinging the Network Time Server's IP Address as it is configured. If the ping test is successful, then check the port setting and verify the port is not being blocked on your network.
	20	Accumulation Event	An alarm has been standing for the time configured under Accum. Timer. The Accumulation timer enables you to monitor how long an alarm has been standing despite system reboots. Only the user may reset the accumulated time, a reboot will not.	To turn off the feature, under Accum.Timer, set the display and point reference to 0.
	21	Duplicate IP Address	The unit has detected another node with the same IP Address.	Unplug the LAN cable and contact your network administrator. Your network and the unit will most likely behave incorrectly. After assigning a correct IP Address, reboot the unit to clear the System alarm.
	33	Power Up	The unit has just come-online. The set alarm condition is followed immediately by a clear alarm condition.	Seeing this alarm is normal if the unit is powering up.
	36	Lost Provisioning	The internal NVRAM may be damaged. The unit is using default configuration settings.	Use Web or latest version of NGEedit4 to configure unit. Power cycle to see if alarm goes away. May require RMA.

Table A.3. System Alarms Descriptions

Note: Table A.3 continues on following pages.

Display	Points	Alarm Point	Description	Solution
11	37	DCP Poller Inactive	The unit has not seen a poll from the Master for the time specified by the DCP Timer setting.	If DCP responder is not being used, then set the DCP Unit ID to 0. Otherwise, try increasing the DCP timer setting under timers, or check how long it takes to cycle through the current polling chain on the Master system.
	38	NET1 not active	The Net1 LAN port is down.	Check LAN cable. Ping to and from the unit.
	39	NET2 not active	The Net2 LAN port is down.	
	40	LNK Alarm	No network connection detected	
	41	Modem not responding	An error has been detected during modem initialization. The modem did not respond to the initialization string.	Remove configured modem initialization string, then power cycle the unit. If alarm persists, try resetting the Modem port from the TTY interface, or contact DPS for possible RMA.
	42	No Dial Tone	During dial-out attempt, the unit did not detect a dial tone.	Check the integrity of the phone line and cable.
	43	SNMP Trap not Sent	SNMP trap address is not defined and an SNMP trap event occurred.	Define the IP Address where you would like to send SNMP trap events, or configure the event not to trap.
	44	Pager Queue Overflow	Over 250 events are currently queued in the pager queued and are still trying to report.	Check for failed notification events that may be filling up the pager queue. There may be a configuration or communication problem with the notification events.
	45	Notification failed	A notification event, like a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	46	Craft RcvQ full	The Craft port received more data than it was able to process.	Disconnect whatever device is connected to the craft serial port. This alarm should not occur.
	47	Modem RcvQ full	The modem port received more data than it was able to process.	Check what is connecting to the NetGuardian. This alarm should not occur.
	48	Serial 1 RcvQ full	Serial port 1 (or appropriate serial port number) receiver filled with 8 K of data (4 K if BAC active).	Check proxy connection. The serial port data may not be getting collected as expected.
	49	Serial 2 RcvQ full		
	50	Serial 3 RcvQ full		
	51	Serial 4 RcvQ full		
	52	Serial 5 RcvQ full		
	53	Serial 6 RcvQ full		
54	Serial 7 RcvQ full			
55	Serial 8 RcvQ full			

Table A.3 System Alarms Descriptions (continued)

Note: Table A.3 continues on following page.

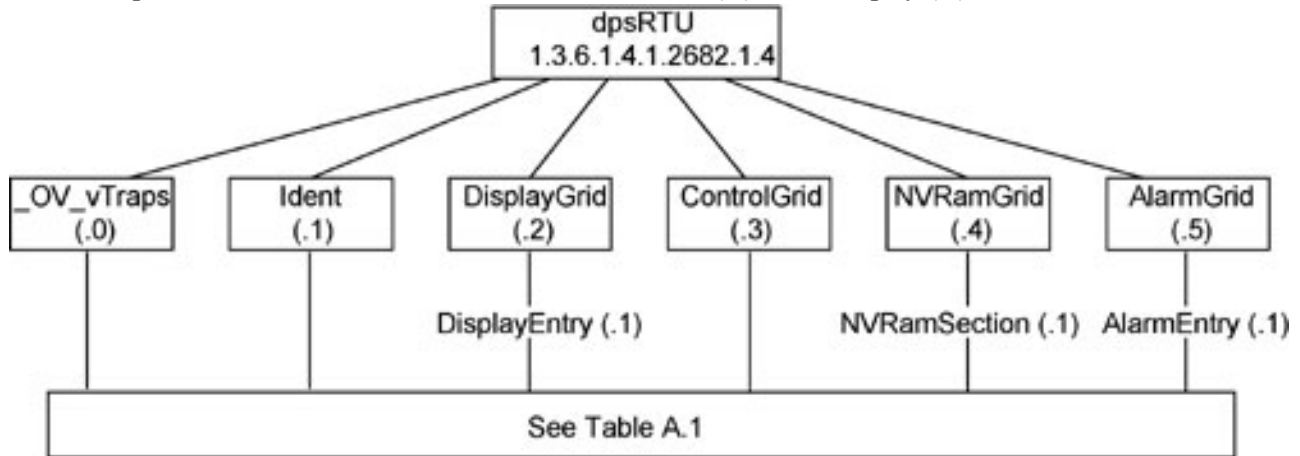
Display	Points	Alarm Point	Description	Solution
11	56	NetGuardian DX 1 fail	NGDdx 1 Fail (Expansion shelf 1 communication link failure)	Under Ports > Options, verify the number of configured NGDdx units. Use EXP filter debug and port LEDs to help diagnose the problem. Use DB9M to DB9M with null crossover for cabling. Verify the DIP addressing on the back of the NGDdx unit.
	57	NetGuardian DX 2 fail	NGDdx 2 Fail (Expansion shelf 2 communication link failure)	
	58	NetGuardian DX 3 fail	NGDdx 3 Fail (Expansion shelf 3 communication link failure)	
	62	Chan. Port Timeout	Chan. Port has not forwarded any traffic in the time specified by the Channel Timeout Timer. The channel feature forwards data between two ports so the NG may be used to analyze serial traffic using CHAN filter debug.	Change the data port type to OFF, or set the Channel Timer to a different setting.
	63	Craft Timeout	The Craft Timeout Timer has not been reset in the specified time. This feature is designed so other machines may keep the TTY link active. If the TTY interface becomes unavailable to the machine, then the Craft Timeout alarm is set.	Change the Craft Timeout Timer to 0 to disable the feature.
64	Event Que Full	The Event Que is filled with more than 500 uncollected events.	Enable DCP timestamp polling on the master so events are collected, or reboot the system to clear the alarm.	

Table A.3 System Alarms Descriptions (continued)

4.2 Appendix B — SNMP Manager Functions

The SNMP Manager allows the user to view alarm status, set date/time, issue controls, and perform a resync. The display and tables below outline the MIB object identifiers. Table B.1 begins with dpsRTU; however, the MIB object identifier tree has several levels above it. The full English name is as follows:

root.iso.org.dod.internet.private.enterprises.dps-Inc.dpsAlarmControl.dpsRTU. Therefore, dpsRTU's full object identifier is 1.3.6.1.4.1.2682.1.4. Each level beyond dpsRTU adds another object identifying number. For example, the object identifier of the Display portion of the Control Grid is 1.3.6.1.4.1.2682.1.4.3.3 because the object identifier of dpsRTU is 1.3.6.1.4.1.2682.1.4 + the Control Grid (.3) + the Display (.3).



Tbl. B1 (0.)_OV_Traps points
_OV_vTraps (1.3.6.1.4.1.2682.1.4.0)
PointSet (.20)
PointClr (.21)
SumPSet (.101)
SumPClr (.102)
ComFailed (.103)
ComRestored (.014)
P0001Set (.10001) through P0064Set (.10064)
P0001Clr (.20001) through P0064Clr (.20064)

Tbl. B2 (.1) Identity points
Ident (1.3.6.1.4.1.2682.1.4.1)
Manufacturer (.1)
Model (.2)
Firmware Version (.3)
DateTime (.4)
ResyncReq (.5)*
* Must be set to "1" to perform the resync request which will resend TRAPs for any standing alarm.

Tbl. B3 (.2) DisplayGrid points
DisplayEntry (1.3.6.1.4.1.2682.1.4.2.1)
Port (.1)
Address (.2)
Display (.3)
DispDesc (.4)*
PntMap (.5)*

Tbl. B3 (.3) ControlGrid points
ControlGrid (1.3.6.1.4.1.2682.1.4.3)
Port (.1)
Address (.2)
Display (.3)
Point (.4)
Action (.5)

Tbl. B5 (.5) AlarmEntry points
AlarmEntry (1.3.6.4.1.2682.1.4.5.1)
Aport (.1)
AAddress (.2)
ADisplay (.3)
APoint (.4)
APntDesc (.5)*
AState (.6)
* For specific alarm points, see Table B6

	Description	Port	Address	Display	Points
Disp 1	No data*	99	1	1	1-32

	Undefined**	99	1	1	33-64
Disp 2	No data*	99	1	2	1-32
	Undefined**	99	1	2	33-64
Disp 3	Analog 1	99	1	3	1-4
	Undefined**	99	1	3	5-64
Disp 4	Analog 2	99	1	4	1-4
	Undefined**	99	1	4	5-64
Disp 5	Analog 3	99	1	5	1-4
	Undefined**	99	1	5	5-64
Disp 6	Analog 4	99	1	6	1-4
	Undefined**	99	1	6	5-64
Disp 7	Analog 5	99	1	7	1-4
	Undefined**	99	1	7	5-64
Disp 8	Analog 6	99	1	8	1-4
	Undefined**	99	1	8	5-64
Disp 9	Analog 7	99	1	9	1-4
	Undefined**	99	1	9	5-64
Disp 10	Analog 8	99	1	10	1-4
	Undefined**	99	1	10	5-64
Disp 11	No Data*	99	1	11	1-8
	Undefined**	99	1	11	9-16
	Timed Tick	99	1	11	17
	Exp. Module Callout	99	1	11	18
	Network Time Server	99	1	11	19
	Undefined**	99	1	11	20
	Duplicate IP Address	99	1	11	21
	Undefined**	99	1	11	22-32
	Power up	99	1	11	33
	Undefined**	99	1	11	34-35
	Lost	99	1	11	36
	DCP poll inactive	99	1	11	37
	LAN not active	99	1	11	38
	Undefined**	99	1	11	39-40
	Modem not	99	1	11	41
	No dial-tone	99	1	11	42
	SNMP trap not	99	1	11	43
	Pager Que	99	1	11	44
	Notification	99	1	11	45
	Craft RCVQ full	99	1	11	46
Modem RCVQ	99	1	11	47	
Data 1-8 RCVQ	99	1	11	48-55	
NGDdx 1-3 fail	99	1	11	56-58	
CHAN timeout	99	1	11	62	
CRFT timeout	99	1	11	63	

Table B.6. Alarm Point Descriptions

- * "No data" indicates that the alarm point is defined but there is no description entered.
** "Undefined" indicates that the alarm point is not used.

4.3 Appendix C — SNMP Granular Trap Packets

Tables C.1 and C.2 provide a list of the information contained in the SNMP Trap packets sent by the NetGuardian.

SNMP Trap managers can use one of two methods to get alarm information:

1. Granular traps (not necessary to define point descriptions for the NetGuardian)
- or**
2. The SNMP manager reads the description from the Trap.

UDP Header	Description
1238	Source port
162	Destination port
303	Length
0xBAB0	Checksum

Table C.1. UDP Headers and descriptions

SNMP Header	Description
0	Version
Public	Request
Trap	Request
1.3.6.1.4.1.2682.1.4	Enterprise
126.10.230.181	Agent address
Enterprise Specific	Generic Trap
8001	Specific Trap
617077	Time stamp
1.3.7.1.2.1.1.1.0	Object
NetGuardian 216 v1.0K	Value
1.3.6.1.2.1.1.6.0	Object
1-800-622-3314	Value
1.3.6.1.4.1.2682.1.4.4.1.0	Object
01-02-1995 05:08:27.760	Value
1.3.6.1.4.1.2682.1.4.5.1.1.99.1.1.1	Object
99	Value
1.3.6.1.4.1.2682.1.4.5.1.2.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.4.5.1.3.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.4.5.1.4.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.4.5.1.5.99.1.1.1	Object
Rectifier Failure	Value
1.3.6.1.4.1.2682.1.4.5.1.6.99.1.1.1	Object
Alarm	Value

Table C.2. SNMP Headers and descriptions

4.4 Appendix D — ASCII Conversion

The information contained in Table D.1 is a list of ASCII symbols and their meanings. Refer to the bulleted list below to interpret the ASCII data transmitted or received through the data ports. Port transmit and receive activity can be viewed from the Web Browser Interface.

- Printable ASCII characters will appear as ASCII.
- Non-printable ASCII characters will appear as labels surrounded by { } brackets (e.g. {NUL}).
- Non-ASCII characters will appear as hexadecimal surrounded by [] brackets (e.g. [IF]).
- A received BREAK will appear as <BRK>.

Abbreviation	Description	Abbreviation	Description
NUL	Null	DLE	Data Link Escape
SOH	Start of Heading	DC	Device Control
STX	Start of Text	NAK	Negative Acknowledge
ETX	End of Text	SYN	Synchronous Idle
EOT	End of Transmission	ETB	End of Transmission Block
ENQ	Enquiry	CAN	Cancel
ACK	Acknowledge	EM	End of Medium
BEL	Bell	SUB	Substitute
BS	Backspace	ESC	Escape
HT	Horizontal Tabulation	FS	File Separator
LF	Line Feed	GS	Group Separator
VT	Vertical Tabulation	RS	Record Separator
FF	Form Feed	US	Unit Separator
CR	Carriage Return	SP	Space (blank)
SO	Shift Out	DEL	Delete
SI	Shift In	BRK	Break Received

Table D.1. ASCII symbols

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 can I back up the current configuration of my NetGuardian?

A. There are two ways. NGEEdit can read the configuration of your NetGuardian and save the configuration to your PC's hard disk or a floppy disk. With NGEEdit you can also make changes to the configuration file and write the changed configuration to the NetGuardian's NVRAM. The other way is to use File Transfer Protocol (FTP). You can use FTP to read configuration files from or write files to the NetGuardian's NVRAM, but you can't use FTP to edit configuration files.

Q. Can I use my NetGuardian as a proxy server to access TTY interfaces on my third-party serial equipment?

A. You can use Data Ports 1–8, located on the back of the NetGuardian, to connect to serial devices, as long as your devices support RS-232. To make a proxy connection, you must define the correct TCP port for each serial port. To define TCP ports, you must first connect directly to the NetGuardian through its IP address. Once you have connected to the NetGuardian, you can define the TCP ports through the NetGuardian's TTY or Web Browser Interface configuration interfaces.

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

A. These terms define the exact location of a network alarm, from the most specific (an individual alarm point) to the most general (an entire monitored device). An alarm point is a number representing an actual 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 a open/closed sensor in a door. A display is a logical group of 64 alarm points. A port is traditionally the actual physical serial port through which the monitoring device collects data. The address is a number representing the monitored device. The terms port and address have been extended to refer to logical, or virtual, ports and addresses. For example, the NetGuardian reports internal alarms on Port 99, address 1.

Q. What characteristics of an alarm point can I configure through software? For instance, can I configure Point 4 to sense an active-low (normally closed) signal, or Point 5 to sense a level or edge?

A. The NetGuardian alarm points are level sensed and can be software-configured to generate an alarm on either a high (normally open) or low (normally closed) level.

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. The standard settings for the craft port are 9600 baud, 8 bits, no parity, and 1 stop bit. 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 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. How do I get my NetGuardian on the network?

A. Before the NetGuardian will work on your LAN, the unit address (IP address), the subnet mask, and the default gateway must be set. 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

Always remember to save your changes by writing to the NVRAM. Any modifications of the NetGuardian's IP configuration will also require a reboot.

Q. Does the PPP allow upload of new firmware over PPP?

A. The NetGuardian supports all PPP upload capabilities with the exception of firmware.

Q. I'm using HyperTerminal to connect to the NetGuardian through the craft port, but the unit won't accept input when I get to the first level menu.

A. Make sure you turn off all handshaking in HyperTerminal.

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

A. Once you select a higher baud rate, you must set your terminal emulation to that new baud rate and enter the DPSCFG and press Enter escape sequence. The craft port interprets a break key as an override to 9600 baud. At slower baud rates, normal keys can appear as a break.

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

A. Some routers will not forward to an IP address until the MAC address has been registered with the router. You need to enter the IP address of your T/MonXM system or your gateway in the ping table.

5.2 SNMP FAQs

Q. Which version of SNMP is supported by the SNMP agent on the NetGuardian?

A. SNMP v1 and v2.0C on the NetGuardian G4 series.

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 a main SNMP manager, which is 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 exceptions 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 Telecom MIB. For more information about the set commands, see Reference Information, 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 Interface, TTY, or NGEEdit configuration 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 services 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 AT\$37=9. This will limit the NetGuardian's connection speed.

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 email notifications?

A. You need to assign the NetGuardian an email address and list the addresses of email recipients. Let's explain some terminology. An email address consists of two parts, the user name (everything before the @ sign) and the domain (everything after the @ sign). To assign the NetGuardian an email 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 email notifications from the NetGuardian will be sent from the address netguardian@proactive.com.

The next step is to list the email recipients. Choose Pagers from the Edit menu. For each email recipient, enter his or her email 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 SNMP server in the IPA field.

6 Technical Support

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