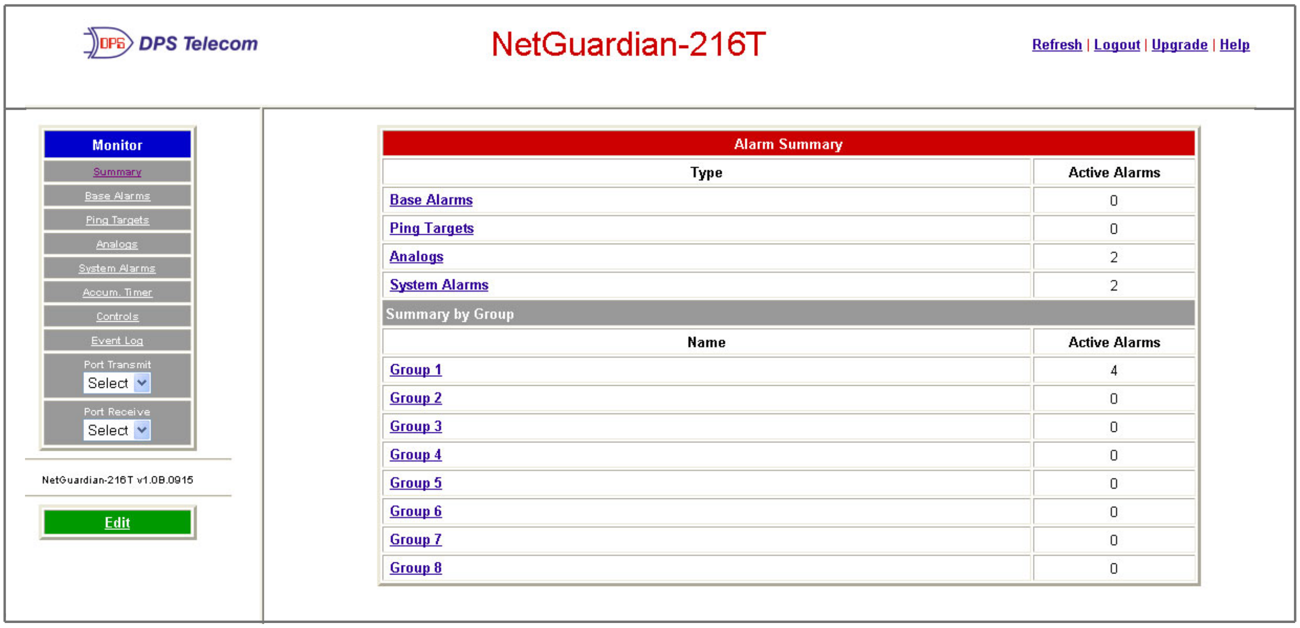
DPS Telecom

"Your Partners in Network Alarm Monitoring"

NetGuardian 216T Web Browser

USER MANUAL



Alarm Summary

Type	Active Alarms
Base Alarms	0
Ping Targets	0
Analogs	2
System Alarms	2

Summary by Group

Name	Active Alarms
Group 1	4
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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January 27, 2009 **D-OC-UM091.27100** **Firmware Version 1.0B+**

Revision History

January 27, 2009	Added PPP and Bridge Mode information.
June 26, 2006	NetGuardian 216T User Manual (D-OC-UM066.26100) released. Supports Firmware Version 1.0B+.
July 19, 2006	NetGuardian Edit216T UM (D-OC-UM067.19100) released.
July 25, 2006	NetGuardian Web Browser UM (D-OC-UM067.25100) released.

Notice

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1 Overview

Fig. 1.1. *The NetGuardian 216T 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, configure paging information, and more. The NetGuardian supports Internet Explorer versions 4.0 and above and Netscape Navigator versions 4.7 and above.

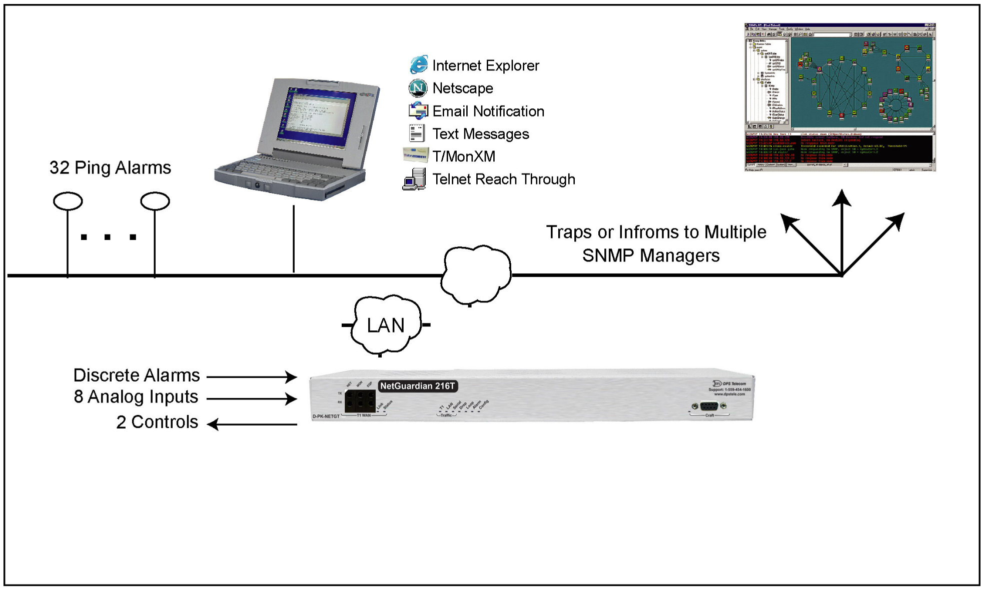


Fig. 1.1.1. *NetGuardian 216T has the capacity to monitor IP aware devices' network presence and also interfaces discrete alarm points and controls at your network sites*

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 Some NetGuardian 216T Features

NetGuardian 216T includes the following features:

T1 WAN network interface:
NetGuardian 216T supports Frame Relay/T1 for connecting two Ethernet subnets

Integrated 10-BaseT Hub: 7 hubed Ethernet ports reduces equipment necessary for your remote site.

SNMP v2c Support and Robust Message Delivery

NetGuardian 216T 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 216T 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 216T 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 supports the following NetGuardian 216T 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 216T 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 2.1.1). **Note:** The factory default password is **dpstelecom.**

3. In the left frame there is a **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.)

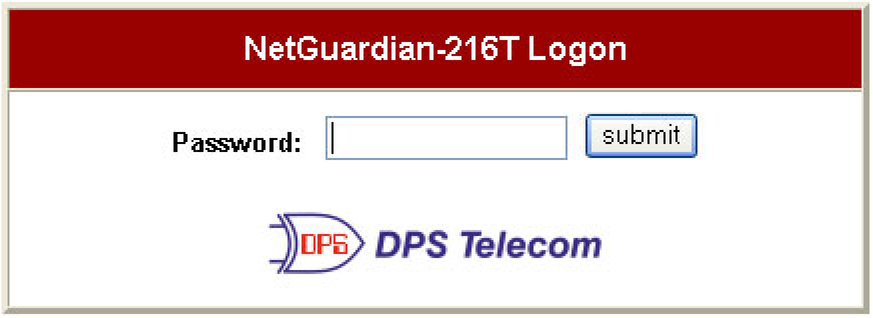


Fig. 2.1.1. *Enter your password to enter the NetGuardian Web Browser Interface*

2.2 Entering System Settings

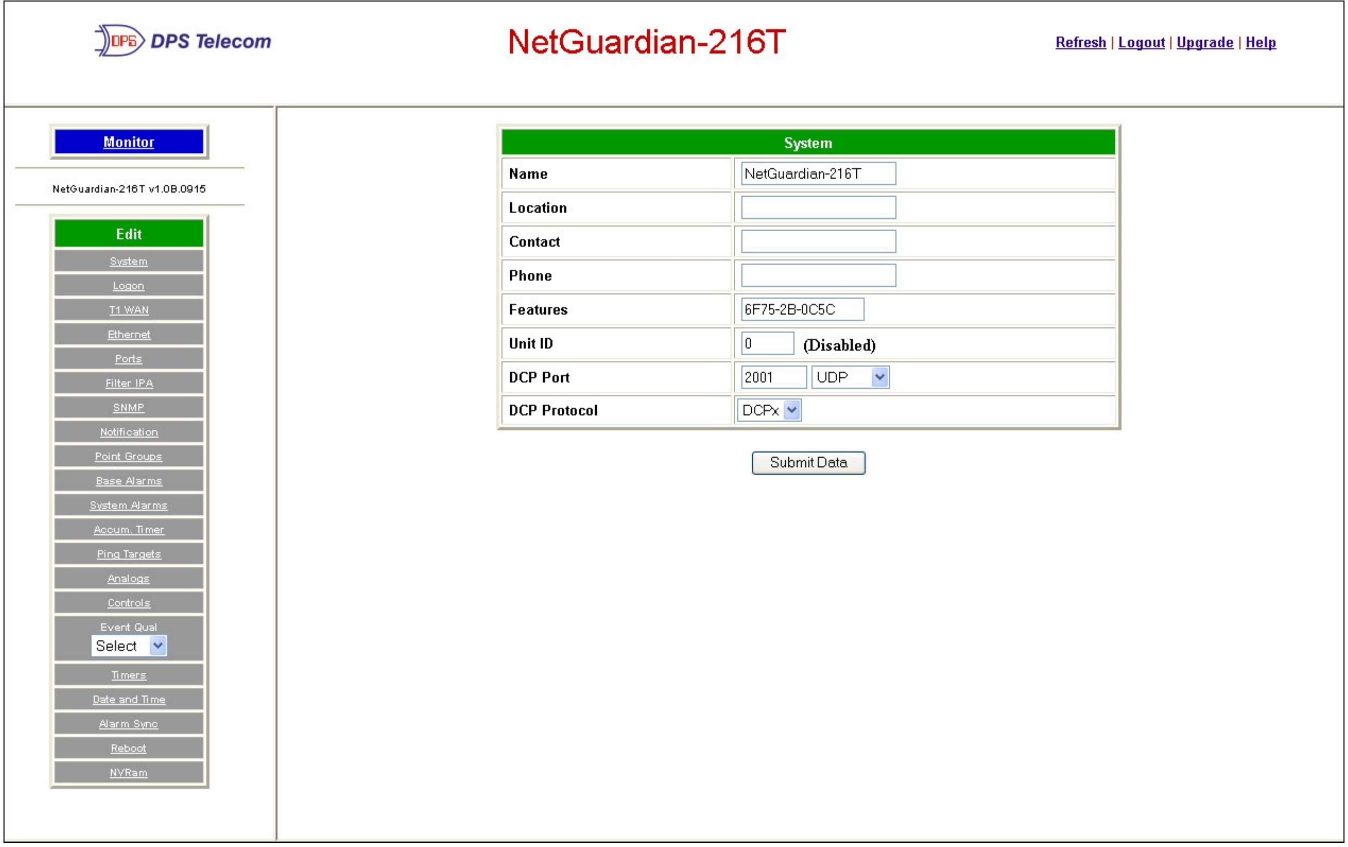
From the **System** screen you can enter the name, location, contact, features, and SNMP community names.

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.New link



System	
Name	NetGuardian-216T
Location	
Contact	
Phone	
Features	6F75-2B-0C5C
Unit ID	0 (Disabled)
DCP Port	2001 UDP
DCP Protocol	DCPx

Fig. 2.2.1. *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. (serial or UDP/IP Port)
DCP Protocol	Default DCP protocol is DCPx, but can be changed to DCPt.

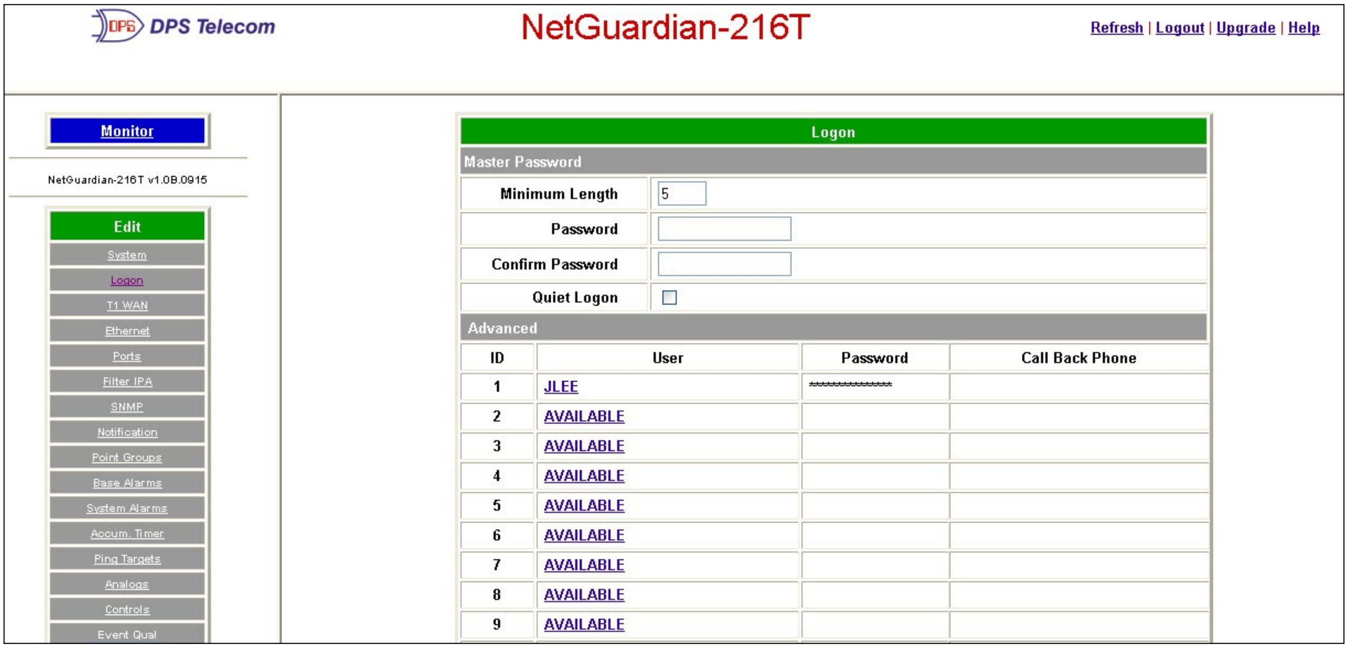
Table 2.2.A. *System fields*

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 in the **Logon Profile** screen. (See Section 2.3.1 for 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.



Logon

Master Password

Minimum Length	5
Password	
Confirm Password	
Quiet Logon	□

Advanced

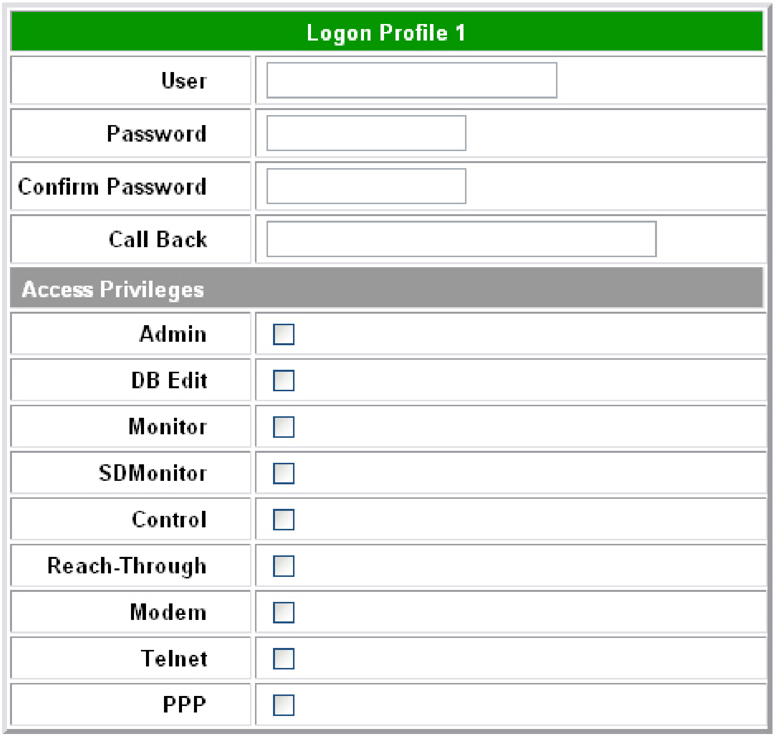
ID	User	Password	Call Back Phone
1	JLEE	************	
2	AVAILABLE		
3	AVAILABLE		
4	AVAILABLE		
5	AVAILABLE		
6	AVAILABLE		
7	AVAILABLE		
8	AVAILABLE		
9	AVAILABLE		

Fig. 2.3.1. *Configure the password parameters from the Login 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 2.3.1.1.)
2. Enter the user information in the appropriate fields. See Table 2.3.1.A for field and access privileges descriptions.
3. Click **Submit Data** to save the user profile.



Logon Profile 1	
User	
Password	
Confirm Password	
Call Back	
Access Privileges	
Admin	□
DB Edit	□
Monitor	□
SDMonitor	□
Control	□
Reach-Through	□
Modem	□
Telnet	□
PPP	□

Fig. 2.3.1.1. *Configure access privileges for users in the Logon Profile screen*

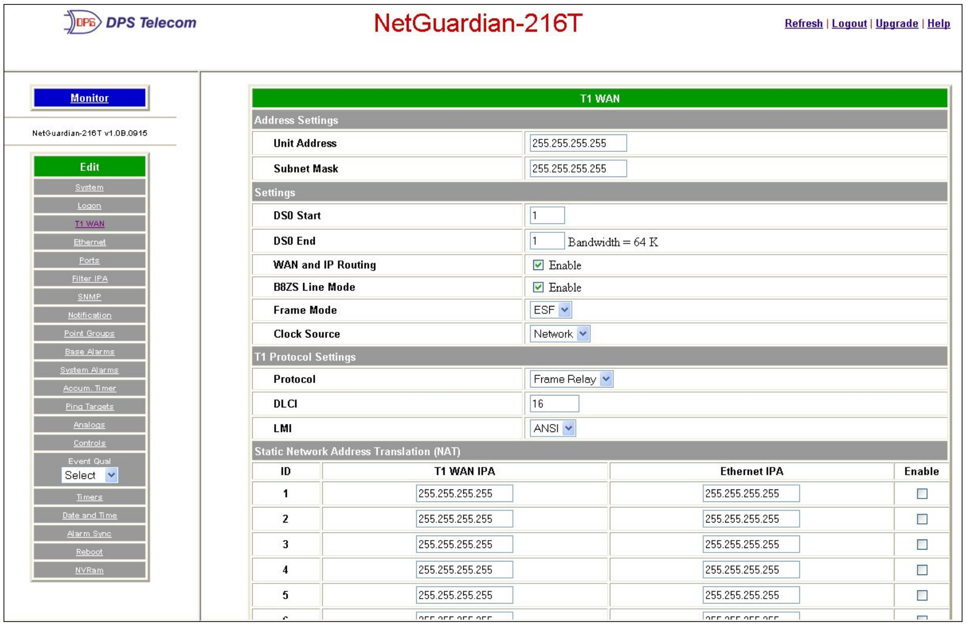
Profile Field	Description
User	Enter a username or a user description. (18 characters maximum)
Password	Enter a unique user password. (4 characters minimum) **Note:** This password will be used by the NetGuardian to determine whether any limited access applies.
Confirm Password	Re-enter the password.
Call Back	Field not used by NetGuardion 216T.
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	Field not used by NetGuardian 216T.
Telnet	Enables the user to have Telnet access to the unit.
PPP	Field not used by NetGuardian 216T.

Table 2.3.1.A. *Logon profile field descriptions*

2.4 Configuring Port Parameters

The **Edit** menu > **T1 WAN** screen allows you to configure the T1 WAN, Ethernet, craft port and data port settings.

2.4.1 T1 WAN



T1 WAN

Address Settings

Unit Address	255.255.255.255
Subnet Mask	255.255.255.255

Settings

DS0 Start	1
DS0 End	1 Bandwidth = 64 K
WAN and IP Routing	☑ Enable
B8ZS Line Mode	☑ Enable
Frame Mode	ESF
Clock Source	Network

T1 Protocol Settings

Protocol	Frame Relay
DLCI	16
LMI	ANSI

Static Network Address Translation (NAT)

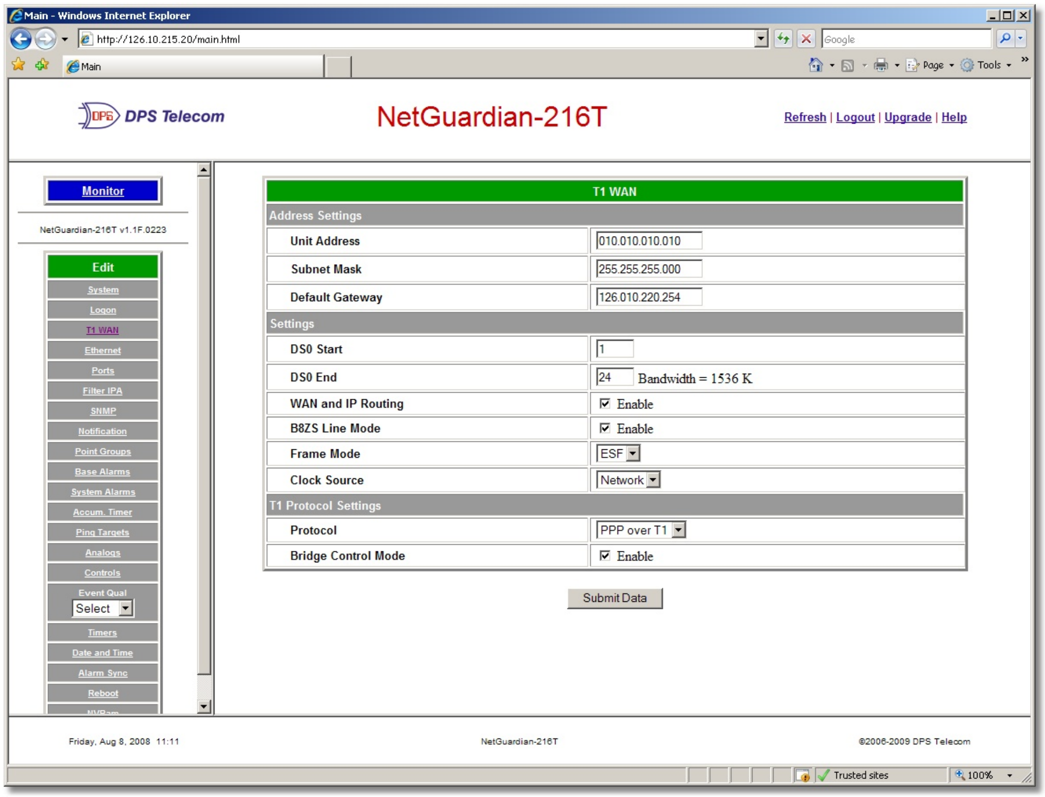
ID	T1 WAN IPA	Ethernet IPA	Enable
1	255.255.255.255	255.255.255.255	□
2	255.255.255.255	255.255.255.255	□
3	255.255.255.255	255.255.255.255	□
4	255.255.255.255	255.255.255.255	□
5	255.255.255.255	255.255.255.255	□

Fig. 2.4.1. *T1 WAN port configuration is accomplished from the WAN menu (Frame Relay)*

Field	Description
IP Address	WAN address for 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.
DS0 Start	The default DS0 value is 1 (64 kbps), but the NetGuardian supports up to 24 DS0 channels (24 DS0s=1.536 mbps). **Note:** The value entered here must correspond to the DS0 end value.
DS0 End	The default DS0 value is 1 (64 kbps), but the NetGuardian supports up to 24 DS0 channels (24 DS0s=1.536 mbps).
Enable WAN and IP Routing	The Enable WAN and IP Routing box should be checked for routing packets between T1 WAN and the Ethernet hub.
Enable B8ZS Line Mode	The Enable B8ZS Line Mode box should be checked for B8ZS line mode operation (normal).
Frame Mode	Default frame mode is ESF, but you have the option of switching to D4.
Clock Source	Default clock is network, but you have the option of switching to an internal clock source.
Protocol	The NetGuardian's T1 protocol is Frame Relay or PPP. *(See Fig. 2.4.2)*

DLCI	DLCI (Data Link Connection Identifier) is a channel number attached to the Frame Relay that tells the network how to route the data. The NetGuardian default is 16.
LMI	LMI (Link Management Interface) is a signaling standard used between routers and Frame Relay switches. The default mode is ANSI, but can be changed to ITU.

Table 2.4.A. *T1 WAN configuration option descriptions (continued on next page)*



T1 WAN	
Address Settings	
Unit Address	010.010.010.010
Subnet Mask	255.255.255.000
Default Gateway	126.010.220.254
Settings	
DS0 Start	1
DS0 End	24 Bandwidth = 1536 K
WAN and IP Routing	☑ Enable
B8ZS Line Mode	☑ Enable
Frame Mode	ESF
Clock Source	Network
T1 Protocol Settings	
Protocol	PPP over T1
Bridge Control Mode	☑ Enable

Fig. 2.4.2. *T1 WAN port configuration in PPP mode.*

Field	Description
Default Gateway	Informs the NetGuardian which machine is the gateway out of your local network. Set to 255.255.255.255 if not using.
Bridge Mode Control (In PPP mode only)	Bridge mode enables the internet addresses on the PPP/T1 subnet to operate on the same subnet as the Ethernet. Bridge mode disables routing between LAN and WAN pass through. (RFC 1638)

Table 2.4.A (continued). *T1 WAN configuration option descriptions*

Use the following steps to configure the T1 WAN port settings:

1. Configure the NetGuardian T1 WAN port by clicking on the `T1 WAN` link from the `Edit` menu.
2. Enter the appropriate information for T1 WAN in the corresponding fields. Refer to Figure 2.4.1 and Table 2.4.A.
3. Click **Submit Data** to save your configuration settings.

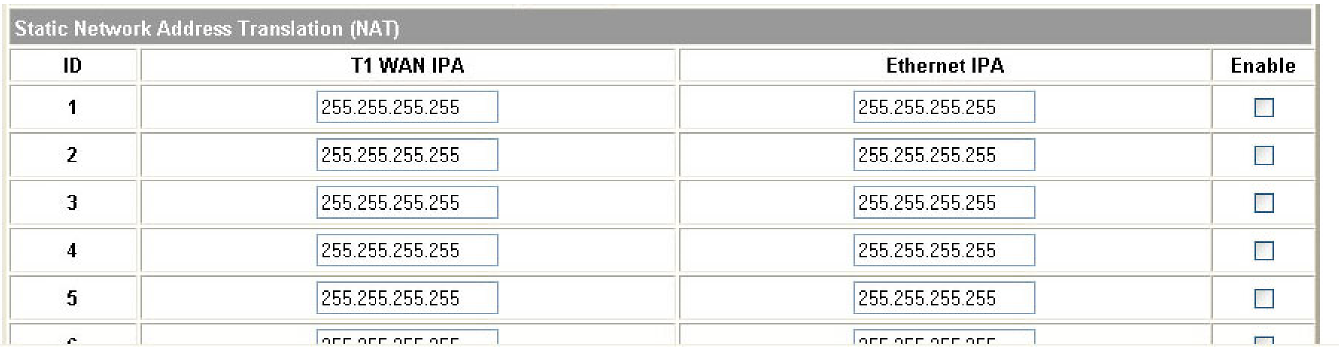
2.4.1.1 Network Address Translation (NAT)

2.4.1.1.1 Gateway Mode

Gateway mode tells the NetGuardian to automatically pass all inbound Ethernet traffic not destined for an IP address on the Ethernet subnet to the T1 WAN channel. Similarly, inbound IP packets encapsulated within Frame Relay on the T1 WAN channel are forwarded out the Ethernet Hub*.

To enable Gateway mode of operation, all entries in the Static Network Address Translation (NAT) table must have the "Enable" box left unchecked. Addresses are not translated in Gateway mode.

*Exception: IP packets will not forward to the Hub if the destination address is the NetGuardian's Ethernet address.



Static Network Address Translation (NAT)

ID	T1 WAN IPA	Ethernet IPA	Enable
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	☐

Fig. 2.4.1.1.1. *Configuration for Ethernet gateway traffic*

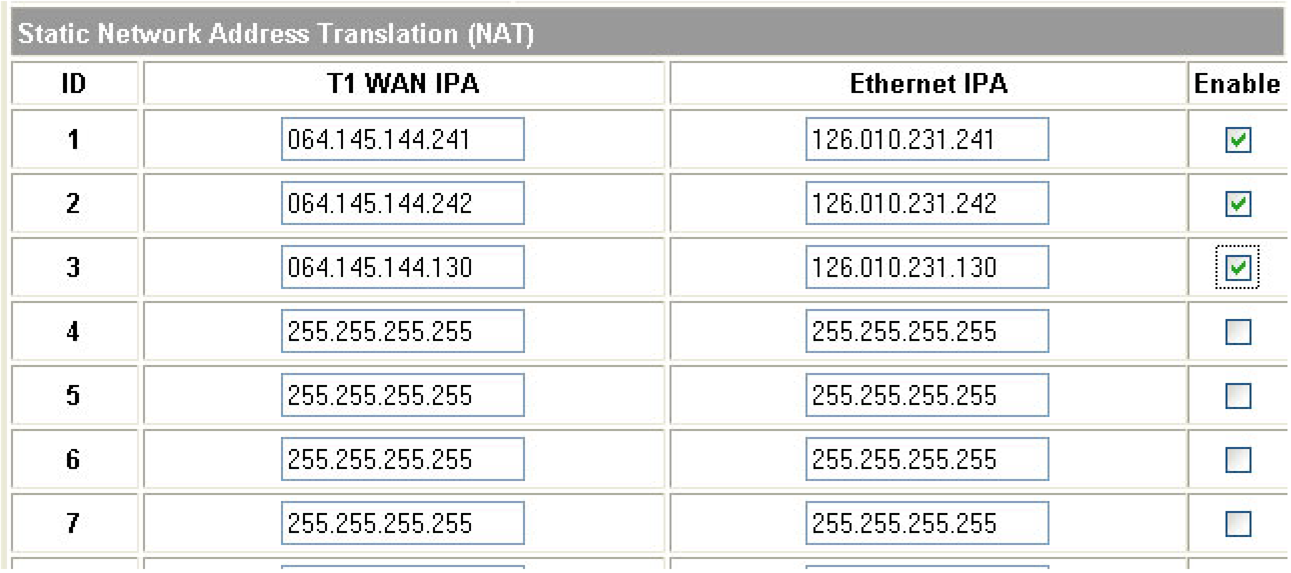
2.4.1.1.2 Router Mode

The wide area network (WAN) connects two separate, private networks, allowing for mutual communication. Before this can happen, the IP address of the local computer must be translated so that it will be recognized and passed through to another network. This is where Network Address Translation (NAT) is used. NAT translates the IP address for traffic coming into and leaving the local network.

From the Web browser T1 WAN menu, you can configure network computers for NAT translation in the Static Network Address Translation fields. Be sure to select (check) the "Enable" column box.

Note: The submask number must be the same for the first three octets, which are followed by the computer's ID number. If your submask number is outside the subnet range, use the gateway address to route the connection.

Figure 2.4.1.1 shows an example of NAT enabling for several network computers.



Static Network Address Translation (NAT)

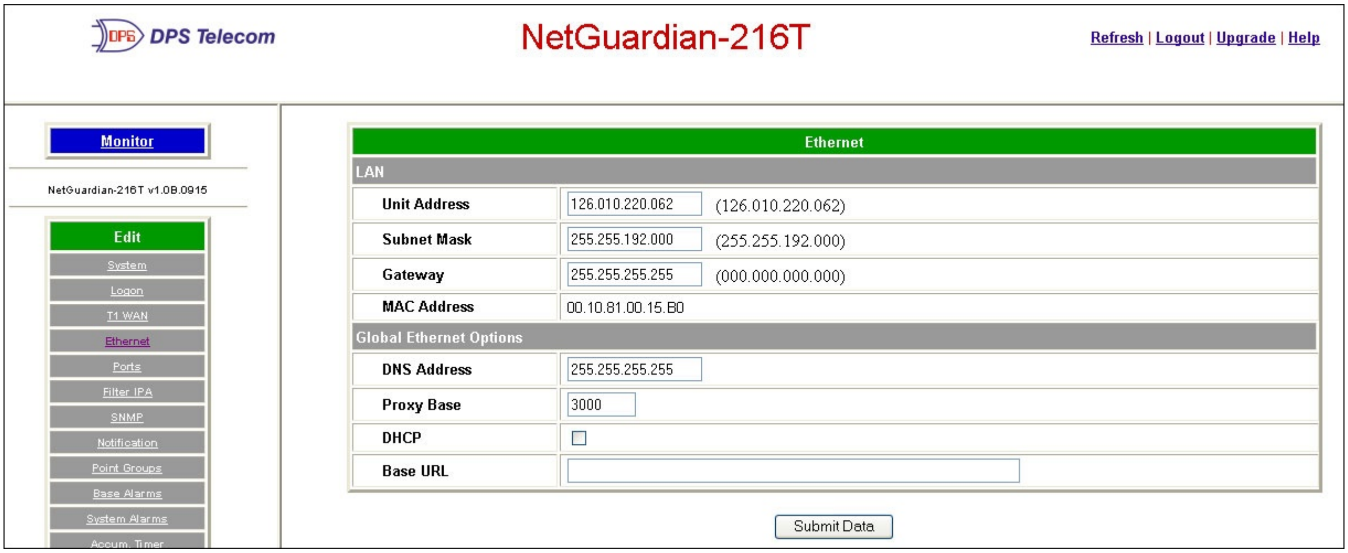
ID	T1 WAN IPA	Ethernet IPA	Enable
1	064.145.144.241	126.010.231.241	☑
2	064.145.144.242	126.010.231.242	☑
3	064.145.144.130	126.010.231.130	☑
4	255.255.255.255	255.255.255.255	□
5	255.255.255.255	255.255.255.255	□
6	255.255.255.255	255.255.255.255	□
7	255.255.255.255	255.255.255.255	□

Fig. 2.4.1.1. *NAT translation fields for local network computers*

2.4.2 Ethernet Ports

Use the following steps to configure the Ethernet port settings:

1. Configure the NetGuardian ethernet port by clicking on the **Ethernet** link from the `Edit` menu.
2. Enter the appropriate information for your ethernet port in the corresponding fields. Refer to Figure 2.4.2.1 and Table 2.4.2.B.
3. Click **Submit Data** to save your configuration settings.



Ethernet

LAN		
Unit Address	126.010.220.062	(126.010.220.062)
Subnet Mask	255.255.192.000	(255.255.192.000)
Gateway	255.255.255.255	(000.000.000.000)
MAC Address	00.10.81.00.15.B0	
Global Ethernet Options		
DNS Address	255.255.255.255	
Proxy Base	3000	
DHCP	□	
Base URL		

Fig. 2.4.2.1. *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 .
MAC Address	Hardware address of the NetGuardian (not editable, for reference only).
DNS Address	IP address of the domain name server. Set to 255.255.255.255 if not using.
Proxy Base	Defines the NetGuardian TCP ports used by the data (serial) port. Data port 1 receives the port number entered here.
DHCP	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 2.4.3, "Using the Base URL Field."

Table 2.4.2.B. *Fields in the Edit > Ports > Ethernet Port settings*

2.4.3 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 2.4.2.1).

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 2.4.3.C 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

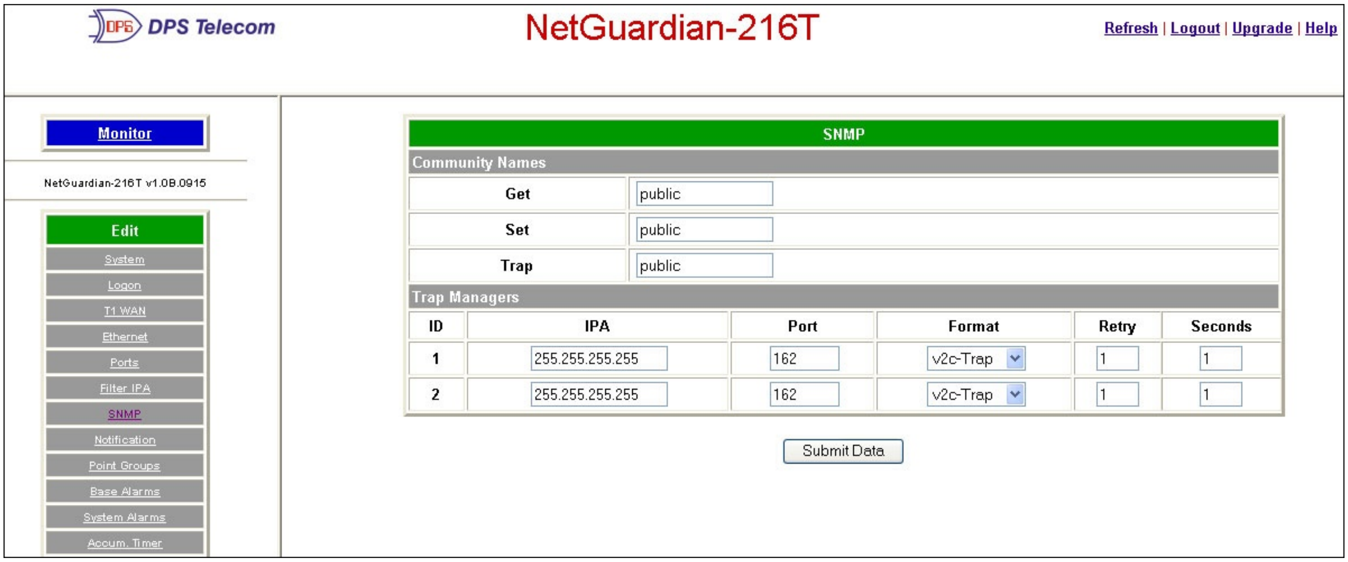
Table 2.4.3.C. *Specific link extensions*

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

2.4.4 Setting Up The SNMP

Use the following steps to define your NetGuardian system information:

1. From the **Edit** menu choose SNMP (see Figure 2.4.4.1).
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.



SNMP

Community Names

Get	public
Set	public
Trap	public

Trap Managers

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

Fig. 2.4.4.1. *SNMP Menu*

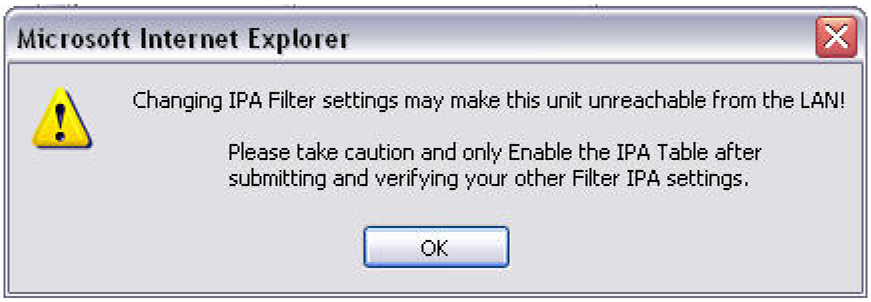
Communities	
G)et	Community name for SNMP requests.
S)et	Community name for SNMP SET requests.
T)rap	Community name for SNMP TRAP requests.
Field	**Description**
IPA	Defines the SNMP trap manager's IP address. Set to 255.255.255.255 if not using.
Port	The SNMP port is the UDP port set by the SNMP manager to receive traps, usually set to 162.
Format	Select between SNMPv1 TRAP, SNMP v2c TRAP, and SNMP v2c INFORM.

Table 2.4.4.D. *Fields in the Edit > SNMP settings*

2.4.5 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 2.4.5.1). Click OK to continue, or Exit to cancel.



Changing IPA Filter settings may make this unit unreachable from the LAN!

Please take caution and only Enable the IPA Table after submitting and verifying your other Filter IPA settings.

Fig. 2.4.5.1 *Filter IPA warning prompt*

3. Once enabled, only the IP addresses in the table will be allowed access to the NetGuardian.
4. Select the **Enable IPA Table** box.
5. Enter the IP address of the machine(s) you would like to give access to the NetGuardian.
6. Click **Submit** to save the configuration settings.

Hot Tip!

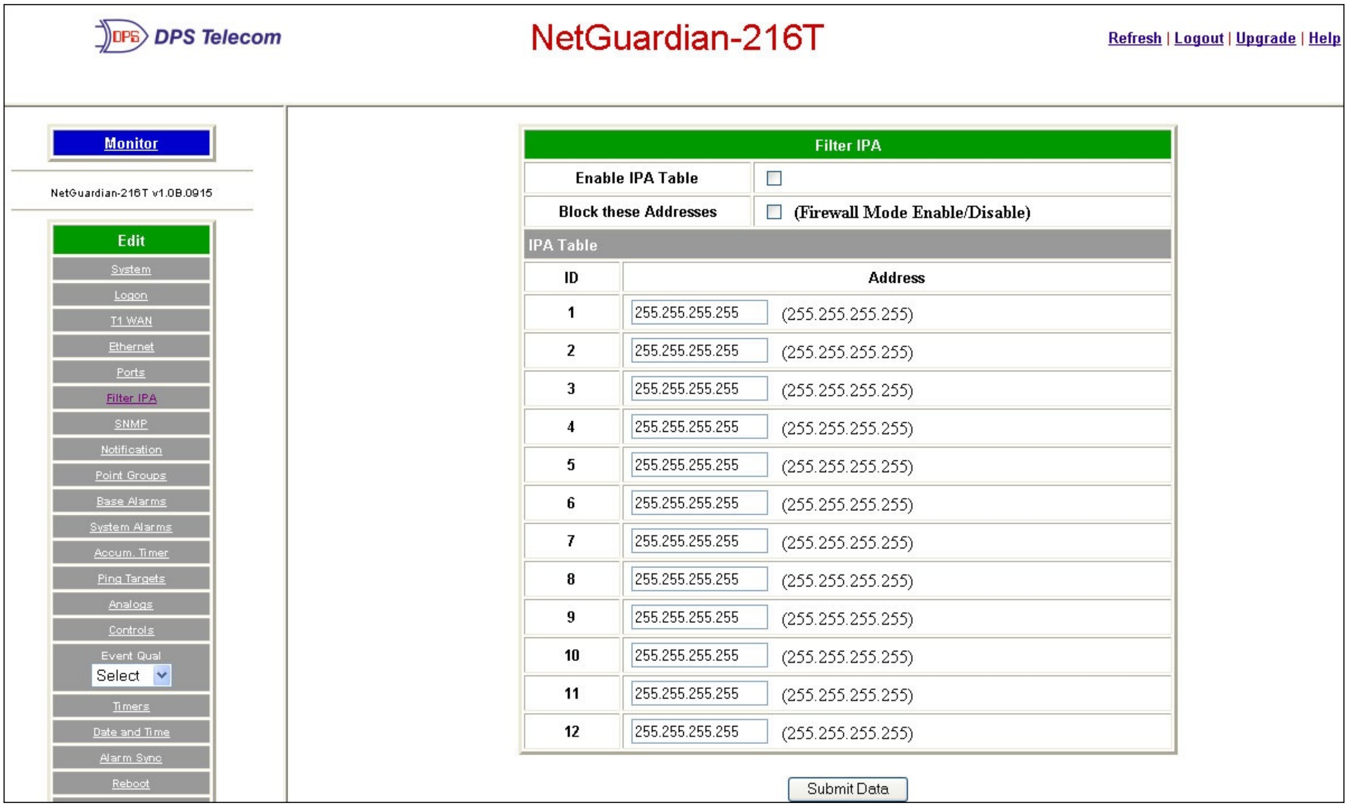
Entering a zero in any of the octet fields will declare that part of the octet to be a wildcard.

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

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.



Filter IPA	
Enable IPA Table	□
Block these Addresses	□ (Firewall Mode Enable/Disable)

IPA Table

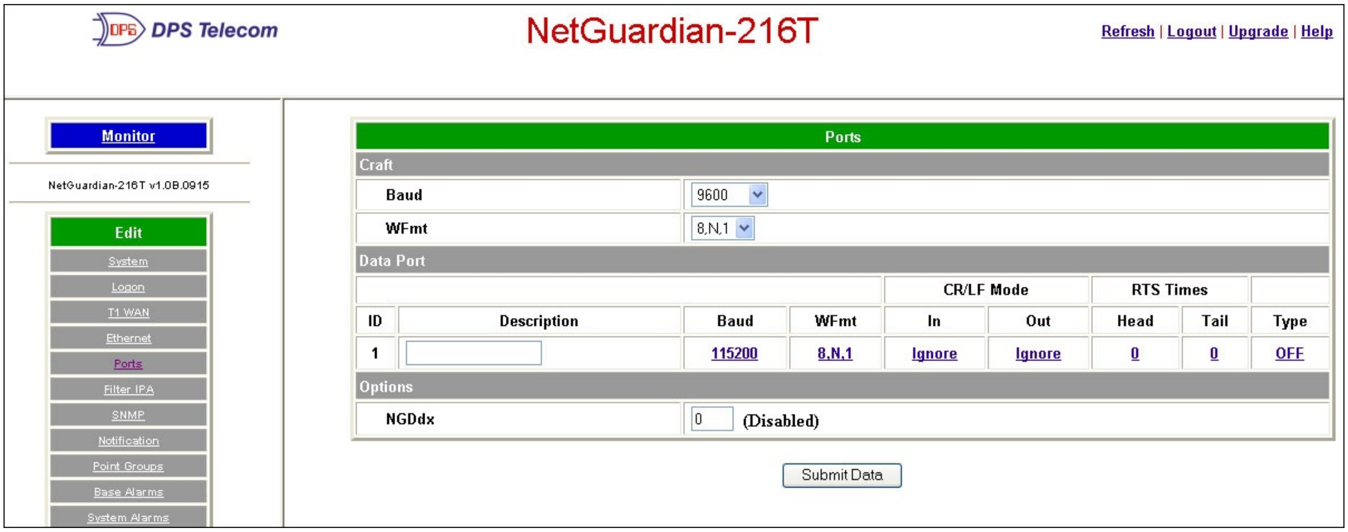
ID	Address
1	255.255.255.255 (255.255.255.255)
2	255.255.255.255 (255.255.255.255)
3	255.255.255.255 (255.255.255.255)
4	255.255.255.255 (255.255.255.255)
5	255.255.255.255 (255.255.255.255)
6	255.255.255.255 (255.255.255.255)
7	255.255.255.255 (255.255.255.255)
8	255.255.255.255 (255.255.255.255)
9	255.255.255.255 (255.255.255.255)
10	255.255.255.255 (255.255.255.255)
11	255.255.255.255 (255.255.255.255)
12	255.255.255.255 (255.255.255.255)

Fig. 2.4.5.2. *Select Filter IPA from the Edit menu to configure your Filter IPA table*

2.4.6 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 2.4.6).
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.



Ports

Craft

Baud	9600
WFmt	8,N,1

Data Port

				CR/LF Mode		RTS Times		
ID	Description	Baud	WFmt	In	Out	Head	Tail	Type
1		115200	8,N,1	Ignore	Ignore	0	0	OFF

Options

NGDdx	0 (Disabled)

Fig. 2.4.6. *Configure the front panel craft port parameters from the Ports screen*

2.4.7 Configuring the Data Port

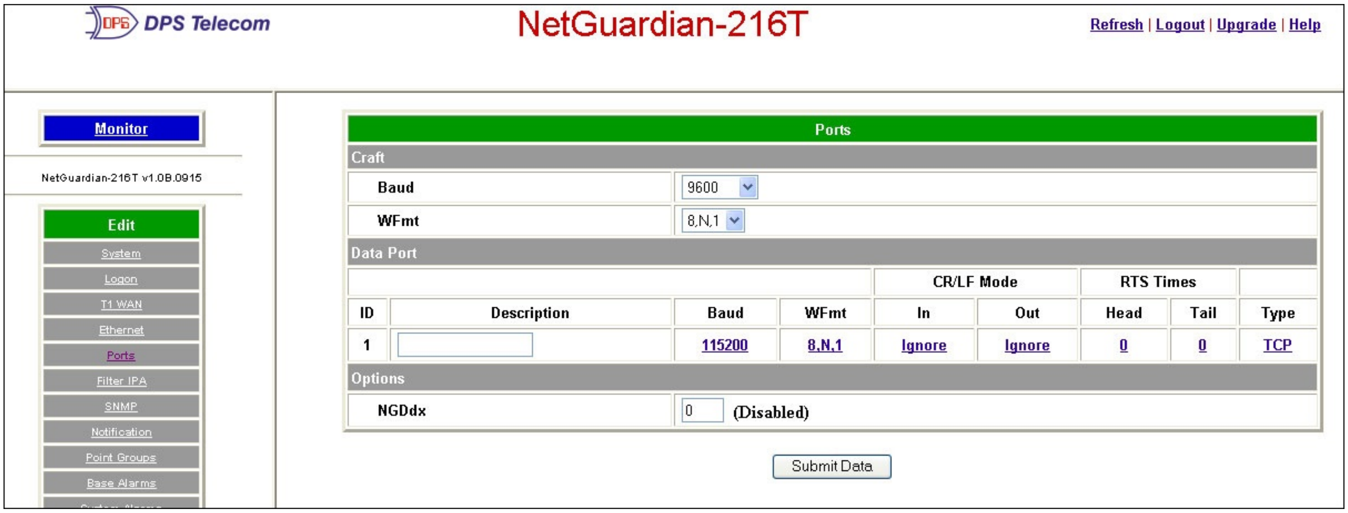
Data port settings can be configured in the **Edit** menu > **Ports** screen.

Use the following steps to define your data port settings:
1. From the **Ports** window, scroll down to the **Data Port** section (see Figure 2.4.7).
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 the port with a connected device. The communication settings for the 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 16 base alarms and 2 base relays to a maximum of 160 alarms and 26 relays.

Note: If you have the serial expansion board installed, you will see 5 serial ports instead of one.



Ports

Craft

Baud	9600
WFmt	8,N,1

Data Port

				CR/LF Mode		RTS Times		
ID	Description	Baud	WFmt	In	Out	Head	Tail	Type
1		115200	8,N,1	Ignore	Ignore	0	0	TCP

Options

NGDdx	0 (Disabled)

Fig. 2.4.7. *Configure the data port parameters from the Ports screen*

2.4.7.1 Data Port Types

The NetGuardian 216T's data port 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.

PTCP

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

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

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
ECU not used on NetGuardian 216T.

MDM
Modem option not used on NetGuardian 216T.

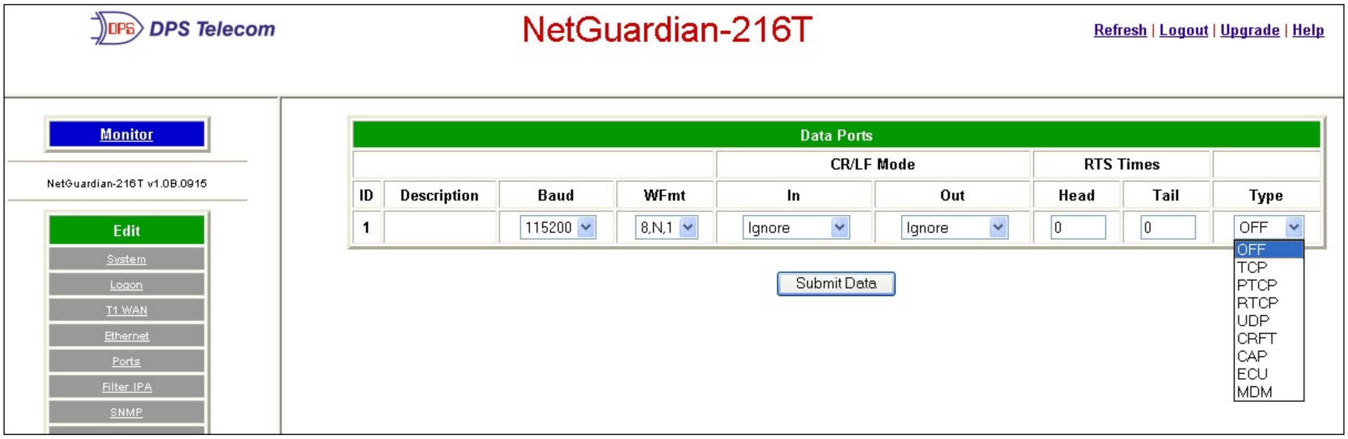
2.4.7.2 Direct and Indirect Proxy Connections

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 port 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 2.4.7).
3. Under the **Type** column click on the drop-down menu and select the appropriate proxy connection (see Figure 2.4.7.2).
4. Click the **Submit Data** button to save your configuration settings.



Data Ports

				CR/LF Mode		RTS Times		
ID	Description	Baud	WFmt	In	Out	Head	Tail	Type
1		115200	8,N,1	Ignore	Ignore	0	0	OFF

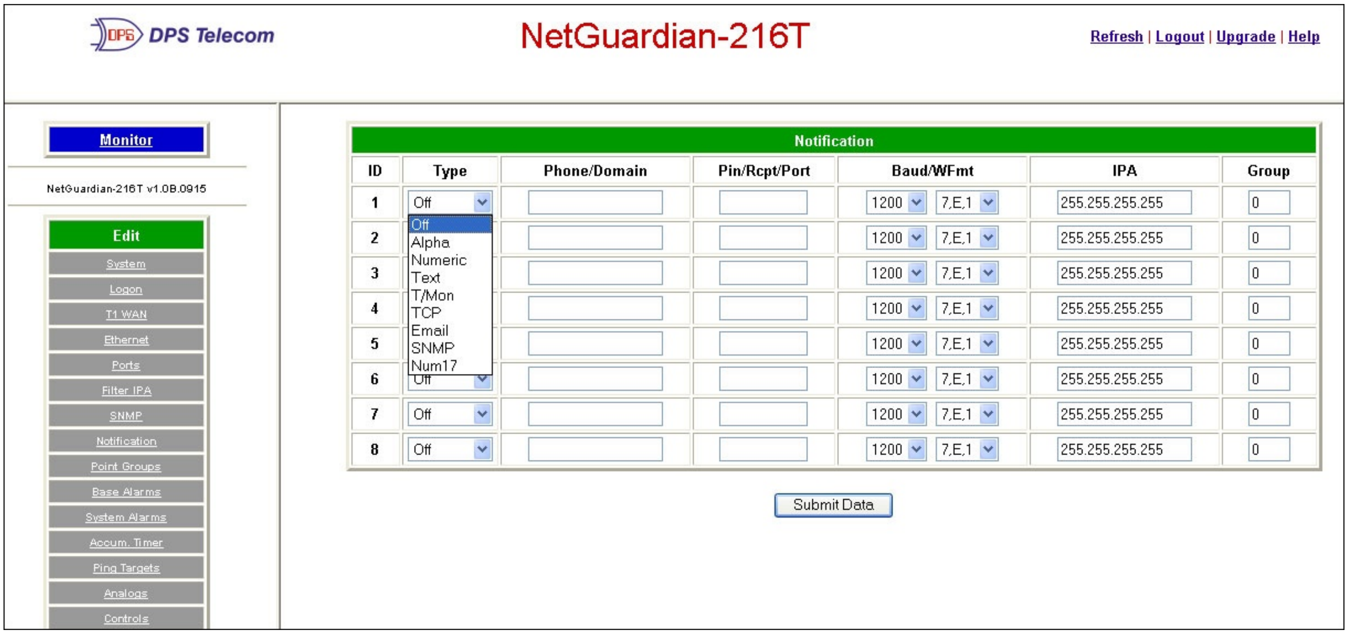
Fig. 2.4.7.2. *Set proxy connections in Edit menu > Ports screen > Data Ports*

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



Notification

ID	Type	Phone/Domain	Pin/Rcpt/Port	Baud/WFmt		IPA	Group
1	Off			1200	7,E,1	255.255.255.255	0
2				1200	7,E,1	255.255.255.255	0
3				1200	7,E,1	255.255.255.255	0
4				1200	7,E,1	255.255.255.255	0
5				1200	7,E,1	255.255.255.255	0
6	Off			1200	7,E,1	255.255.255.255	0
7	Off			1200	7,E,1	255.255.255.255	0
8	Off			1200	7,E,1	255.255.255.255	0

Fig. 2.5.1. *Multiple notification methods and group assignments are configured from the Notification screen*

Pager Format	Description
Alphanumeric Paging	Not supported by NetGuardian 216T.
Numeric Paging	Not supported by NetGuardian 216T.
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	Not supported by NetGuardian 216T.
Email/SMTP Paging	Provides alarm notification via email, with analog alarm port address, alarm descriptions, time of alarms, and alarm status.
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	Not supported by NetGuardian 216T.

Table 2.5.A. *Notification formats*

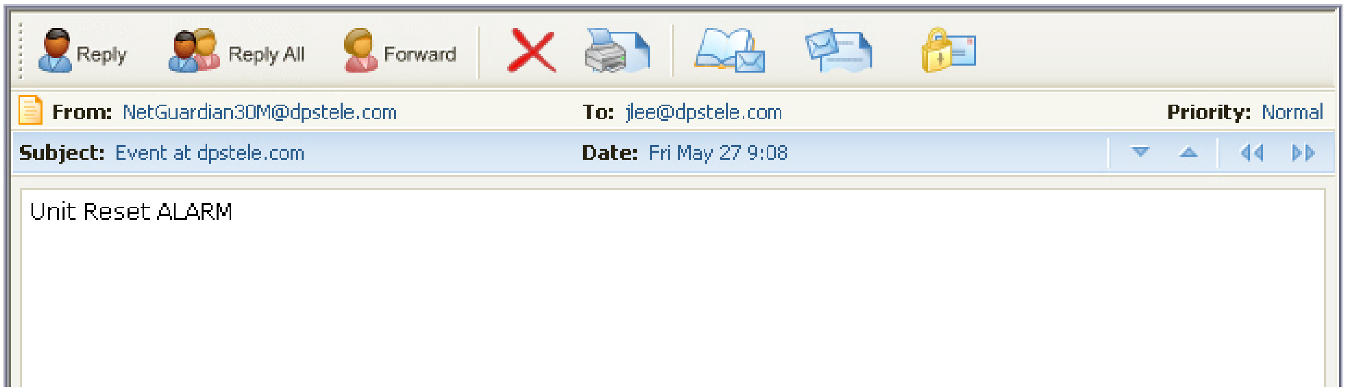
2.5.1 Text Paging Setup

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 2.5.1).
   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 2.5.1).
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.

2.5.2 Email Notification Setup



From: NetGuardian30M@dpstele.com To: jlee@dpstele.com Priority: Normal

Subject: Event at dpstele.com Date: Fri May 27 9:08

Unit Reset ALARM

Fig. 2.5.2.1. *Email notification from the NetGuardian*

The email pager provides alarm notification via email.

Use the following steps to configure the email notification settings:

1. From the `Edit` menu > `Notification` screen, select an ID number to use see (Figure 2.5.1).
   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 2.5.1).

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.

2.5.2.1 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:
If you want to send an authenticated email to user@yourdomain.com from from@fromdomain.com, password = authentic; then use the following steps:

1. In the Pin/Rcpt field type authentic.
2. Click Submit Data to save your changes.
3. Click on the Edit menu > System link.
4. In the Name field, type user.
5. In the Location field, type yourdomain.com.
6. Click Submit Data to save the new system information settings.

2.5.3 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 2.5.1).
   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 2.5.1).
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.

2.5.4 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. 2.5.4. *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 2.5.4.A. *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 2.5.4 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:

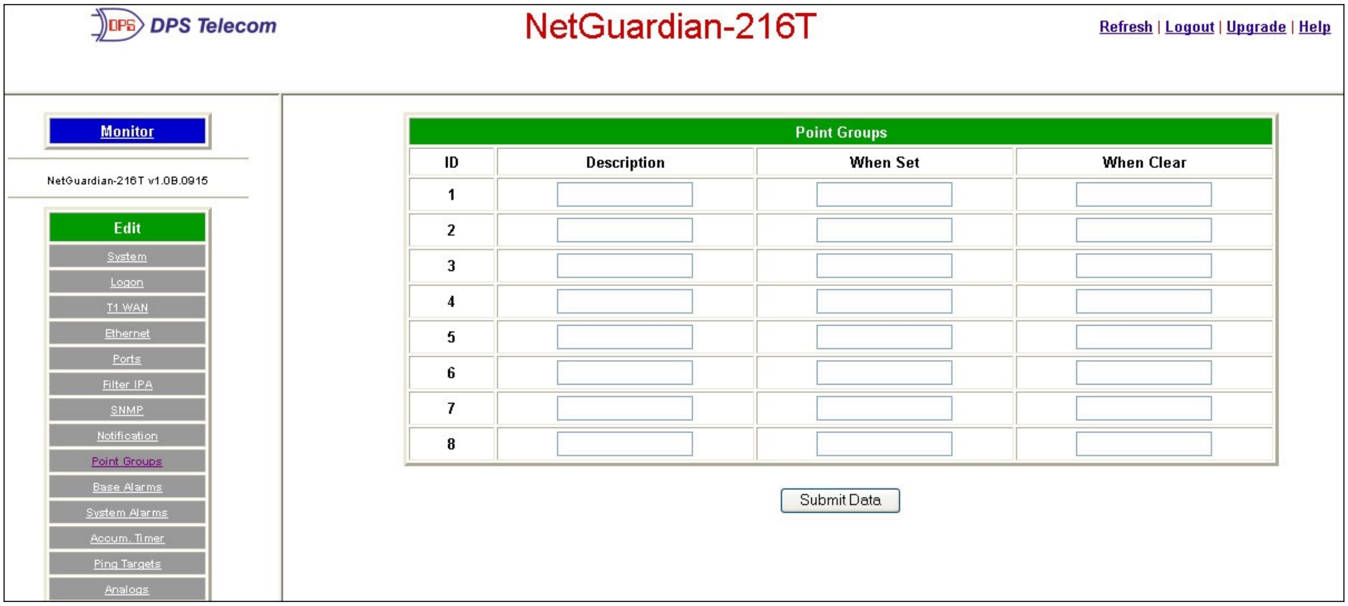
1. From the `Edit` menu> `Notification` screen, select an ID number to use (see Figure 2.5.1).
   Note: Pager IDs are used in the alarm provisioning screen to designate the primary and secondary person/device being paged when an alarm condition occurs or clears.
2. Under the `Type` column, select `TCP` from the drop-down menu (see Figure 2.5.1).
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 2.5.4 for an example message and Table 2.5.4.A for TCP message format information.

2.6 Defining Point Groups

Each NetGuardian Alarm point can be assigned to one of eight groups, which are identified with a user-defined label. Once the point groups are defined, the Point Group IDs can be used to group base and system alarms (see Section 2.7, "Configuring Base Discrete Alarms)."

Use the following steps to define alarm messages for alarm point groups:

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



Point Groups

ID	Description	When Set	When Clear
1			
2			
3			
4			
5			
6			
7			
8			

Fig. 2.6.1. *Define the Alarm and Clear messages for up to eight different point groups*

2.7 Configuring Base Discrete Alarms

All of the NetGuardian's 16 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 2.7.1).

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).

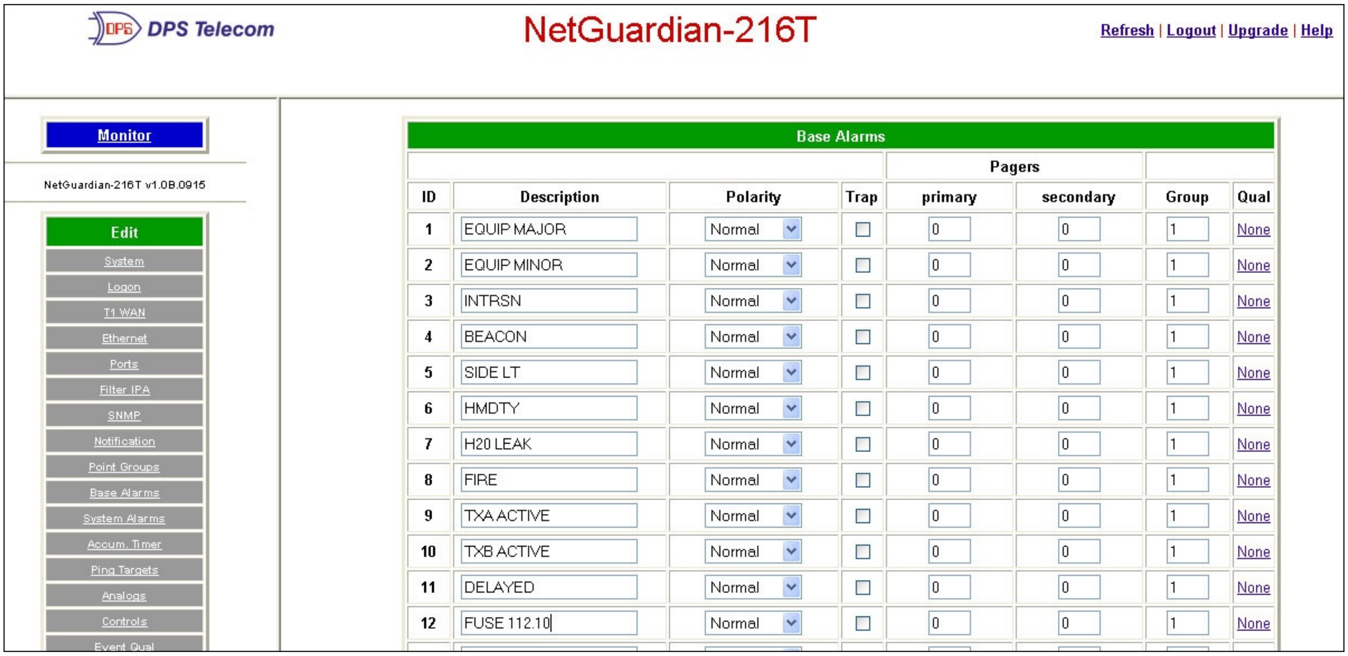
6. Under the **Group** column enter the appropriate point group ID (see Section 2.6, "Defining Point Groups)."

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.

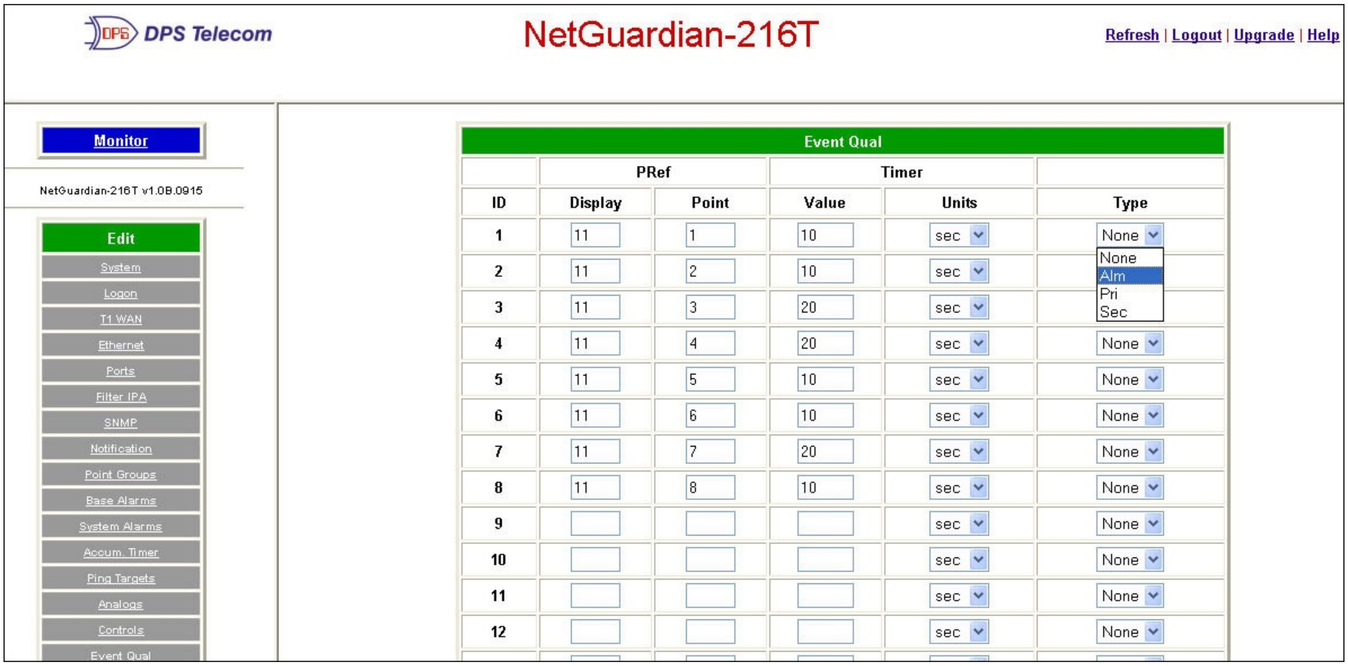


Base Alarms

				Pagers			
ID	Description	Polarity	Trap	primary	secondary	Group	Qual
1	EQUIP MAJOR	Normal	☐	0	0	1	None
2	EQUIP MINOR	Normal	☐	0	0	1	None
3	INTRSN	Normal	☐	0	0	1	None
4	BEACON	Normal	☐	0	0	1	None
5	SIDE LT	Normal	☐	0	0	1	None
6	HMDTY	Normal	☐	0	0	1	None
7	H20 LEAK	Normal	☐	0	0	1	None
8	FIRE	Normal	☐	0	0	1	None
9	TXA ACTIVE	Normal	☐	0	0	1	None
10	TXB ACTIVE	Normal	☐	0	0	1	None
11	DELAYED	Normal	☐	0	0	1	None
12	FUSE 112.10	Normal	☐	0	0	1	None

Fig. 2.7.1. *Configure the 16 discrete alarms from the Base Alarms screen*

2.8 Event Qualification Timers



Event Qual

	PRef		Timer		
ID	Display	Point	Value	Units	Type
1	11	1	10	sec	None
2	11	2	10	sec	
3	11	3	20	sec	
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. 2.8.1. *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).

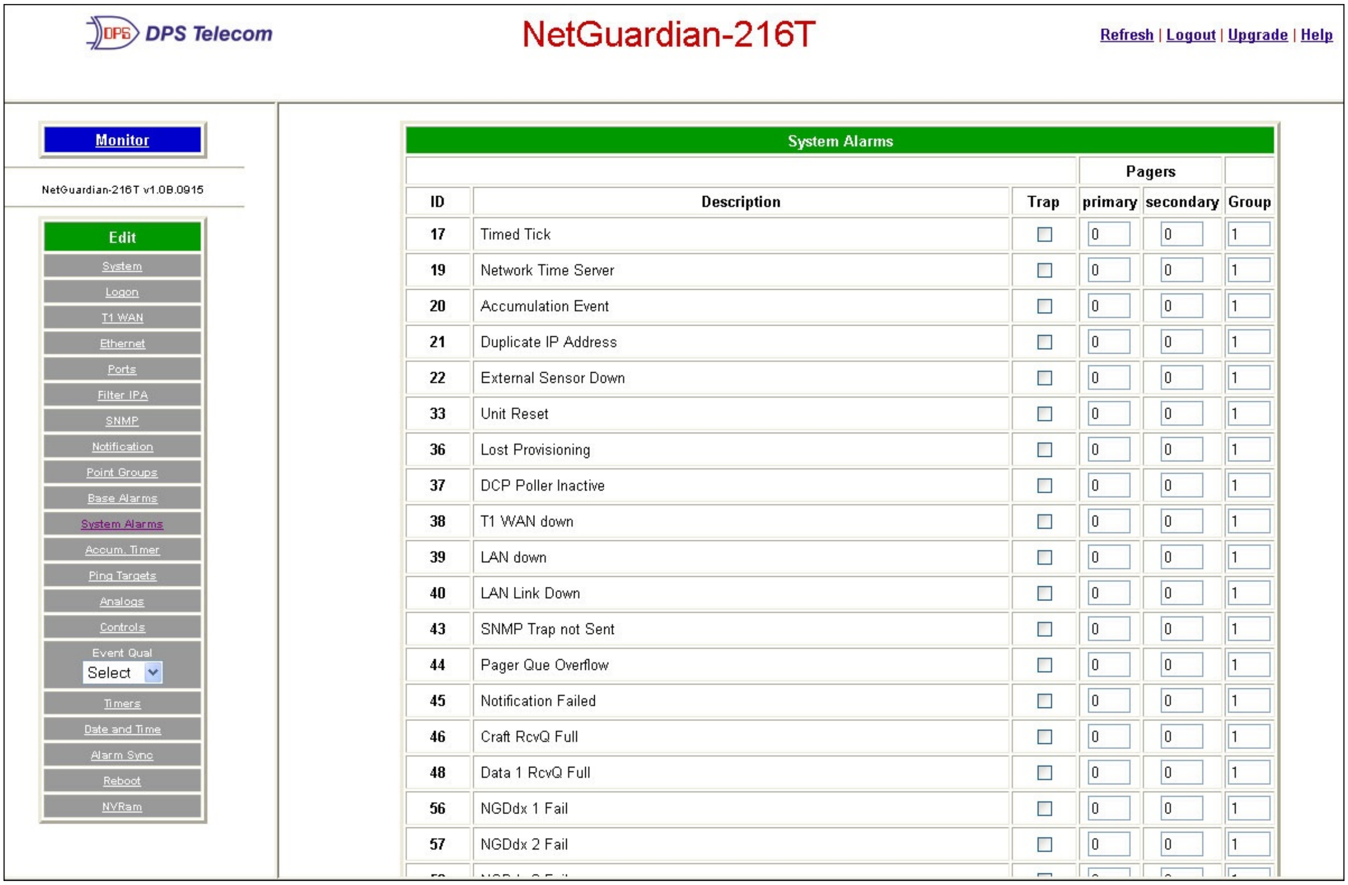
Hot Tip!

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



System Alarms

			Pagers		
ID	Description	Trap	primary	secondary	Group
17	Timed Tick	☐	0	0	1
19	Network Time Server	☐	0	0	1
20	Accumulation Event	☐	0	0	1
21	Duplicate IP Address	☐	0	0	1
22	External Sensor Down	☐	0	0	1
33	Unit Reset	☐	0	0	1
36	Lost Provisioning	☐	0	0	1
37	DCP Poller Inactive	☐	0	0	1
38	T1 WAN down	☐	0	0	1
39	LAN down	☐	0	0	1
40	LAN Link Down	☐	0	0	1
43	SNMP Trap not Sent	☐	0	0	1
44	Pager Que Overflow	☐	0	0	1
45	Notification Failed	☐	0	0	1
46	Craft RcvQ Full	☐	0	0	1
48	Data 1 RcvQ Full	☐	0	0	1
56	NGDdx 1 Fail	☐	0	0	1
57	NGDdx 2 Fail	☐	0	0	1

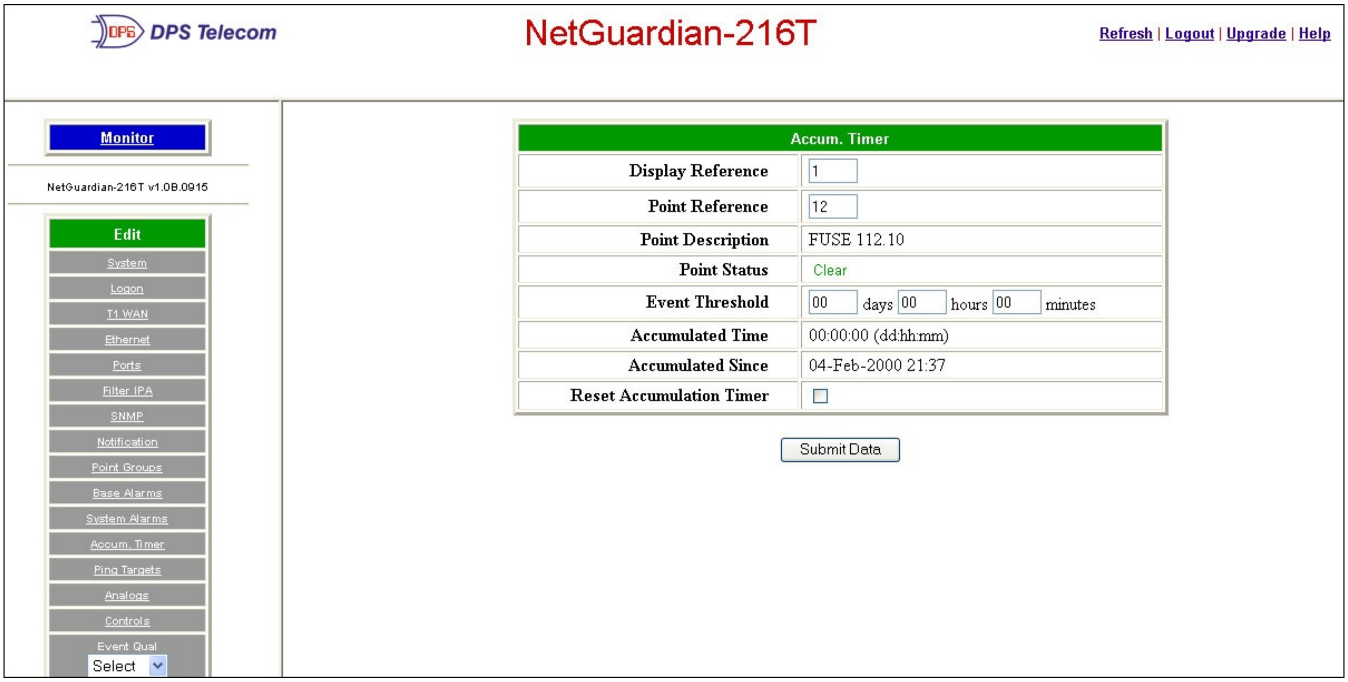
Fig. 2.9.1. *SNMP Traps and primary or secondary pager devices can be selected for each system alarm*

The **System Alarms** screen allows you to individually set the notification method for each system alarm. See 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 2.9.1).
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



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	04-Feb-2000 21:37
Reset Accumulation Timer	□

Fig. 2.10.1. *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 2.10.A. *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 2.10.A for field descriptions.

Use the following steps to configure the accumulation timer settings:

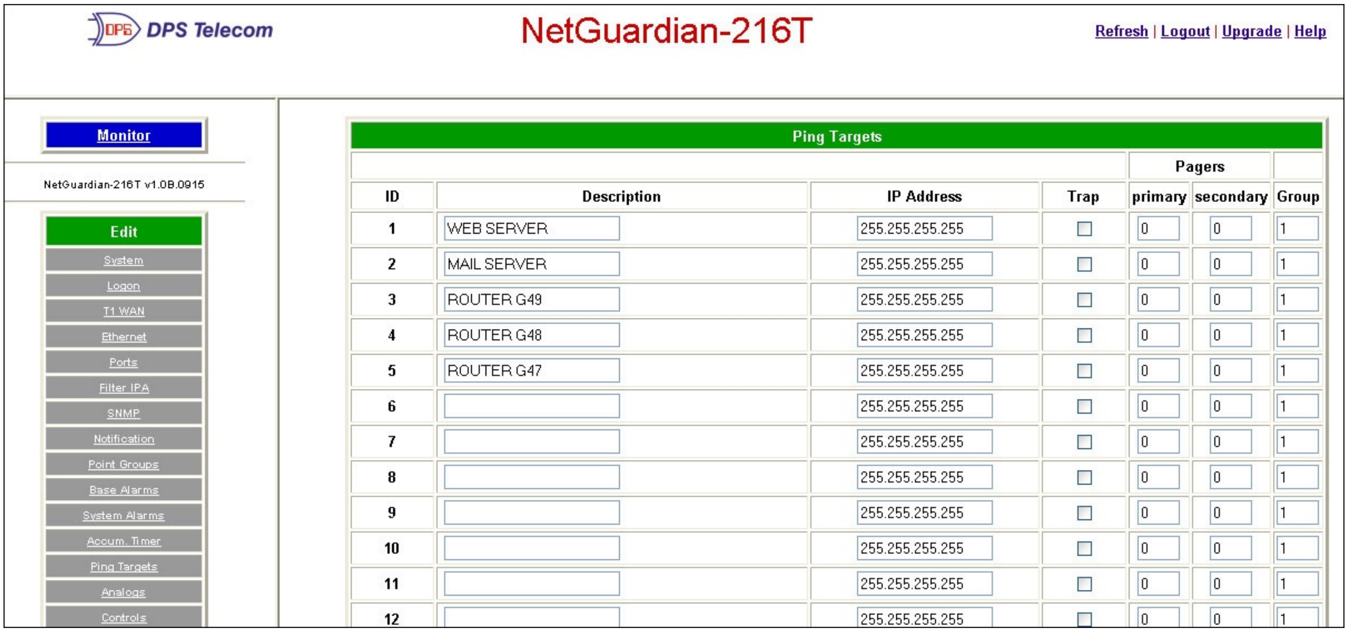
1. Go to the **Edit** menu and select the Accum. Timer link (see Figure 2.10.1).
2. In the **Display Reference** field enter the corresponding display number to be monitored.
3. In the **Point Reference** field enter the corresponding alarm point to be monitored.
4. In the **Event Threshold** row enter the appropriate running total days, hours, and minutes a point is in an alarm state in order to send an accumulation event system alarm.
5. 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.

2.11 Configuring Ping Targets



Ping Targets

				Pagers		
ID	**Description**	**IP Address**	**Trap**	**primary**	**secondary**	**Group**
1	WEB SERVER	255.255.255.255	☐	0	0	1
2	MAIL SERVER	255.255.255.255	☐	0	0	1
3	ROUTER G49	255.255.255.255	☐	0	0	1
4	ROUTER G48	255.255.255.255	☐	0	0	1
5	ROUTER G47	255.255.255.255	☐	0	0	1
6		255.255.255.255	☐	0	0	1
7		255.255.255.255	☐	0	0	1
8		255.255.255.255	☐	0	0	1
9		255.255.255.255	☐	0	0	1
10		255.255.255.255	☐	0	0	1
11		255.255.255.255	☐	0	0	1
12		255.255.255.255	☐	0	0	1

***Fig. 2.11.1.** Configure the ping target parameters from the Ping Info screen*

Each of the 32 ping targets can be provisioned with a description, an IP address, 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:

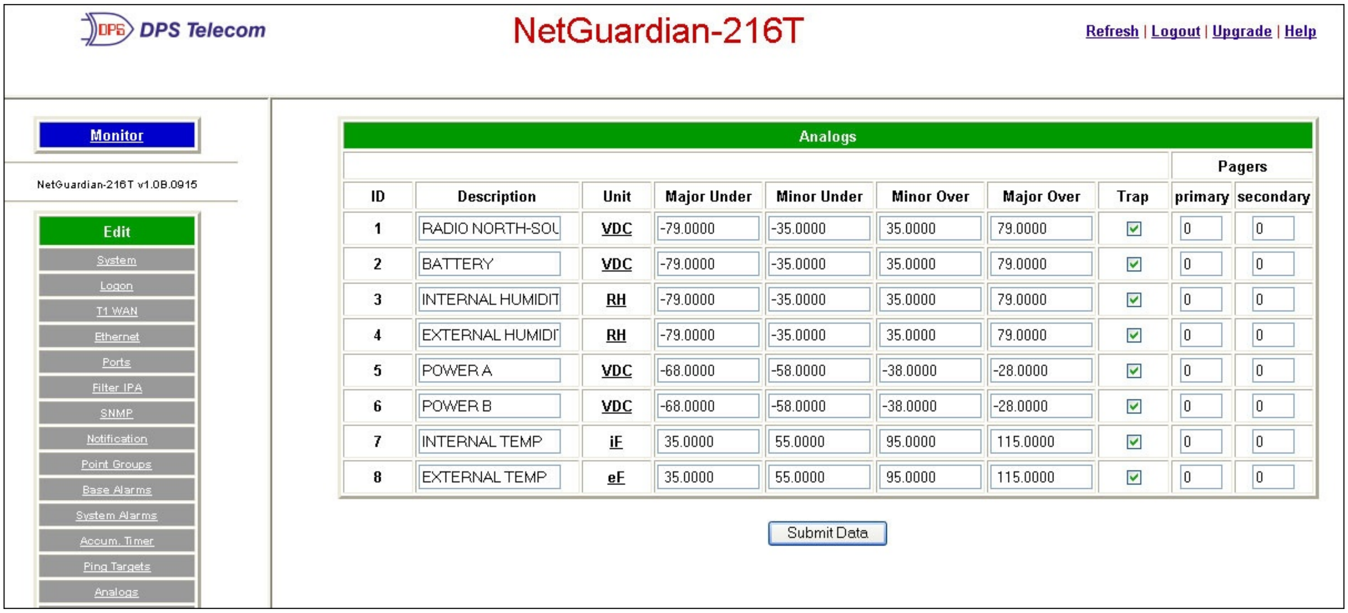
1. From the **Edit** menu select **Ping Targets** (see Figure 2.11.1).
2. In the **Description** field enter a description of the device to be pinged.
3. In the **IP Address** field enter the IP address of the device to be pinged.
4. Under the **Trap** column check the box to designate that an SNMP trap will be sent when an alarm condition exists. Leaving the box blank designates that an SNMP trap will not be sent when an alarm condition exists.
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 216T 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 216T's analog channels must be individually configured to monitor data. The ADCs (analog to digital converters) support a range of –70 to 94 VDC. There are four alarm trip points (thresholds) in ascending order: major under, minor under, minor over, and major over. You can choose the values for each of the thresholds on all channels. As with the other alarms, you can designate whether or not to send an SNMP trap when a threshold is crossed. The primary/secondary pager used to report the alarm is also set here. The thresholds must be set from `Under` to `Over` in either ascending or descending potential (or current) order. Thus the settings of –10, –5, 5 and 10 corresponding respectively to major under, minor under, minor over, and major over is valid.

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

To change any one analog alarm to measure current instead, a dipswitch setting must be changed. 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.

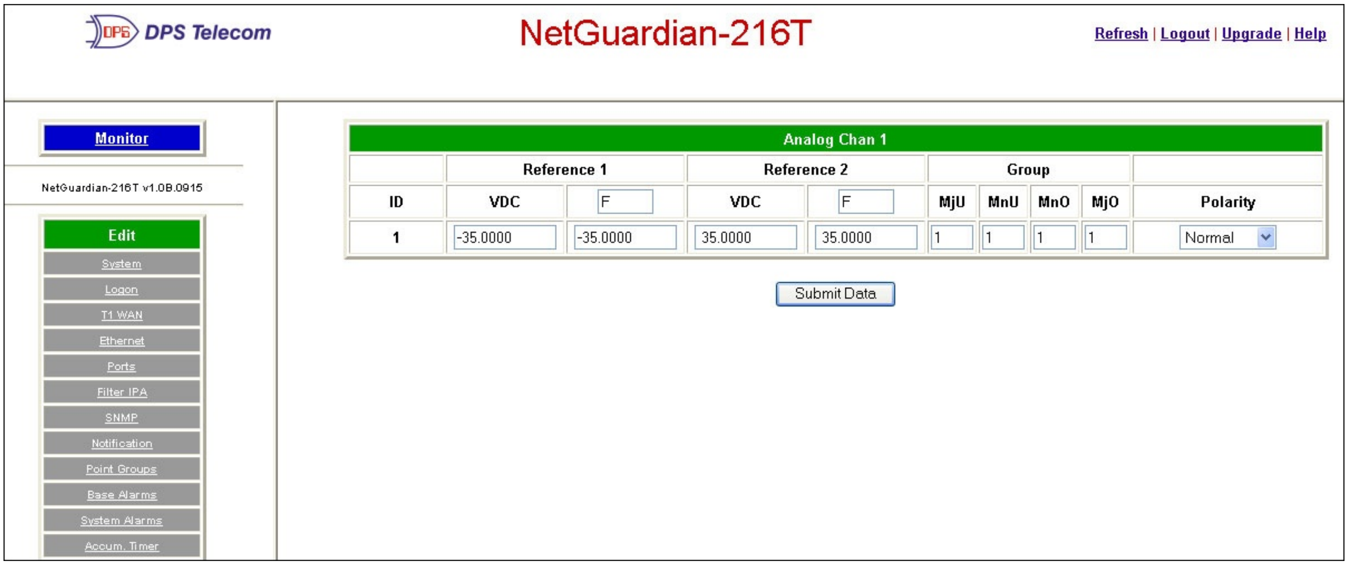


Analogs

								Pagers	
ID	Description	Unit	Major Under	Minor Under	Minor Over	Major Over	Trap	primary	secondary
1	RADIO NORTH-SOU	VDC	-79.0000	-35.0000	35.0000	79.0000	☑	0	0
2	BATTERY	VDC	-79.0000	-35.0000	35.0000	79.0000	☑	0	0
3	INTERNAL HUMIDIT	RH	-79.0000	-35.0000	35.0000	79.0000	☑	0	0
4	EXTERNAL HUMIDI	RH	-79.0000	-35.0000	35.0000	79.0000	☑	0	0
5	POWER A	VDC	-68.0000	-58.0000	-38.0000	-28.0000	☑	0	0
6	POWER B	VDC	-68.0000	-58.0000	-38.0000	-28.0000	☑	0	0
7	INTERNAL TEMP	iF	35.0000	55.0000	95.0000	115.0000	☑	0	0
8	EXTERNAL TEMP	eF	35.0000	55.0000	95.0000	115.0000	☑	0	0

Fig. 2.12.1. *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 2.12.1 and 2.12.2).
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.



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

***Fig. 2.12.2.** 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

The integrated temperature and battery sensor allows the user to monitor surrounding temperature as well as the unit's current draw. 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 and set it to 7.
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 2.12.2).
3. In **Reference 1** enter **iF** (internal Fahrenheit) in the box next to **VDC** (the space may already contain the abbreviation VDC); see Figure 2.12.2. 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).
5. If you have connected the external temperature sensor, follow the above procedure to configure, except set it to channel 8 and enter eF (external Fahrenheit) in the **Reference** menu.

Current Sensor

1. In the **Description** field enter a description in the analog channel you are using for the integrated current sensor (5 for power feed A or 6 for power feed 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.

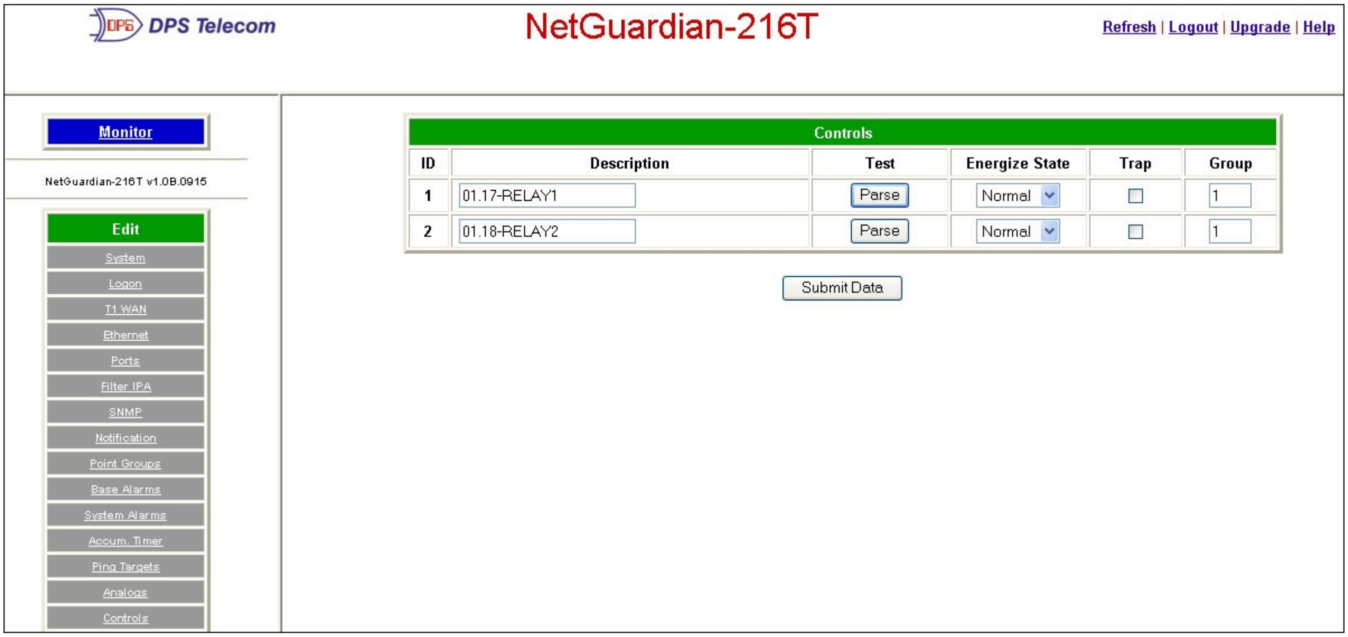
Analog Accuracy:
+/- 1% of analog range.

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 2.12.3.A. *Analog step sizes*

2.13 Configuring the Control Relays



Controls

ID	Description	Test	Energize State	Trap	Group
1	01.17-RELAY1	Parse	Normal	□	1
2	01.18-RELAY2	Parse	Normal	□	1

Fig. 2.13.1. *Configure controls in the Edit menu > Controls screen*

The Relays of the NetGuardian 216T 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 activated. 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).

1. From the **Edit** menu, select the **Controls** link (see Figure 2.13.1).
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 an 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.

Hot Tip!

The Energize State is different than the normal state of the physical contact closure position of each relay, which is determined by circuit board jumpers. This gives you the added benefit of being able to monitor the wire. In the event of a power failure, the relay would de-energize back to it's normal physical contact closure set by the circuit board jumper for that relay. Check your jumper settings and relay connections before setting to Normal or Inverted. Refer to the NetGuardian manual for 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 2.13.1) 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

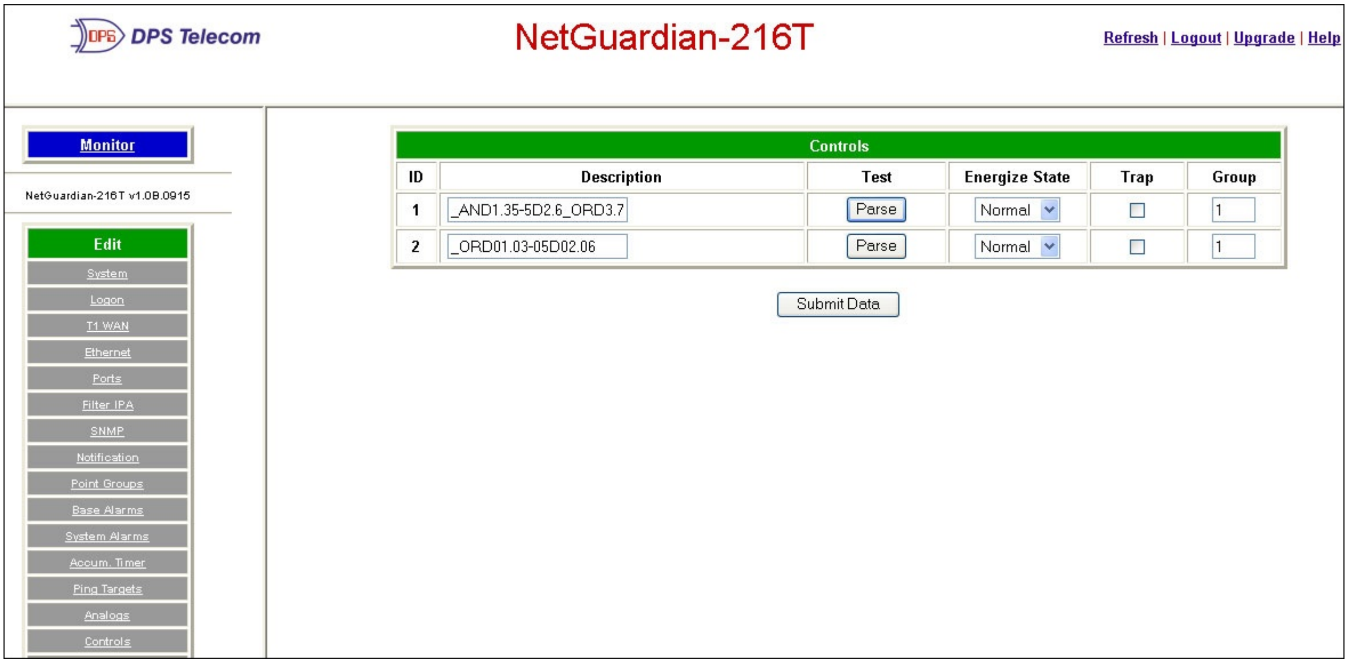
In the **Description** field enter the display, alarm point, an under bar (**_**), and the description of the alarm you wish to set to ORed. For example, if ORing discrete alarm 8, enter **01.08_**your alarm description. (The display and alarm point are formatted as **DD.PP**, where DD = the display 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	_AND1.35-5D2.6_ORD3.7	Parse	Normal	□	1
2	_ORD01.03-05D02.06	Parse	Normal	□	1

Submit Data

Fig. 2.13.2. *Derived control relays*

_AN D 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 _AN D02.07 D03.10.-12 is logically equivalent to ((1.3 || 1.4 || 1.5 || 2.6&& (2.7 && 3.10 && 3.12))

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 **rls**.

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 2.13.2).

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.

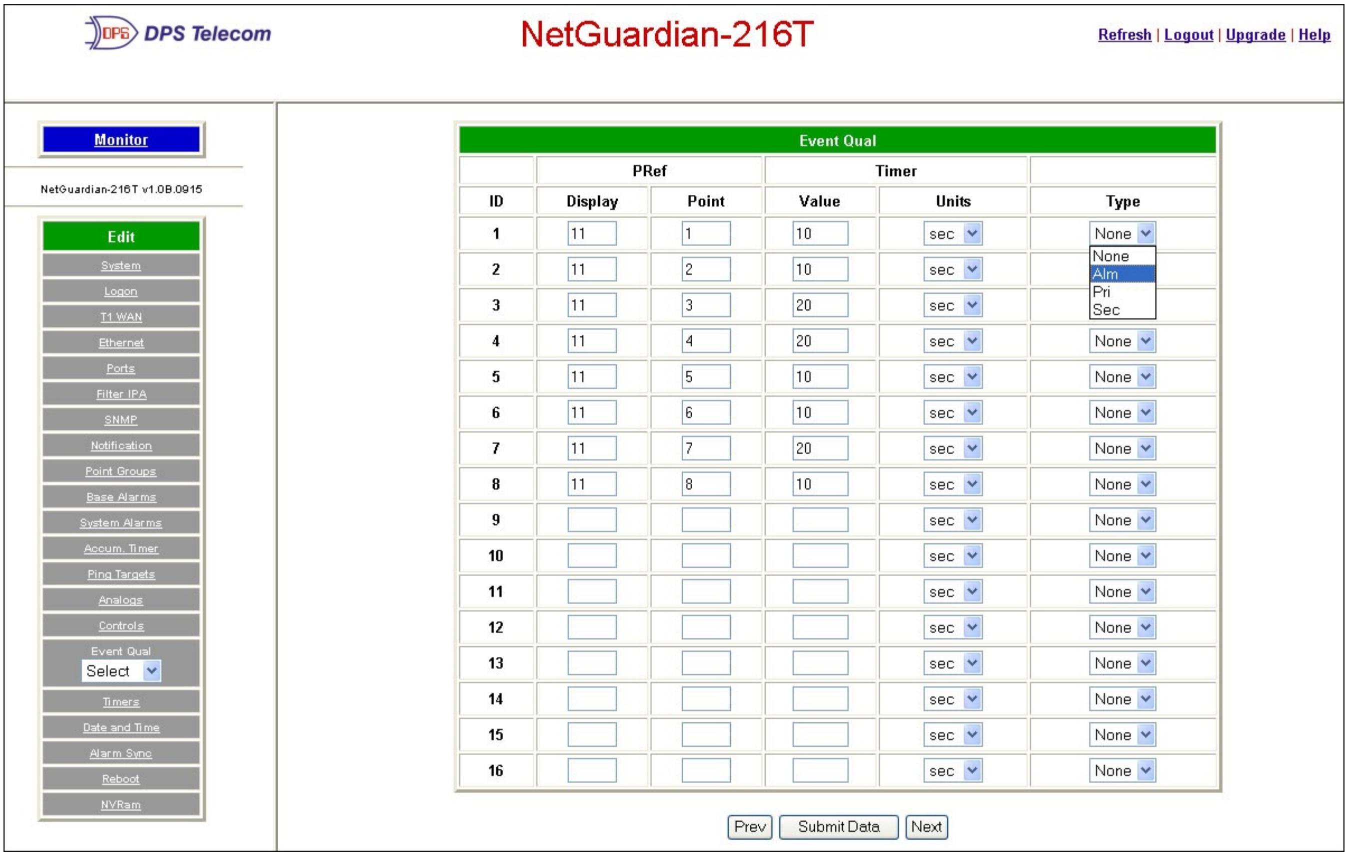
Description format **DD.PP_** where **DD** = Display #, and **PP** = Point #. Example: **01_08_My Control** : ORs the state of the alarm at display1, point 8 to the relay (see Figure 2.13.2).

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 **rls**. Conversely, an inverted control is latched when the relay state is `rls`, 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 2.13.2).

2.13.4 Override Default Relay Momentary Time Using Event Qualification



Event Qual

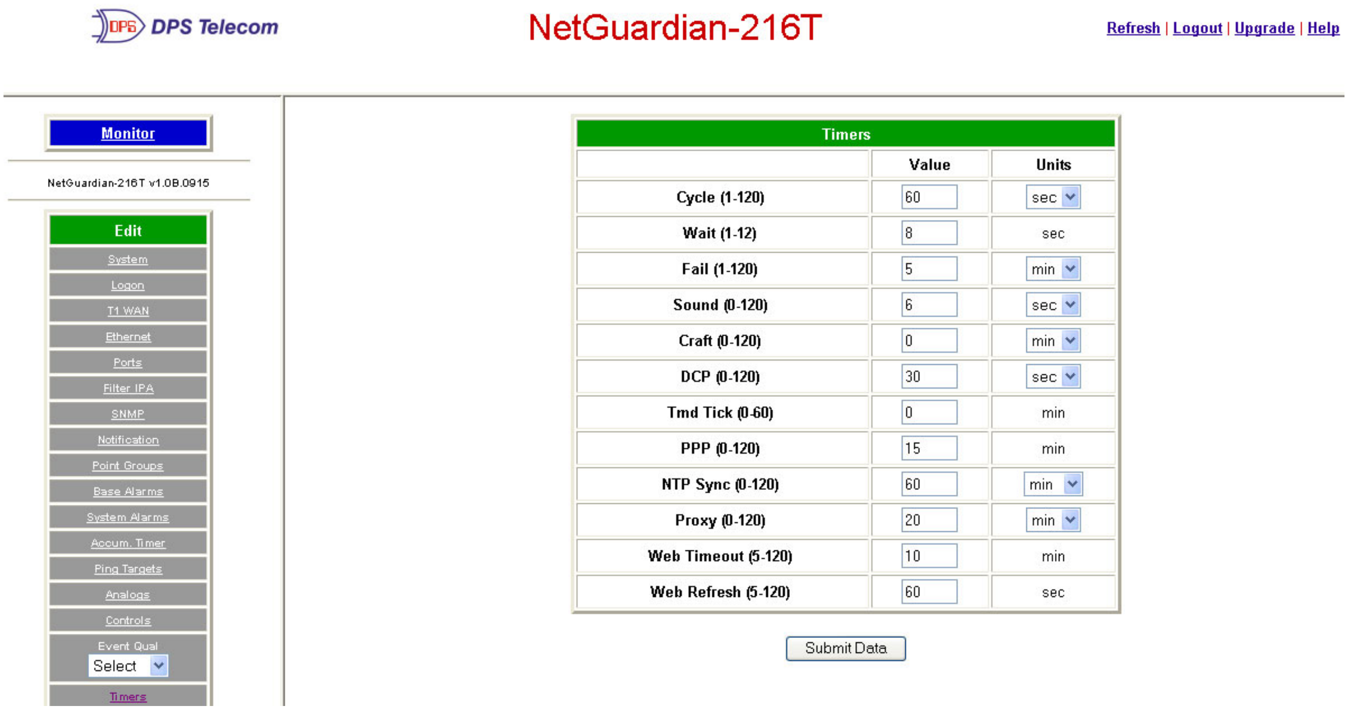
	PRef		Timer		
ID	Display	Point	Value	Units	Type
1	11	1	10	sec	None
2	11	2	10	sec	
3	11	3	20	sec	
4	11	4	20	sec	None
5	11	5	10	sec	None
6	11	6	10	sec	None
7	11	7	20	sec	None
8	11	8	10	sec	None
9				sec	None
10				sec	None
11				sec	None
12				sec	None
13				sec	None
14				sec	None
15				sec	None
16				sec	None

Fig. 2.13.4. *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
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)	10	min
Web Refresh (5-120)	60	sec

Fig. 2.14.1. *When a target fails to respond to a ping within the fail time period, a fault is declared*

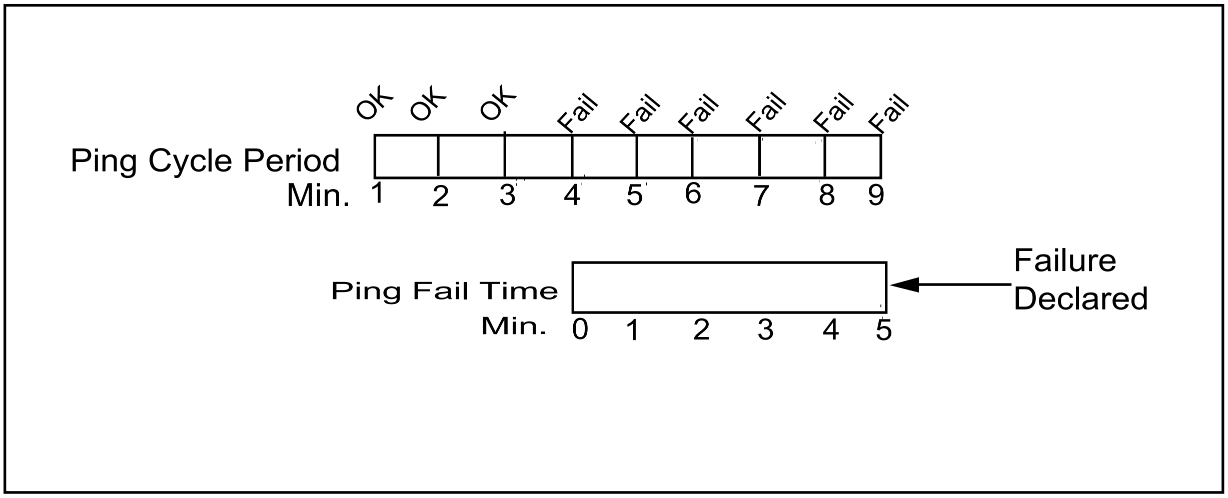


Fig. 2.14.2. *Default timer settings*

The NetGuardian's System Timers allow you to control the rate of your pinging activity, time of speaker sounding, inactivity time for the data port, 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 2.14.1).

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 0 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 0 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 0 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 0 and 120 and set the units to either seconds or minutes.

6. 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.")

7. Set the **DCP** time. Set between 0 and120 (sec or min). This determines the period of time over which, if the NetGuardian does not receive a DCP poll, to trigger an alarm. This option is only available if the primary reporting protocol of the active NetGuardian device is DCP.

8. Set the **Timed Tick** between 0 and 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.

9. Set the **NTP** Sync. Set between 0 and 120 (sec or min).

Hot Tip!

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

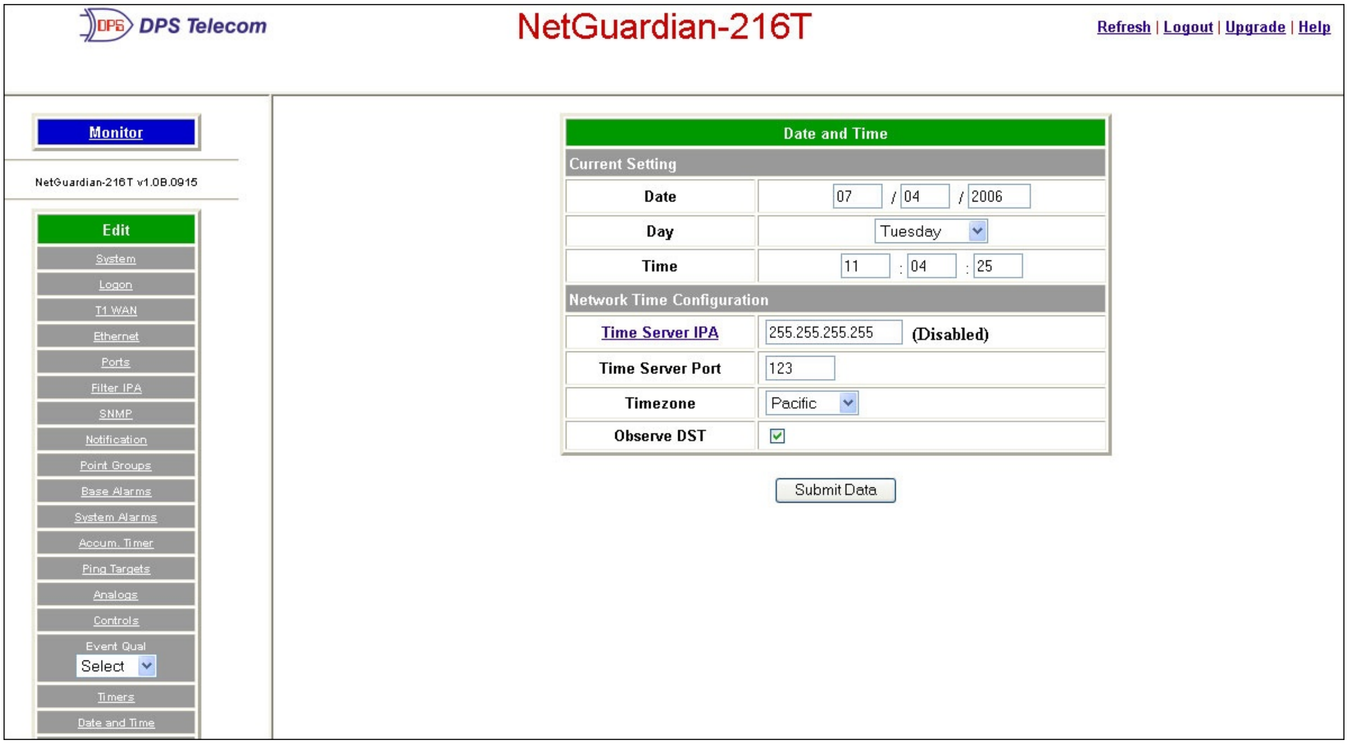
10. Set the **Proxy** Time between 0 and 120 minutes. The proxy timer allows the user to specify how long the NetGuardian should wait during a silent period before timing out and disconnecting a proxy connection. Traffic in either direction will automatically keep the proxy connection alive by resetting the time for another period **Note:** A proxy timer value of 0 means never time out proxy connections. The default proxy timer value is 20 minutes. Previous NetGuardian versions use a 20-minute proxy timer value as well. PTCP (Permanent TCP) connections never time out regardless of the proxy time setting.

11. Set the **Web Edit Timeout** time between 5 and 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 minutes.
    Note: The time units are preset to minutes by default and cannot be changed.

12. Set the **Web Monitor Refresh** time between 5 and 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.

13. Set the **LMI** Poll Delay time between 5 and 120 seconds. It determines how often the RTU communicates with the far-end T1 WAN device to verify WAN connectivity.

2.15 Setting the System Date and Time



Date and Time	
Current Setting	
Date	07 / 04 / 2006
Day	Tuesday
Time	11 : 04 : 25
Network Time Configuration	
Time Server IPA	255.255.255.255 (Disabled)
Time Server Port	123
Timezone	Pacific
Observe DST	☑

Fig. 2.15.1. *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!

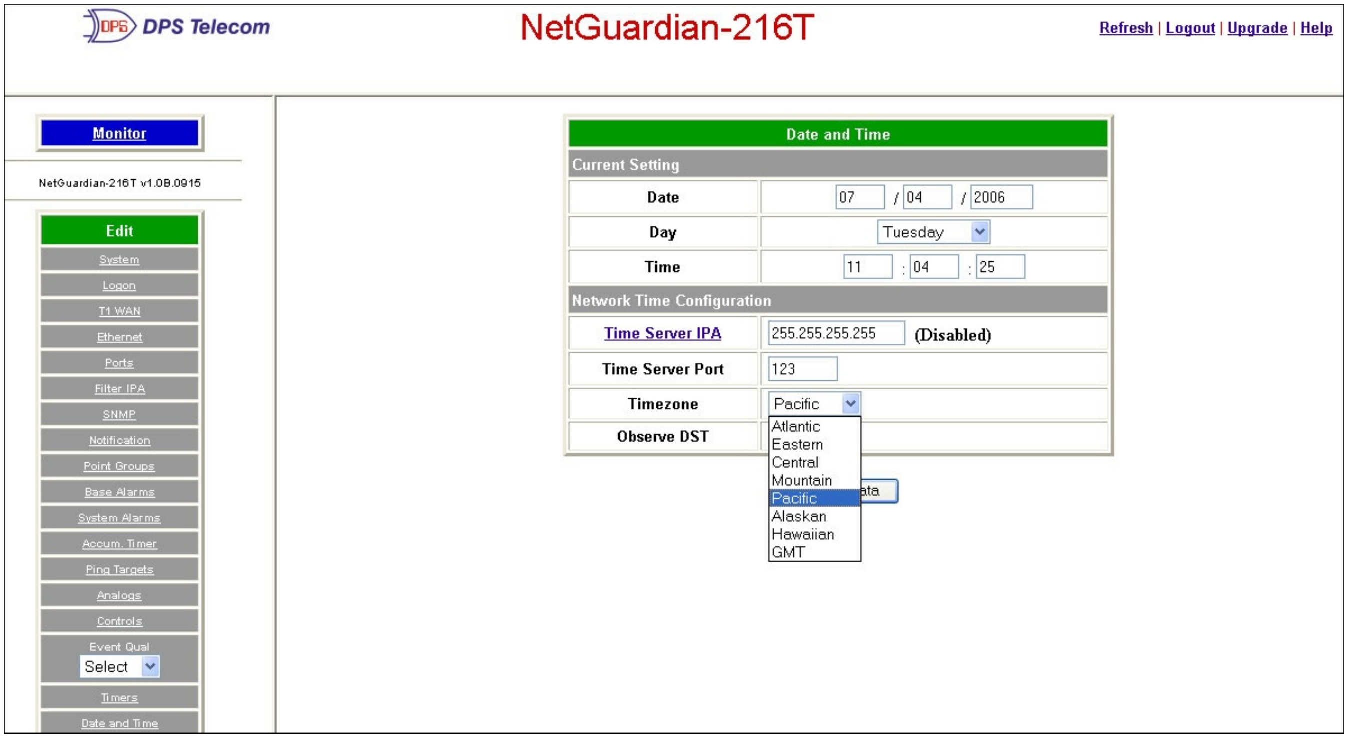
The date and time can also be set from an SNMP manager.

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

1. From the **Edit** menu, select **Date and Time** (see Figure 2.15.1).
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 Section 2.15.1 for instructions on setting the network time configuration).

2.15.1 Network Time Protocol Support



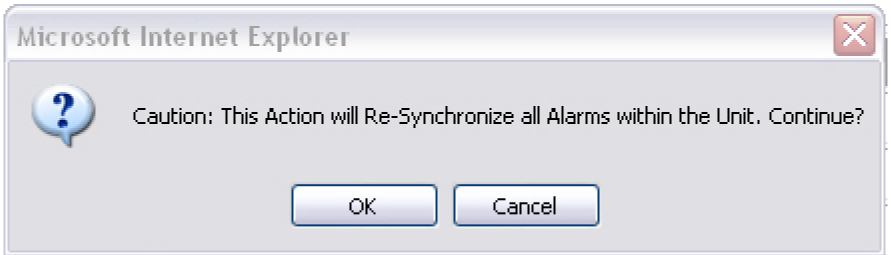
Date and Time	
Current Setting	
Date	07 / 04 / 2006
Day	Tuesday
Time	11 : 04 : 25
Network Time Configuration	
Time Server IPA	255.255.255.255 (Disabled)
Time Server Port	123
Timezone	Pacific
Observe DST	

__Fig. 2.15.1.1.__ 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 savings.
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 Alarm Sync

Clicking on the **Alarm Sync** link from the **Edit** menu will re-synchronize all of the NetGuardian alarms. This command clears all alarms, so that a new notification is sent for all standing alarms. 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 2.16.1).



Caution: This Action will Re-Synchronize all Alarms within the Unit. Continue?

__Fig. 2.16.1.__ Click Ok to re-synchronize the NetGuardian alarms or Cancel to exit

2.17 Saving Changes or Resetting Factory Defaults

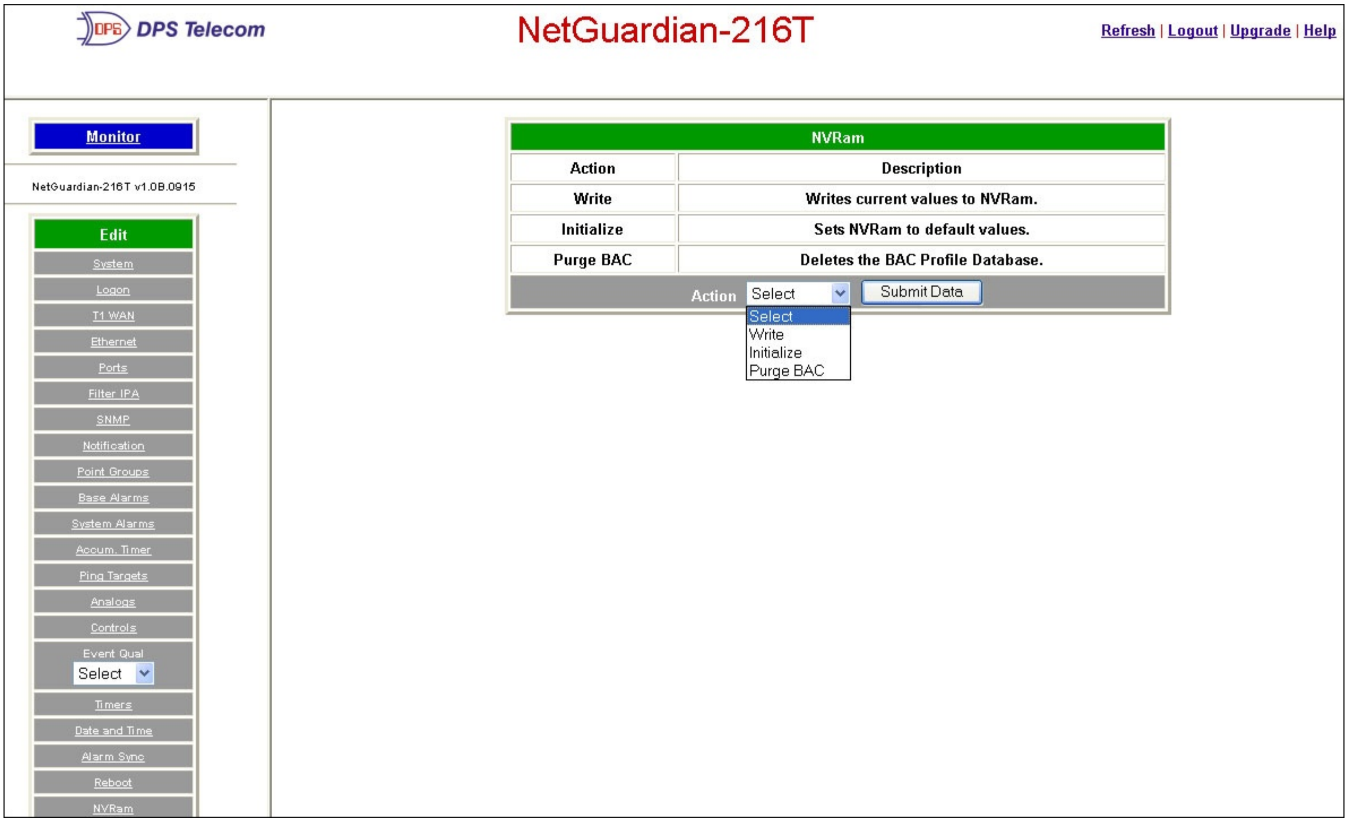
Your NetGuardian 216T comes equipped with Non Volatile RAM (NVRAM), which enables the retention of data in the event of power loss. This section allows you to write and initialize the NVRAM.

Note: Some changes require a reboot of the NetGuardian to take effect (see Section 2.18, "Rebooting the NetGuardian)."

1. From the **Edit** menu select **NVRAM** (see Figure 2.17.1).
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. The "Purge BAC" option is not used for NetGuardian 216T.



NVRam

Action	Description
Write	Writes current values to NVRam.
Initialize	Sets NVRam to default values.
Purge BAC	Deletes the BAC Profile Database.

Fig. 2.17.1. NVRAM enables the NetGuardian to retain data even through a power loss

2.18 Rebooting the NetGuardian

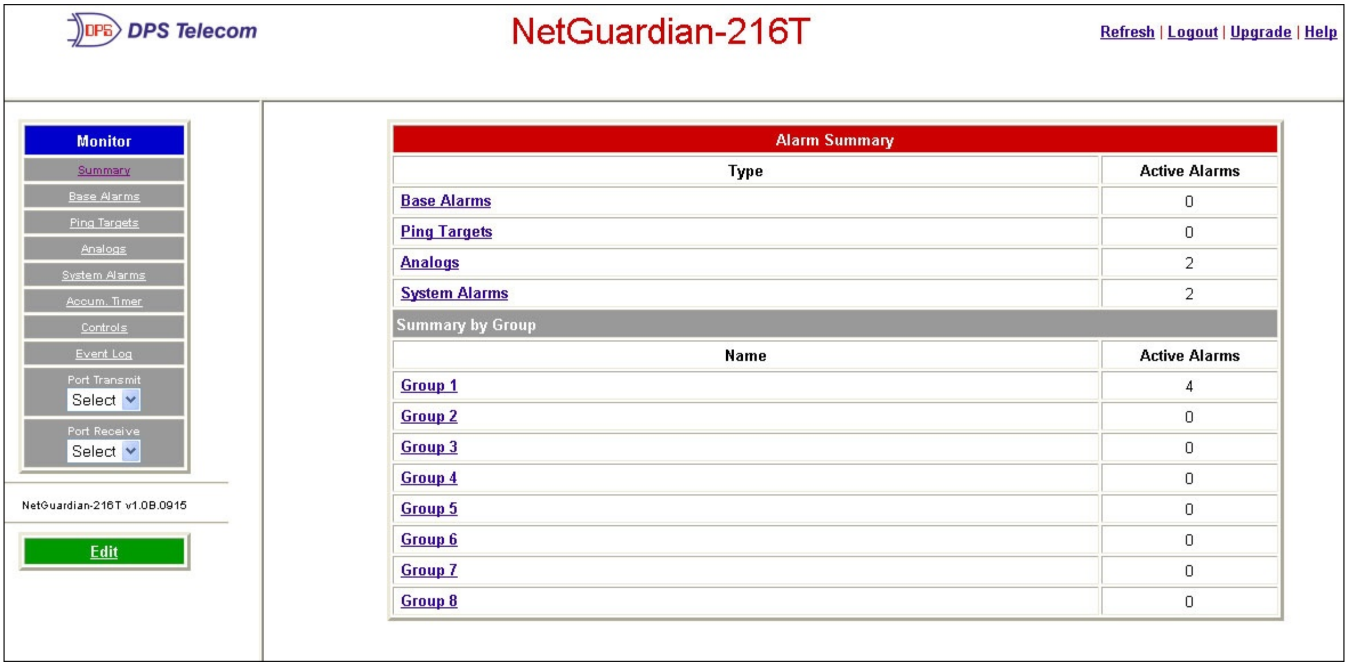
Click on the **Reboot** link from the **Edit** menu to reboot the NetGuardian after writing all changes to NVRAM. Any changes to port settings require a reboot to take effect. The window footer will display the text **Reboot Needed** if a reboot is necessary to initiate changes.

3 Web Server Monitoring

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 it's 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



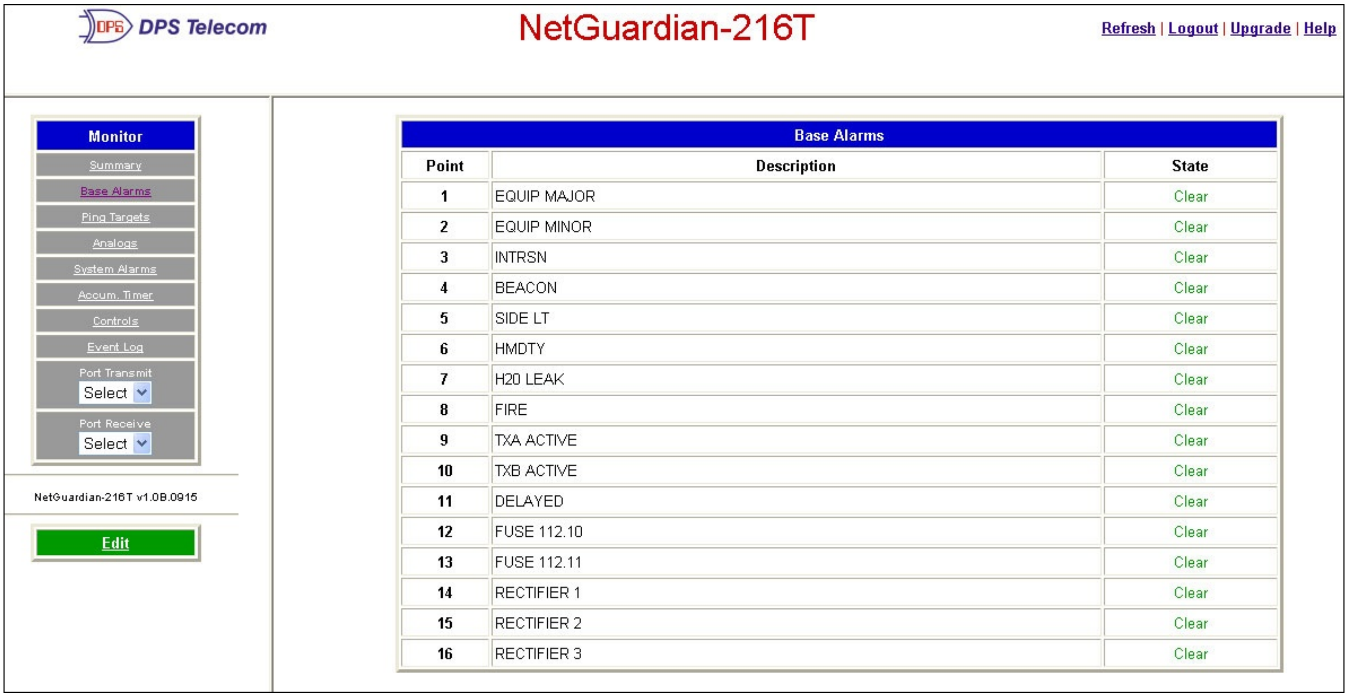
Alarm Summary

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

Fig. 3.1.1. *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



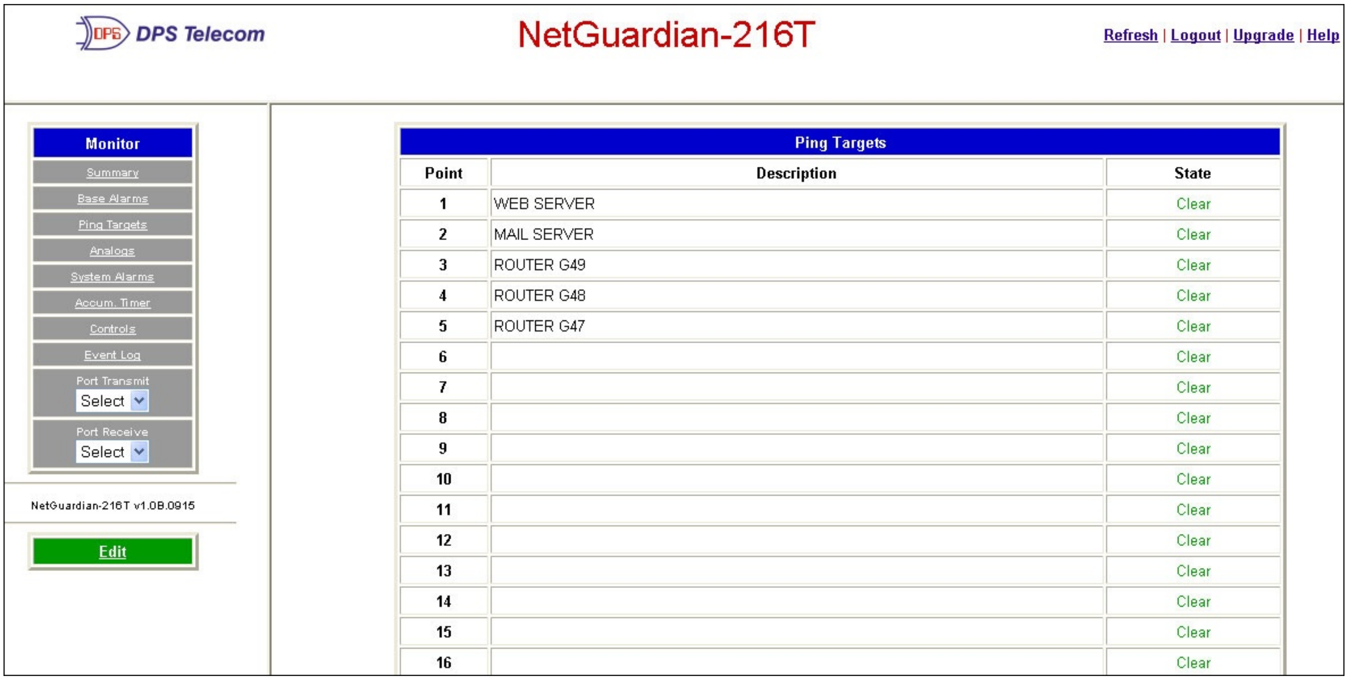
Base Alarms

Point	Description	State
1	EQUIP MAJOR	Clear
2	EQUIP MINOR	Clear
3	INTRSN	Clear
4	BEACON	Clear
5	SIDE LT	Clear
6	HMDTY	Clear
7	H20 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. 3.2.1. *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



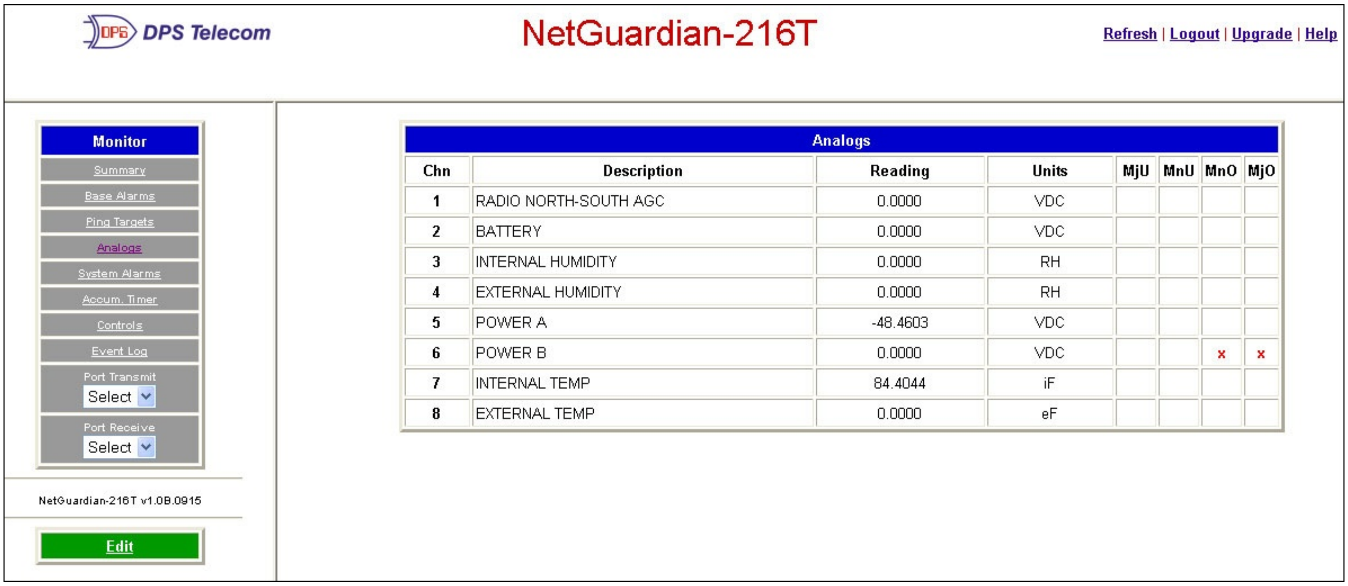
Ping Targets

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. 3.3.1. *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



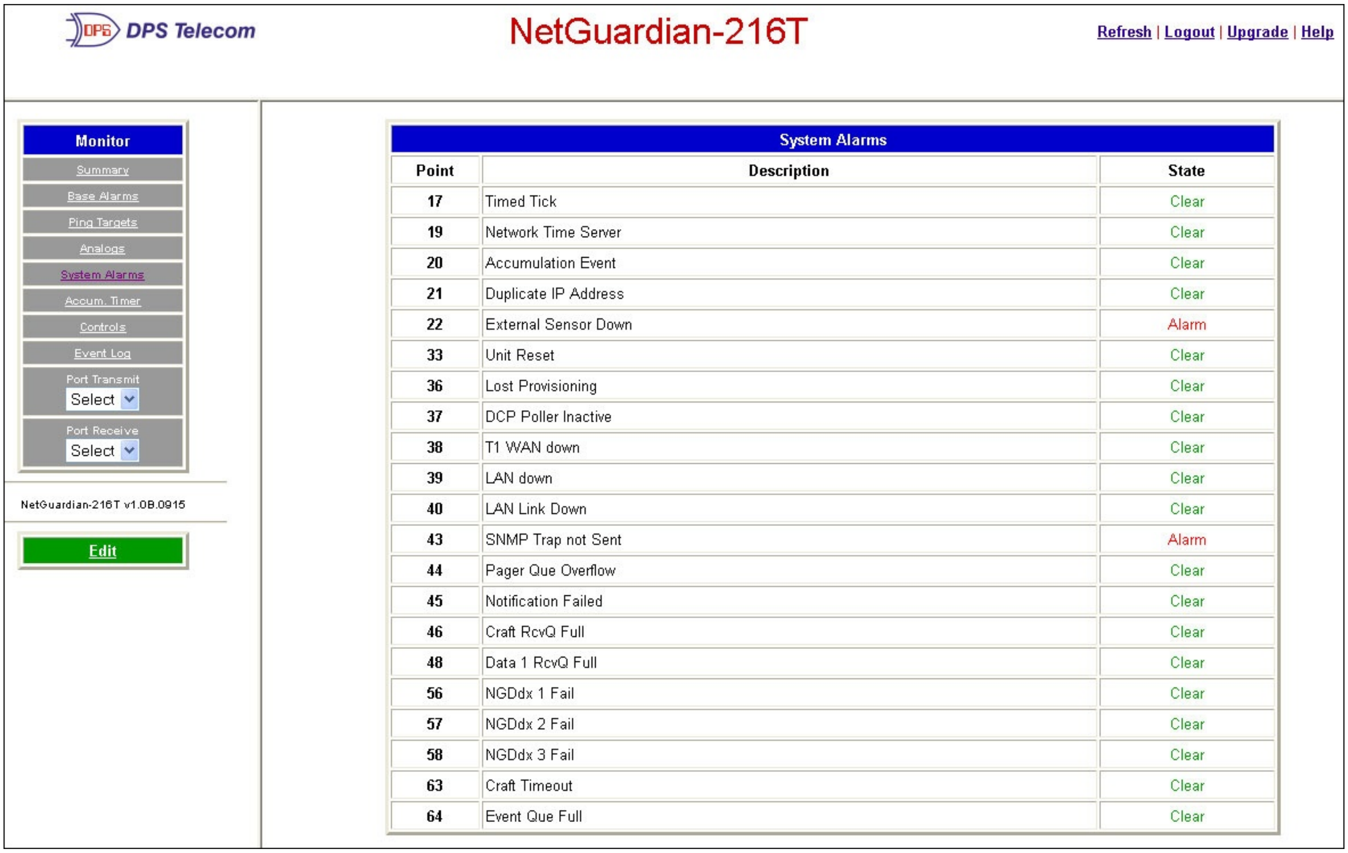
Analogs

Chn	Description	Reading	Units	MjU	MnU	MnO	MjO
1	RADIO NORTH-SOUTH AGC	0.0000	VDC				
2	BATTERY	0.0000	VDC				
3	INTERNAL HUMIDITY	0.0000	RH				
4	EXTERNAL HUMIDITY	0.0000	RH				
5	POWER A	-48.4603	VDC				
6	POWER B	0.0000	VDC			×	×
7	INTERNAL TEMP	84.4044	iF				
8	EXTERNAL TEMP	0.0000	eF				

Fig. 3.4.1. *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 System Alarms



System Alarms

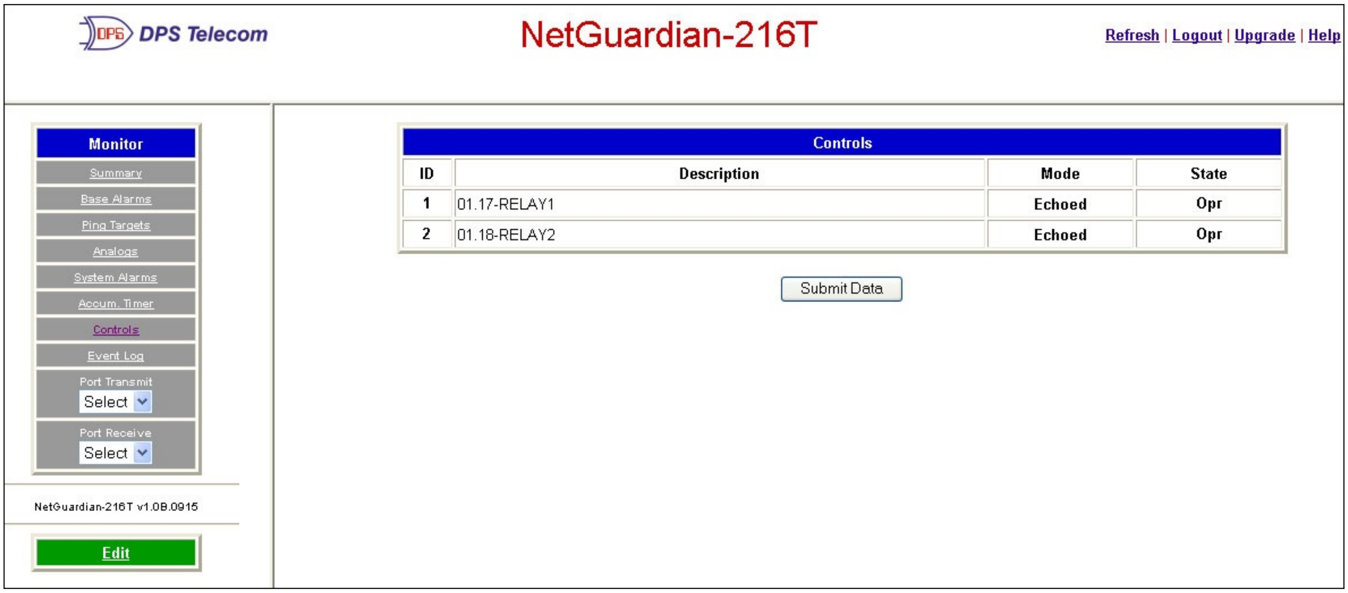
Point	Description	State
17	Timed Tick	Clear
19	Network Time Server	Clear
20	Accumulation Event	Clear
21	Duplicate IP Address	Clear
22	External Sensor Down	Alarm
33	Unit Reset	Clear
36	Lost Provisioning	Clear
37	DCP Poller Inactive	Clear
38	T1 WAN down	Clear
39	LAN down	Clear
40	LAN Link Down	Clear
43	SNMP Trap not Sent	Alarm
44	Pager Que Overflow	Clear
45	Notification Failed	Clear
46	Craft RcvQ Full	Clear
48	Data 1 RcvQ Full	Clear
56	NGDdx 1 Fail	Clear
57	NGDdx 2 Fail	Clear
58	NGDdx 3 Fail	Clear
63	Craft Timeout	Clear
64	Event Que Full	Clear

Fig.3.5.1. *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.

3.6 Operating Controls



Controls

ID	Description	Mode	State
1	01.17-RELAY1	Echoed	Opr
2	01.18-RELAY2	Echoed	Opr

Fig. 3.6.1. *Issue controls from the Monitor > Controls screen*

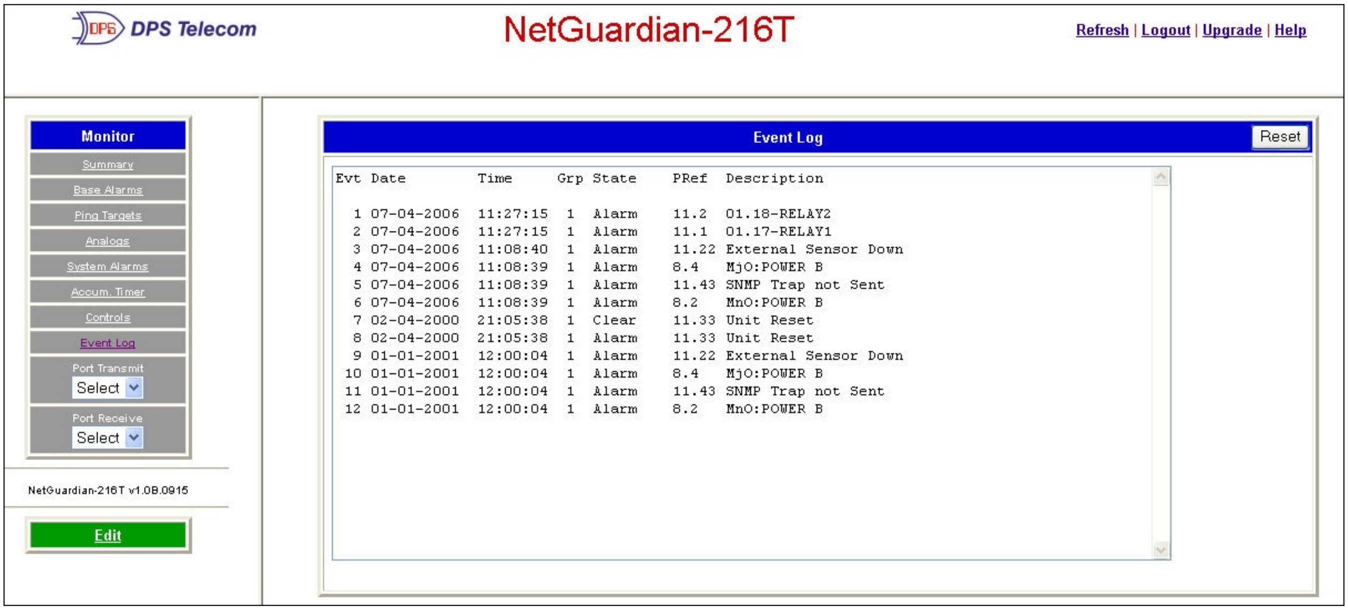
Use the following rules to operate controls:

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.

3.7 Event Logging



Event Log

```
Evt Date       Time     Grp State   PRef  Description

  1 07-04-2006 11:27:15  1  Alarm   11.2  01.18-RELAY2
  2 07-04-2006 11:27:15  1  Alarm   11.1  01.17-RELAY1
  3 07-04-2006 11:08:40  1  Alarm   11.22 External Sensor Down
  4 07-04-2006 11:08:39  1  Alarm   8.4   MjO:POWER B
  5 07-04-2006 11:08:39  1  Alarm   11.43 SNMP Trap not Sent
  6 07-04-2006 11:08:39  1  Alarm   8.2   MnO:POWER B
  7 02-04-2000 21:05:38  1  Clear   11.33 Unit Reset
  8 02-04-2000 21:05:38  1  Alarm   11.33 Unit Reset
  9 01-01-2001 12:00:04  1  Alarm   11.22 External Sensor Down
 10 01-01-2001 12:00:04  1  Alarm   8.4   MjO:POWER B
 11 01-01-2001 12:00:04  1  Alarm   11.43 SNMP Trap not Sent
 12 01-01-2001 12:00:04  1  Alarm   8.2   MnO:POWER B
```

Fig. 3.7.1. *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 3.7.A. *Event Logging window field descriptions*

The NetGuardian 216T Event Log supports the following features:

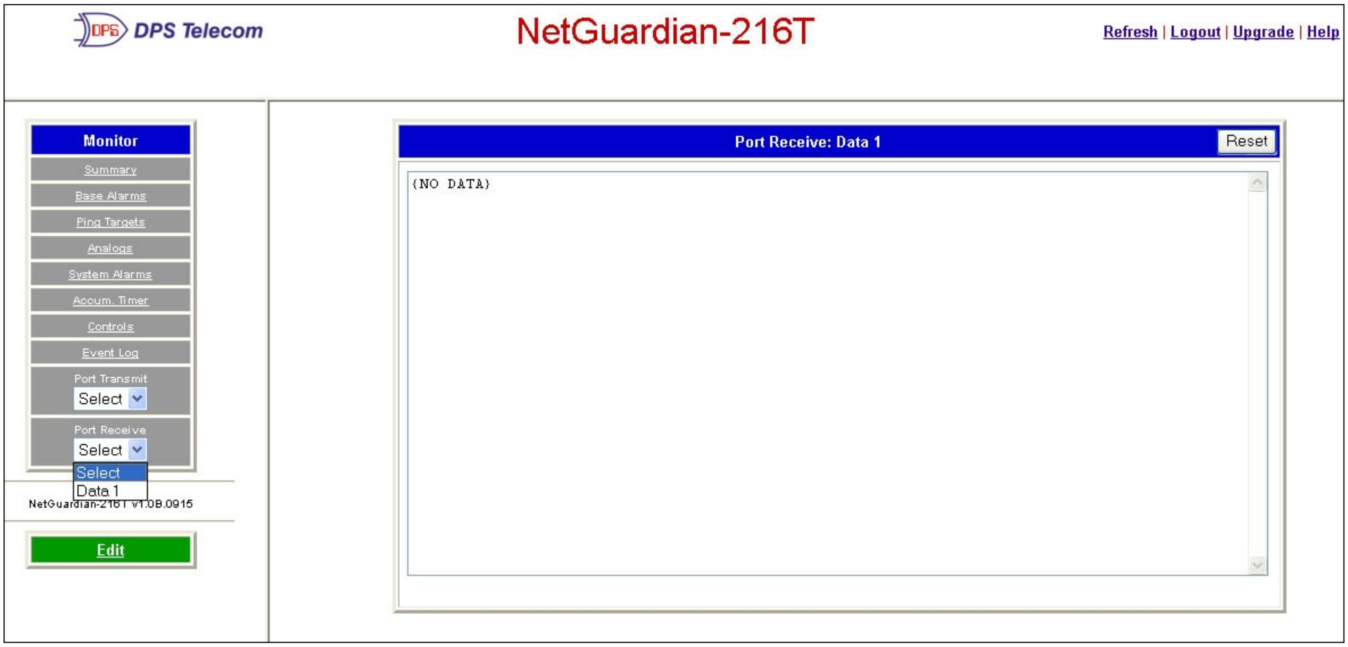
- You can filter Event Log entries by Alarm Point Group, to see only the alarms you want.
- You can reset the Event Log to clear old alarms from the display.
- You can reset the Event Log by Alarm Point Group; for example, clear power alarms while retaining intruder alarms.

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 3.7.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).

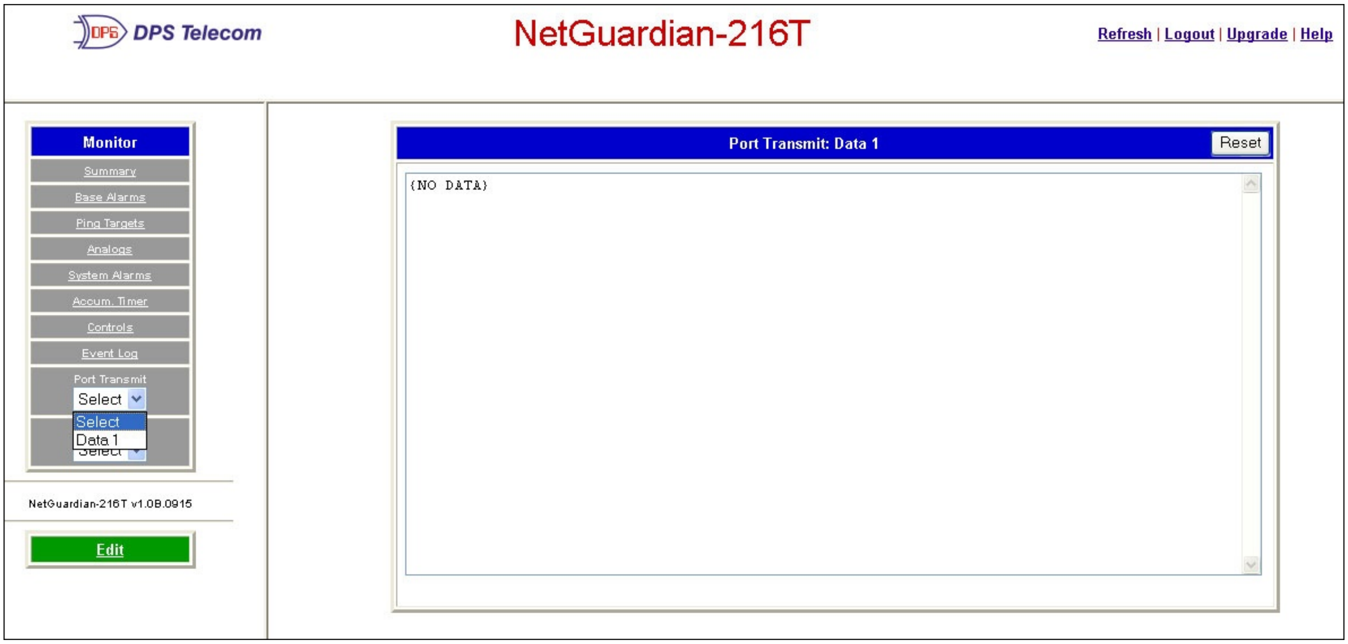
3.8 Monitoring Data Port Activity



```
{NO DATA}
```

Fig. 3.8.1. *To view the data being received by the connected equipment, select Data 1 from the Monitor menu > Port Receive drop-down menu*

The **Port Transmit** and **Port Receive** screens provide live status information for the data port by displaying transmit or receive activity in ASCII. See Appendix C, "ASCII Conversion" for specific ASCII symbol conversion.



{NO DATA}

Fig. 3.8.2. *To view the data being transmitted to the connected equipment, select Data 1 from the Monitor menu > Port Transmit drop-down menu*

4 Appendixes

4.1 Appendix A — Display Mapping

Port	Address	Display	Description	Set	Clear
99	1	1	Discrete Alarms 1-16	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–Power Feed A**	8385-8388	9385-9388
99	1	8	Analog Channel 6–Power Feed B**	8449-8452	9449-9452
99	1	9	Analog Channel 7–Internal Temp Sensor**	8513-8516	9513-9516
99	1	10	Analog Channel 8–External Temp/Hum Sensor**	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	13	NetGuardian Expansion 1 Relays 1-8	6065-6072	7065-7072
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

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
17	Timed Tick	8657	9657
19	Network Time Server	8659	9659
21	Duplicate IP Address	8661	9661
22	External Sensor Down	8662	9662
33	Unit Reset	8673	9673
36	Lost Provisioning	8676	9676
37	DCP Poller Inactive	8677	9677
38	T1 WAN Inactive	8678	9678
39	LAN Inactive	8679	9679
43	SNMP Trap not Sent	8683	9683
44	Pager Que Overflow	8684	9684
45	Notification failed	8685	9685
46	Craft RcvQ full	8686	9686
48	Data 1 RcvQ full	8688	9688
49	Data 2 RcvQ full*	8689	9689
50	Data 3 RcvQ full*	8690	9690
51	Data 4 RcvQ full*	8691	9691
52	Data 5 RcvQ full*	8692	9692
56	NetGuardian DX 1 fail	8696	9696
57	NetGuardian DX 2 fail	8697	9697
58	NetGuardian DX 3 fail	8698	9698
63	Craft Timeout	8703	9703
64	Event Que Full	8704	9704

Table A.2 *Display 11 System Alarms point descriptions*

* Data Ports 2-5 are included on optional expantion card.

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.
	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.
	22	External Sensor down	External Sensor is not active	Check to see if external sensor cable is properly connected.
	33	Unit Reset	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 NGEdit4 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 page.

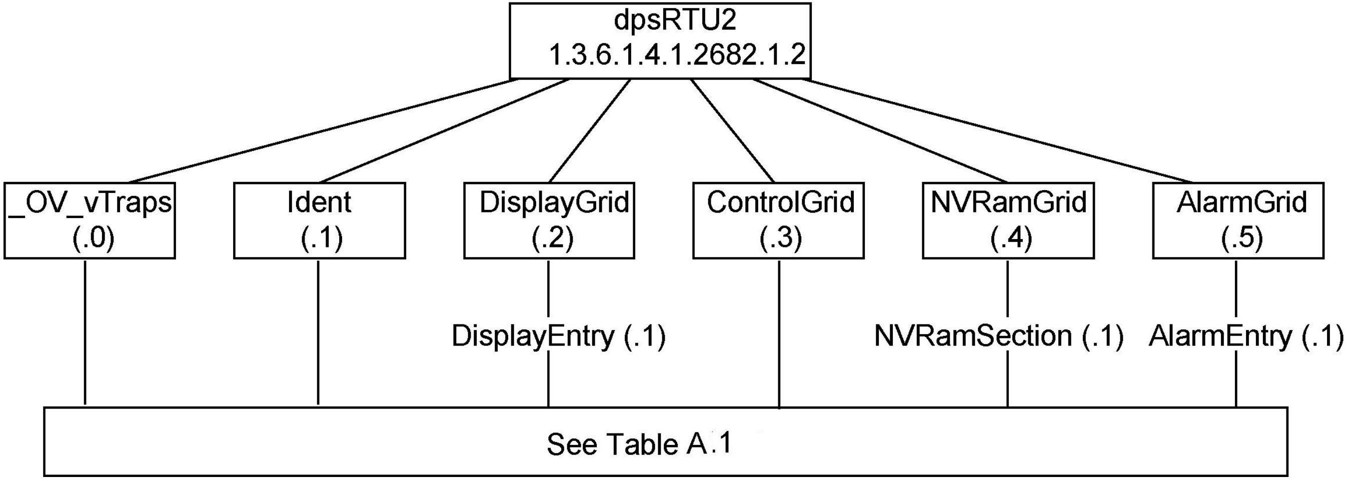
Display	Points	Alarm Point	Description	Solution
11	37	DCP Poller Inactive	The unit has not seen a poll from the Master for the time specified by the DCP Timer setting.	If DCP responder is not being used, then set the DCP Unit ID to 0. Otherwise, try increasing the DCP timer setting under Timers, or check how long it takes to cycle through the current polling chain on the Master system.
	38	T1 WAN not active	T1 WAN port is down.	Check LAN/WAN cable. Ping to and from the unit.
	39	Ethernet not active	Ethernet LAN ports are down.	
	40	LNK Alarm	Hardware failure between integrated Ethernet Hub and the unit.	
	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 Que Overflow	Over 250 events are currently qued in the pager que 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.
	48	Data 1 RcvQ full	Data port 1 receiver filled with 1 K of data.	Check proxy connection. The serial port data may not be getting collected as expected.
	49	*Data 2 RcvQ full	Data port 1 receiver filled with 1 K of data.	Check proxy connection. The serial port data may not be getting collected as expected.
	50	*Data 3 RcvQ full	Data port 1 receiver filled with 1 K of data.	Check proxy connection. The serial port data may not be getting collected as expected.
	51	*Data 4 RcvQ full	Data port 1 receiver filled with 1 K of data.	Check proxy connection. The serial port data may not be getting collected as expected.
	52	*Data 5 RcvQ full	Data port 1 receiver filled with 1 K of data.	Check proxy connection. The serial port data may not be getting collected as expected.
	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 of DB9M to DB9M will 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)	
	63	Craft Timeout	The Craft Timeout Timer has not been reset to 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)*

* Data Ports 2-5 are included on optional expantion card.

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 1.3.6.1.4.1.2682.1.2. Each level beyond dpsRTU adds another object identifying number. For example, the object identifier of the Display portion of the Control Grid is 1.3.6.1.4.1.2682.1.2.3.3 because the object identifier of dpsRTU is 1.3.6.1.4.1.2682.1.2 + the Control Grid (.3) + the Display (.3).



Tbl. B1 (O.)_OV_Traps points
_OV_vTraps (1.3.6.1.4.1.2682.1.2.0)
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 (1.3.6.1.4.1.2682.1.2.1)
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 (1.3.6.1.4.1.2682.1.2.2.1)
Port (.1)
Address (.2)
Display (.3)
DispDesc (.4)*
PntMap (.5)*

Tbl. B3 (.3) ControlGrid points
ControlGrid (1.3.6.1.4.1.2682.1.2.3)
Port (.1)
Address (.2)
Display (.3)
Point (.4)
Action (.5)

Tbl. B5 (.5) AlarmEntry points
AlarmEntry (1.3.6.4.1.2682.1.2.5.1)
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	Base Discrete Alarms	99	1	1	1-16
	Undefined**	99	1	1	17-64
Disp 2	Ping Target Alarms	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 Power Feed A	99	1	7	1-4
	Undefined**	99	1	7	5-64
Disp 8	Analog 6 Power Feed B	99	1	8	1-4
	Undefined**	99	1	8	5-64
Disp 9	Analog 7 Internal Temp Sensor	99	1	9	1-4
	Undefined**	99	1	9	5-64
Disp 10	Analog 8 External Temp and Humidity Sensor	99	1	10	1-4
	Undefined**	99	1	10	5-64

Table B.6. *Alarm Point Descriptions (continued on next page)*

Disp 11	No Data*	99	1	11	1-8
	Undefined**	99	1	11	9-16
	Timed Tick	99	1	11	17
	Undefined**	99	1	11	18
	Network Time Server	99	1	11	19
	Accumulation Event	99	1	11	20
	Duplicate IP Address	99	1	11	21
	External Sensor down	99	1	11	22
	Undefined**	99	1	11	23-32
	Unit Reset	99	1	11	33
	Undefined**	99	1	11	34-35
	Lost Provisioning	99	1	11	36
	DCP poller inactive	99	1	11	37
	T1 WAN inactive	99	1	11	38
	LAN inactive	99	1	11	39
	LAN Link down	99	1	11	40
	Undefined**	99	1	11	41-42
	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
	Undefined**	99	1	11	47
	Data 1 RCVQ	99	1	11	48
	Data 2 RCVQ^	99	1	11	49
	Data 3 RCVQ^	99	1	11	50
	Data 4 RCVQ^	99	1	11	51
	Data 5 RCVQ^	99	1	11	52
	Undefined**	99	1	11	53-55
	NGDdx 1-3 fail	99	1	11	56-58
	Undefined**	99	1	11	59-62
	CRFT timeout	99	1	11	63
	Event Que full	99	1	11	64

Table B.6 (continued). *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.
^ Data Ports 2-5 are included on optional expantion card.

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
1.3.6.1.4.1.2682.1.2	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 216T v1.0B	Value
1.3.6.1.2.1.1.6.0	Object
1-800-622-3314	Value
1.3.6.1.4.1.2682.1.2.4.1.0	Object
01-02-1995 05:08:27.760	Value
1.3.6.1.4.1.2682.1.2.5.1.1.99.1.1.1	Object
99	Value
1.3.6.1.4.1.2682.1.2.5.1.2.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.2.5.1.3.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.2.5.1.4.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.2.5.1.5.99.1.1.1	Object
Rectifier Failure	Value
1.3.6.1.4.1.2682.1.2.5.1.6.99.1.1.1	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. Edit216T can read the configuration of your NetGuardian and save the configuration to your PC's hard disk or a floppy disk. With Edit216T 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 the Data port, 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 the 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 you're 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 port, 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. How do I get my NetGuardian on the WAN?

A. Configure T1 WAN settings in the Web browser's T1 WAN menu. You need to know the NetGuardian's IP address or domain name if it has been registered with your internal DNS and the subnet mask (see LAN example above). After T1 WAN settings are provisioned, make sure you're connected to the NetGuardian's T1 WAN port.

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 216T.

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 are 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 Edit216T 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. 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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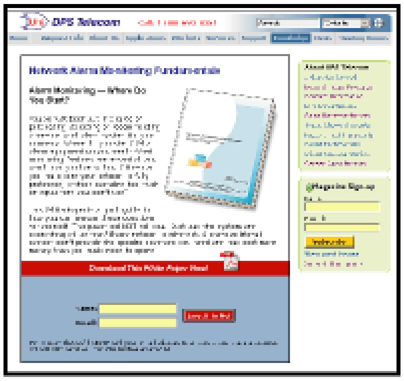

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