# **MAX TNT Reference Guide**

Ascend Communications, Inc. Part Number: 7820-0482-003 For Software Version 1.3A September 26, 1997

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- Software and hardware options
- Software version
- Service Profile Identifiers (SPIDs) associated with your product
- Your local telephone company's switch type and operating mode, such as AT&T 5ESS Custom or Northern Telecom National ISDN-1
- Whether you are routing or bridging with your Ascend product
- Type of computer you are using
- Description of the problem

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Middle East and Africa	(+33) 492 96 5679
Email	support@ascend.com
Email (outside US)	EMEAsupport@ascend.com
Facsimile (FAX)	510-814-2312
Customer Support BBS by modem	510-814-2302

You can also contact the Ascend main office by dialing 510-769-6001, or you can write to Ascend at the following address:

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# Introduction

This introduction covers the following topics:

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# What is in this guide

This guide provides an alphabetical reference to all the MAX TNT profiles, parameters, and commands, and details the settings and options you can specify. For step-by-step instructions on setting up the MAX TNT hardware, see the *MAX TNT Hardware Installation Guide*. For step-by-step instructions on configuring your network connections, see the *MAX TNT Network Configuration Guide*.

# What you should know

This guide is intended for the person who will configure and maintain the MAX TNT. To use it effectively, you must have a basic understanding MAX TNT security and configuration, and be familiar with authentication servers and networking concepts.

# **Related publications**

Additional information is available in the other guides in the MAX TNT documentation set. If you need more background information than these guides provide, many external references are readily available on the Web or in technical bookstores. You'll find a partial list of such references below.

#### MAX TNT documentation set

The MAX TNT documentation set consists of the following manuals:

- *The Ascend Command-Line Interface*. Shows you how to use the MAX TNT command-line interface effectively.
- *MAX TNT Hardware Installation Guide*. Describes how to install the MAX TNT hardware and use the command-line interface to configure its slot cards for a variety of supported uses. Describes how calls are routed through the system. Includes the MAX TNT technical specifications.
- *MAX TNT Network Configuration Guide*. Describes how to configure the MAX TNT for network connectivity.
- *MAX TNT RADIUS Guide*. Describes how to configure RADIUS for authentication, network connectivity, and accounting.
- *MAX TNT Reference Guide* (this manual). An alphabetic reference to all MAX TNT profiles, parameters, and commands.

#### **Related RFCs**

RFCs are available on the Web at http://ds.internic.net.

#### Information about PPP connections

For information about PPP connections and authentication, you might want to download one or more of the following:

- RFC 1662: PPP in HDLC-like Framing
- RFC 1661: *The Point-to-Point Protocol (PPP)*
- RFC 1994: PPP Challenge Handshake Authentication Protocol (CHAP)
- RFC 1934: Ascend's Multilink Protocol Plus (MP+)
- RFC 1989: PPP Link Quality Monitoring
- RFC 1990: The PPP Multilink Protocol (MP)
- RFC 2125: The PPP Bandwidth Allocation Control Protocol (BACP)
- RFC 2153: PPP Vendor Extensions
- RFC 1962: The PPP Compression Control Protocol (CCP)
- RFC 1974: PPP Stac LZS Compression Protocol
- RFC 1877: PPP Internet Protocol Control Protocol Extensions for Name Server Addresses
- RFC 1638: PPP Bridging Control Protocol (BCP)
- RFC 1618: PPP over ISDN
- RFC 1332: The PPP Internet Protocol Control Protocol (IPCP)

#### Information about IP routers

RFCs that describe the operation of IP routers include:

- RFC 1812: Requirements for IP Version 4 Routers
- RFC 1519: Classless Inter-Domain Routing (CIDR): An Address Assignment and Aggregation Strategy
- RFC 2002: IP Mobility Support
- RFC 2030: Simple Network Time Protocol (SNTP) Version 4 for IPv4, IPv6 and OSI
- RFC 1256: ICMP Router Discovery Messages
- RFC 1393: Traceroute Using an IP Option
- RFC 1433: Directed ARP
- RFC 1582: Extensions to RIP to Support Demand Circuits
- RFC 1787: Routing in a Multi-provider Internet

#### Information about OSPF routing

For information about OSPF routing, see:

- RFC 1850: OSPF Version 2 Management Information Base
- RFC 1587: The OSPF NSSA Option
- RFC 1245: OSPF protocol analysis
- RFC 1246: Experience with the OSPF protocol
- RFC 1583: OSPF Version 2
- RFC 1586: Guidelines for Running OSPF Over Frame Relay Networks

#### Information about multicast

For information about multicast, see:

- RFC 1458: Requirements for Multicast Protocols
- RFC 1584: Multicast Extensions to OSPF
- RFC 1949: Scalable Multicast Key Distribution

#### Information about firewalls and packet filtering

RFCs that describe firewalls and packet filters include:

- RFC 1858: Security Considerations for IP Fragment Filtering
- RFC 1579: Firewall-Friendly FTP

#### Information about general network security

RFCs pertinent to network security include:

- RFC 1704: On Internet Authentication
- RFC 1636: Report of IAB Workshop on Security in the Internet Architecture
- RFC 1281: Guidelines for the Secure Operation of the Internet
- RFC 1244: Site Security Handbook

#### Information about external authentication

For information about RADIUS and TACACS authentication, see:

- RFC 2138: Remote Authentication Dial In User Service (RADIUS)
- RFC 1492: An Access Control Protocol, Sometimes Called TACACS

## **ITU-T recommendations**

ITU-T recommendations (formerly CCITT) are available commercially. You can order them at http://www.itu.ch/publications/.

### **Related books**

The following books are available in technical bookstores.

- *Routing in the Internet*, by Christian Huitema. Prentice Hall PTR, 1995. Recommended for information about IP, OSPF, CIDR, IP multicast, and mobile IP.
- *SNMP, SNMPV2 and RMON: Practical Network Management*, by William Stallings. Addison-Wesley, 1996. Recommended for network management information.
- *Enterprise Networking: Fractional T1 to Sonet Frame Relay to Bisdn*, by Daniel Minoli. Artech House, 1993. Recommended as a WAN reference.
- TCP/IP Illustrated, volumes 1&2, by W. Richard Stevens. Addison-Wesley, 1994.

# **Documentation conventions**

This section shows the documentation conventions used in this guide.

 Table 1-1.
 Documentation conventions

Convention	Meaning
Monospace text	Represents text that appears on your computer's screen, or that could appear on your computer's screen.
Boldface mono- space text	Represents characters that you enter exactly as shown (unless the characters are also in <i>italics</i> —see <i>Italics</i> , below). If you could enter the characters, but are not specifically instructed to, they do not appear in boldface.
Italics	Represent variable information. Do not enter the words themselves in the command. Enter the information they represent. In ordinary text, italics are used for titles of publications, for some terms that would otherwise be in quotation marks, and to show emphasis.
[]	Square brackets indicate an optional argument you might add to a command. To include such an argument, type only the information inside the brackets. Do not type the brackets unless they appear in bold type.
	Separates command choices that are mutually exclusive.
>	Points to the next level in the path to a parameter. The parameter that follows the angle bracket is one of the options that appears when you select the parameter that precedes the angle bracket.

Convention	Meaning
Key1-Key2	Represents a combination keystroke. To enter a combination keystroke, press the first key and hold it down while you press one or more other keys. Release all the keys at the same time. (For example, Ctrl-H means hold down the Control key and press the H key.)
Press Enter	Means press the Enter, or Return, key or its equivalent on your computer.
Note:	Introduces important additional information.

Table 1-1.	Documentation	conventions	(continued)
------------	---------------	-------------	-------------

# 2

This chapter provides complete information on the MAX TNT commands. The information in this chapter is designed for quick reference, and does not include tutorials. All commands are listed alphabetically. For an overall alphabetic listing, see the general table of contents.

You can view usage summaries for each command online by typing:

admin> ? command-name

**MAX TNT Command Reference** 

To see an alphabetic list of commands online, type:

admin> ?

**Note:** If the list of commands displayed as output does not include all of the commands described in this chapter, you may need to authenticate a User profile that has more extensive permissions. See "Auth" on page 2-4 for details.

?

**Description:** Displays a list of all available commands or help text about a specific command.

Permission level: User

```
Usage: ? [ -a ] [ command-name ]
```

Syntax element:	Description:
-a	List all commands. (By default, only commands authorized by the current User profile are displayed.)
command-name	Display information about the specified command.

Example: To display a list of commands authorized for your current login:

admin> ?	
?	(user)
auth	( user )
callroute	( diagnostic )
clear	( user )
clock-source	( diagnostic )
clr-history	( system )
connection	( system )
date	( update )
debug	( diagnostic )
delete	( update )
device	( diagnostic )
dir	( system )
dircode	( system )
ether-display	( diagnostic )
fatal-history	( system )
format	( code )
fsck	( code )
get	( system )
hdlc	( system )
help	(user)
if-admin	( diagnostic )
igmp	( system )
[More? <ret>=next entry,</ret>	<sp>=next page, &lt;^C&gt;=abort]</sp>

To display help text about a command:

```
admin> ? dir
dir list all profile types
dir profile-type list all profiles of the specified type
dir profile-type profile-index list the specified profile instance
```

**Dependencies:** The current security level is set by the current User profile and determines which commands are displayed in response to this command. If the current User profile does not have sufficient privileges to execute a command, it is not displayed. Commands with the User security level are always displayed. See Auth for details.

See Also: Help, Auth

#### Arptable

**Description:** Displays or modifies the MAX TNT ARP (Address Resolution Protocol) table. The ARP table associates known IP addresses with physical network addresses. For remote IP addresses, the MAX TNT can use the ARP table to respond with its own MAC address to ARP requests while bringing up the required connection. See the description of the Proxy-Mode parameter in Chapter 3, "MAX TNT Profile and Parameter Reference."

Permission level: System

Usage: arptable

**Example:** To display the ARP cache:

admin	> arr	ptable					
entry	typ	ip address	ether addr	if	rtr	pkt	insert
0	DYN	10.9.8.19	00A024A61534	0	0	0	4225
1	DYN	10.9.8.13	08002078FDC0	0	0	0	4319
2	DYN	10.9.8.67	0800207955CF	0	0	0	3984
3	DYN	10.9.8.10	00C07B4F3068	0	0	0	4333
4	DYN	10.9.8.18	080020721950	0	0	0	4000
5	DYN	10.9.8.26	00A024A8122C	0	0	0	4136
6	DYN	10.9.8.12	0080C7152582	0	0	0	4062
7	DYN	10.9.8.27	0080C7C3A07E	0	0	0	4309
8	DYN	10.9.8.9	08002075806B	0	0	0	4214
9	DYN	10.9.8.23	08002075D55D	0	0	0	4001
10	DYN	10.9.8.15	0020AFDACCE1	0	0	0	4232

The ARP table displays this information:

Column Name:	Description
entry	A unique identifier for each ARP table entry.
typ	How the address was learned, dynamically (DYN) or by specification of a static route (STAT).
ip address	The address contained in ARP requests.
ether addr	The MAC address of the host with that IP address.
if	The interface on which the MAX TNT received the ARP request.
rtr	The next-hop router on the specified interface.

See Also: Nslookup

#### Auth

Description: Authenticates a new User profile. Use this command to increase or decrease the permissions of the current login. For details on permissions levels in these profiles, see the User profile description in Chapter 3, "MAX TNT Profile and Parameter Reference."

Permission level: User

Usage: auth	[	user-name	]
-------------	---	-----------	---

#### **Description:** Syntax element:

```
user-name
```

Authenticate the specified User profile.

Example: To login as Joe:

admin> auth joe Password:

If you supply the proper password for that User profile, the MAX TNT enables the privileges in that profile and then displays the system prompt again. Note that the User profile may specify its own system prompt, which is a useful way to flag certain permissions levels; for example:

```
admin> auth admin
Password:
```

If you supply the wrong password at the prompt, you'll see this message:

```
Login incorrect
```

User:

Enter the user name again and the Password prompt is displayed.

See Also: Whoami

#### **BRIchannels**

Description: Displays the status of all the BRI channels on the MAX TNT.

Permission level: System

Usage: brichannels -[a|d|c|i]

Syntax element:	Description:
-a	Display all available BRI channels.
-d	Display disabled BRI channels.
-c	Display all possible BRI channels.
-i	Display in use BRI channels.

**Example:** To display all BRI channels:

admin> brichannel -a

The BRIchannels command display this information:

Column Name	Description			
dvOp	The operational state of the BRI channel. Values can be:			
	• Down			
	• Up			
	• None			
dvUpSt	The up status of the BRI channel. Values can be:			
	• Idle			
	• Reserved			
	• Assigned			
dvRq	The required state of the BRI channels. Values can be:			
	• Down			
	• Up			
SAdm	The desired state of the device. Values can be:			
	• Down			
	• Up			

#### Callroute

**Description:** Displays the call-routing database (the total set of all Call-Route profiles). For details on how call routing works and on how to create Call-Route profiles, see the *MAX TNT Hardware Installation Guide*.

Permission level: Diagnostic

Usage: callroute [	-option [ params ]]
Syntax element:	Description:
-ah	List available host-side call routing entries.
-an	List available network-side call routing entries.
-d	List call routing tables by device.
-t	Toggle module debug level
-?	Display a usage summary.

**Example:** This example shows host-side call routing entries directed to a modem card. All entries are default except for one Call-Route profile that specifies an inbound phone number.

#### admin> callroute -ah

```
device
           # source
                                         tg sa phone
                       type
           0 0:00:00/0 any-call-type
1:12:02/0
                                         0 0 4812
1:12:01/0 0 0:00:00/0 voice-call-type
                                         0 0
1:12:03/0 0 0:00:00/0 voice-call-type
                                          0
                                            0
. . .
           0 0:00:00/0 voice-call-type
1:12:47/0
                                          0 0
1:12:48/0
           0 0:00:00/0 voice-call-type
                                          0
                                            0
```

A zero or null field always means "any." The call-routing database displays this information:

- The Device field shows the interface address of a host port, such as a modem.
- The # field shows an entry number in the call-routing database.
- The Source field shows the interface address of a network port, such as a channel on a T1 or E1 line.
- The Type field shows a call-route type, which may be any-call-type, voice-call-type (voice bearer capability), digital-call-type (data bearer service), or trunk-call-type.
- The TG field shows a trunk-group number.
- The SA field shows a subaddress number.
- The Phone field shows an add-on number.

See Also: Modem, HDLC, Show, T1channels

#### Clear

**Description:** Clears the terminal session screen and places the system prompt at the top row of the vt100 window.

Permission level: User

Usage: clear [ -r ]

Syntax element:	Description:
-----------------	--------------

-r

Reset the terminal session's vt100 attributes.

Example: clear

				vt100 session
TÌ	VT>			
	2:25:05	24x94	205k	9600 N81

#### **Clock-Source**

**Description:** Displays the current clock-source statistics for the system. If a line is specified as the clock-source, it can be used as the source of timing information for synchronous connections, so both the sending device and the receiving device can determine where one block of data ends and the next begins. If multiple lines specify that they are eligible to be the clock-source, you can assign clock-source priority among multiple lines. For details, see the *MAX TNT Network Configuration Guide*.

Permission level: Diagnostic

Usage: clock-source

**Example:** The Clock-Source command on the shelf-controller shows the master clock's slot card line number; for example:

```
admin> clock-source
```

```
Master: slot-1 line 1
Source List:
  Source: controller Unavailable:
  Source: slot-1 Available:
  Source:
             slot-1 priority: 2
             slot-2 Unavailable:
  Source:
  Source: slot-3 Unavailable:
  Source:
            slot-4 Unavailable:
             slot-5 Unavailable:
  Source:
  Source: slot-6 Unavailable:
  Source: slot-7 Unavailable:
  Source: slot-8 Unavailable:
  Source:
             slot-9 Unavailable:
  Source: slot-10 Unavailable:
  Source: slot-11 Unavailable:
            slot-12 Unavailable:
  Source:
  Source:
           slot-13 Unavailable:
  Source: slot-14 Unavailable:
  Source: slot-15 Unavailable:
  Source:
            slot-16 Unavailable:
```

Notice that the source list is presented in names such as slot-1. On the slot cards, the Clock-Source command uses one-base indexes for the card's lines. For example:

```
admin> open 1 1
```

```
t1-1/1> clock-source
Master: 1
Source List:
Source: 1 priority: 2
Source: 2 priority: 2
Source: 3 priority: 2
Source: 4 priority: 2
Source: 5 priority: 2
Source: 6 priority: 2
Source: 7 priority: 2
Source: 8 priority: 2
```

See Also: Line, Open, T1channels

#### **CIr-History**

**Description:** Clears the fatal error history log.

Permission level: System

Usage: clr-history

**Example:** First, view the fatal-error log by typing:

admin> fatal-history

OPERATOR RESET: Index: 99 Revision: 1.0F Controller (tntsr) Date: 09/20/1996. Time: 16:56:01 Reset from unknown, user profile super.

OPERATOR RESET: Index: 99 Revision: 1.0F Controller (tntsr) Date: 09/24/1996. Time: 11:56:10 Reset from unknown, user profile super.

Then, clear the log:

```
admin> clr-history
```

The log is now empty:

admin> fatal-history

admin>

See Also: Fatal-History

#### Connection

**Description:** Specifies that the upper-left portion of the status window should display connection status information. If the status window is not already displayed, this command opens it with the connection status information displayed.

Permission level: System

Usage: connection

Example: To display connection information in the upper-left portion of the status window:

admin> connection

```
2 Connections
                         Status
                         Serial number: 6201732
                                                    Version: 1.0F
001 tomw PPP 1/7/14 19200
002 timl MP 1/7/3 56000
                          Rx Pkt:
                                     11185897
                          Tx Pkt:
                                         42460
                             Col:
                                           129
                         12/26/1996 12:20:15 Up:
                                                       3 days, 21:47:32
                         M: 29 L: info Src: shelf-1/controller
                         48 out of 48 modems passed POST
                                           Issued: 16:48:02, 09/27/1996
```

[ Next/Last Conn: <dn/up arw>, Next?Last Page: <pg dn/up>, Exit: <esc>

For each active connection, a line is displayed that shows the user or station name, type of connection, T1 shelf/line/channel on which the call was placed or received, and bandwidth or baud rate. You can press the down-arrow key to scroll through the list of active connections.

To display a prompt below the status window, press the Escape key. To close the status window:

admin> **status** 

See Also: Line, List, Log, Status, View

#### Date

**Description:** Displays or sets the MAX TNT system date and time. The date and time are stored in the Timedate profile.

#### Permission level: Update

Usage: date [ yymmddhhmm ]

Syntax element:	Description:
уу	A two-character representation of the current year.
mm	A two-character representation of the current month.
dd	A two-character representation of the current day.
hh	A two-character representation of the hour.
mm	A two-character representation of the minute.

**Example:** To set the MAX TNT system date and time to noon, December 31, 1996: admin> date 9612311200

#### Delete

**Description:** Permanently deletes a profile from local storage. Any flash space that was used by the profile is made available to the system.

Permission level: Update

Usage: delete	[	-f	]	profile-type	[	profile-index	]
---------------	---	----	---	--------------	---	---------------	---

Syntax element:	Description:
-f	Delete without prompting for confirmation.
profile-type	A type of profile, as listed by the Dir command.
profile-index	The index of the specified profile type. Not all profile types require an index.

**Example:** To delete a Connection profile for "tlynch":

```
admin> delete conn tlynch
Delete profile CONNECTION /tlynch? [y/n] y
CONNECTION /tlynch deleted
admin>
```

See Also: Get, New, Read
# Device

**Description:** Initiates a state change in a specified device. The device is specified by its interface address. This command is typically used to administratively up or down a device.

**Permission level:** Diagnostic

Usage: device -o	ption [ params ]
Syntax element:	Description:
-d	Bring the specified device down.
-t	Toggle debug output level.
-u	Bring the specified device up.
-?	Display a usage summary.
params	The physical address of the device, specified as shelf, slot, and item number.

Example: To administratively down modem #24 in slot #3 on shelf #1: admin> device -d {{1 3 24} 0}

See Also: Show, Slot

# Dir

**Description:** Lists profiles. With no arguments, it lists all profile types supported by the MAX TNT. It can also be used to list all profiles of a certain type, or to list file-system information about a specific profile.

### Permission level: System

Usage: dir [ profile-type [ profile-index ] ]

Syntax element: Des	cription:
---------------------	-----------

profile-type	List all the profiles of the specified type.
profile-index	Display information about the specified profile.

**Example:** To list all profile types:

admin> <b>dir</b>	
ADMIN-STATE	SNMP Administrative State
ADSL-CAP	Cap adsl line parameters
ADSL-CAP-STAT	Cap Adsl line status
ADSL-CAP-STATISTICS	Cap Adsl line statistics
ADSL-CAP-STATUS	Cap adsl Interface Status
ANSWER-DEFAULTS	Answer profile
BASE	System version and enabled features
BRI-STAT	BRI line status
BRILT	BRI line parameters
CALL-INFO	Active call information
CALL-ROUTE	Call routing attributes
CONNECTION	Connection (WAN) profiles
DEVICE-STATE	Device Operational State
ERROR	Fatal Error log
ETHERNET	Ethernet interfaces
EXTERNAL-AUTH	External authentication info
FILTER	Filter Profile
FIREWALL	Firewall Profile
IP-GLOBAL	Global TCP/IP parameters
IP-INTERFACE	IP interfaces
IP-ROUTE	Static IP routes
IPX-GLOBAL	Global IPX parameters
IPX-INTERFACE	IPX Interfaces
IPX-ROUTE	Static IPX routes
LAN-MODEM	LAN Modem Disable State
LOG	System event logging configuration
SDSL	SDSL line parameters
SDSL-STAT	Sdsl line status
SDSL-STATISTICS	Sdsl Interface Statistics
SDSL-STATUS	Sdsl Interface Status
SERIAL	Serial interfaces
SLOT-INFO	Slot Info profile
SLOT-STATE	Slot Operational State
SLOT-TYPE	Slot Type profile
SNMP	SNMP configuration
SWAN	Swan line parameters

SWAN-STAT	Swan line status
SYSTEM	System-wide basic parameters
Т1	T1 line parameters
T1-STAT	T1 line status
Т3	DS3 line parameters
T3-STAT	DS3 line status
TERMINAL-SERVER	Terminal server parameters
TIMEDATE	Current system date and time
TRAP	SNMP trap destinations
USER	Administrative user accounts

To list all Connection profiles:

```
admin> dir conn
```

169 08/31/1996 22:21:07 dallas 195 09/12/1996 10:14:08 chicago 189 11/14/1996 09:34:44 nyc1 177 11/14/1996 11:38:09 nyc2 187 10/22/1996 15:34:53 la 201 10/14/1996 14:29:32 sacto

This form of the command is useful for displaying valid profile indexes. The index is in the rightmost field. The listing includes this information:

- The first field shows the number of bytes the profile uses.
- The second and third field shows the date and time the profile was last modified.
- The fourth field shows the profile index. If the profile does not have an index, the fourth field contains a period. If only one profile exists, it displays that profile's name.

To list information about a specific profile, include its index on the command line:

admin> **dir conn dallas** 169 08/31/1996 22:21:07 dallas

See Also: List, Get

### Dircode

**Description:** Displays the contents of the PCMCIA flash card code directories. The flash cards contain code for the slot cards, shelf-controller run-time code, and profiles. The system configuration is stored in the onboard NVRAM.

Permission level: System

#### Usage: dircode

**Example:** To view the contents of a flash card, type:

#### admin> dircode

Flash card code directory:					
Card 1, directory size 16					
slot-card-8t1 reg	good	146634 Dec	26	10:15	v1.2
slot-card-8e1 reg	good	259484 Jan	16	21:58	v1.2
slot-card-48modem reg	good	386566 Dec	26	10:15	v1.2
slot-card-192hdlc reg	good	457360 Jan	5	12:21	v1.2

The information displayed by this command includes the card number (1 or 2) and the size of the code directory. For each expansion module installed in the system, it also shows the following information:

- The type of card the load is for, such as modem, T1, Frameline, or HDLC
- The subtype of the load: regular, debug, or diagnostic
- The status of the load: good (present and complete), write (being copied), or bad (incomplete or corrupt)
- The size of the code related to the card.
- The date the load was copied to the flash card.
- The code version

See Also: Format, Fsck, Load

# DS3link

Description: Enables you to carry out a diagnostic session with the DS3 card.

**Permission level:** Diagnostic

**Usage: ds3link** [ - a|c|d|1|s|t|? ]

Syntax element:	Description:
-a	Display current DS3 line alarms.
-c	Display and clear line error statistics.
-d 1 - 7	Display current DS2 line state.
-l on   off	Externally loopback the DS3 payload.
-s	Display line error statistics without clearing.
-t	Toggle debug output.
-?	Display summary.

Example: To manage a DS3 card in slot 15 on shelf 1:

```
admin> open 1 15
```

```
t3-1/15> ds3link
get information about the DS3 interface
usage: ds3link [ - a|c|d|1|s|t|? ]
-a display current DS3 line alarms
-c display and clear line error statistics
-d < 1 - 7 > display current DS2 line state
-1 < on | off > externally loopback the DS3 payload
-s display line error statistics without clearing
-t toggle debug output
-? display this summary
```

To display alarms on the line:

t3-1/15> ds3link -a	
Loss of Signal:	false
Out of Frame:	false
Alarm Indication Signal:	false
Idle Signal:	false
Yellow Signal:	false
In Red Alarm:	false
C-bit parity framing:	false

Note that if C-bit parity framing shows "true," it does not indicate an alarm state. It indicates that the far end is using C-bit parity.

To display and clear line error statistics:

```
t3-1/15> ds3link -c
  Line Code Violations:
                          2136611
  Framing Errors:
                          67279
                        2098353
  Excessive Zeros:
  P-bit Parity Errors:
                         217318
  C-bit Parity Errors:
                          0
  Far End Block Errors:
                          0
  DS2 1 Framing Errors: 8415
  DS2 2 Framing Errors: 8415
  DS2 3 Framing Errors:
                         8415
  DS2 4 Framing Errors:
                       8415
  DS2 5 Framing Errors:
                         8415
  DS2 6 Framing Errors:
                          8415
  DS2 7 Framing Errors:
                          8415
  Statistics cleared.
```

To display the line state of the third DS2:

t3-1/15> ds3link -d 3	
State of DS2 3:	
Out of Frame:	false
Alarm Indication Signal:	false
Yellow Signal:	false
In Red Alarm:	false
Reserved Bit:	false

To perform a loopback test:

t3-1/15> ds3link -1 on DS3 remote loopback activated t3-1/15> ds3link -1 off DS3 remote loopback deactivated

# E1-Stats

Description: Reports DS1-level line errors on E1 cards.

Permission level: Diagnostic

Usage: e1-stats [ -c ] line

Syntax element:	Description:
-c	Display statistics for the line, or reset statistics to 0 (zero).

Line on the card.

line

**Example:** First, open a session with the installed card by using the Open command. For example, to open a session with a card in shelf 1, slot 13:

```
admin> open 1 13
```

To view and reset the statistics to zero on line 2:

el-1/13> <b>el-stats -c 2</b>	
DS1 Line 2:	
CRC Errors:	0
Frame Slips:	9872
Framing Bit Errors:	0
Far End Block Errors:	0
Line Code Violations:	0
Statistics cleared.	

- CRC errors indicate data corruption in the signal.
- Frame slips occur when the MAX TNT receives E1 data at a greater or less frequency than the internal line clock. In the process of realigning itself to the transmitter, the MAX TNT can skip or repeat a frame.
- Framing bit errors relate to E1 framing, which requires that certain bit positions (known as framing bits) have a fixed value in the signal. The framing bits enable the MAX TNT to determine where frames begin and end. A framing bit error indicates that the MAX TNT detected a framing bit that was incorrect.
- Out of Frame Events indicates that the MAX TNT no longer detects a framing pattern in the receiving signal, or detects a pattern at a different relative offset than expected.
- Far end block errors show how frequently the far end reported errors in E1 frames transmitted by the MAX TNT.
- Line Code Violations indicate that the MAX TNT detected either a Bipolar Violation or Excessive Zeros, indicating that one of the low-level E1 rules for encoding data was violated in the received signal.
- The Statistics cleared message at the end of the display indicates that the statistics have been reset to 0 (zero), because the command included the -c option.

# **Ether-Display**

**Description:** Displays the contents of Ethernet packets.

**Permission level:** Diagnostic

Usage: ether-display port# n

### Syntax element: Description:

port#	The Ethernet port on which the packets are received or transmitted
n	The number of octets to display in each Ethernet packet.

**Example:** To display Ethernet packet contents for port 0 in 12 octet sizes:

### admin> ether-display 0 12

ETHER XMIT: 12 of 60 octets		
10799E40: 08 00 20 75 80 6b 00 c0	7b 5e ad 3c	u.k {^.<
ETHER RECV: 12 of 60 octets		
1077D980: 00 c0 7b 5e ad 3c 00 80	c7 2f 27 ca	{^. '.</td
ETHER XMIT: 12 of 509 octets		
1079A480: 00 80 c7 2f 27 ca 00 c0	7b 5e ad 3c	/' {^.<
ETHER XMIT: 12 of 330 octets		
1079AACO: 08 00 20 75 80 6b 00 c0	7b 5e ad 3c	u.k {^.<
ETHER RECV: 12 of 60 octets		
1077DFD0: 00 c0 7b 5e ad 3c 08 00	20 75 80 6b	{^.< u.k
ETHER XMIT: 12 of 451 octets		
1079B100: 08 00 20 75 80 6b 00 c0	7b 5e ad 3c	u.k {^.<
ETHER XMIT: 12 of 723 octets		
1079B740: 00 20 af f8 0f 1d 00 c0	7b 5e ad 3c	{^.<
ETHER XMIT: 12 of 84 octets		
1078F580: 08 00 20 75 80 6b 00 c0	7b 5e ad 3c	u.k {^.<
ETHER RECV: 12 of 60 octets		
1077E620: 00 c0 7b 5e ad 3c 00 20	af f8 Of 1d	{^<.
ETHER XMIT: 12 of 238 octets		
1078FBC0: 00 20 af f8 0f 1d 00 c0	7b 5e ad 3c	{^.<
ETHER XMIT: 12 of 373 octets		
10790200: 00 20 af f8 0f 1d 00 c0	7b 5e ad 3c	{^.<
ETHER RECV: 12 of 60 octets		
1077EC70: 00 c0 7b 5e ad 3c 00 20	af f8 Of 1d	{^.<
ETHER XMIT: 12 of 267 octets		
10790840: 00 20 af f8 0f 1d 00 c0	7b 5e ad 3c	{^.<

To stop displaying the Ethernet statistics, type:

admin> ether-display 0 0

# **Fatal-History**

**Description:** Displays the MAX TNT fatal error log. Every time a fatal error occurs on the MAX TNT, it is logged to the fatal error history log. The number of entries in this log is limited by available flash space. This log can be cleared using the Clr-History command.

Permission level: System

Usage: fatal-history

**Example:** To view the fatal-history log, type:

admin> fatal-history
OPERATOR RESET: Index: 99 Revision: 1.0F Controller (tntsr)
 Date: 09/20/1996. Time: 16:56:01
 Reset from unknown, user profile super.
OPERATOR RESET: Index: 99 Revision: 1.0F Controller (tntsr)
 Date: 09/24/1996. Time: 11:56:10
 Reset from unknown, user profile super.

See Also: Clr-History

# Format

**Description:** Formats a PCMCIA flash card, preparing it for use in the MAX TNT. After the card has been formatted, you can load code to it by using the Load command.

### Permission level: Code

Usage: format [ -f	] device
Syntax element:	Description:
-f	Force format without asking for verification.
device	<ul><li>The name of the flash card to be formatted. These are valid names:</li><li>[flash-card-]1</li><li>[flash-card-]2</li></ul>
	Note that device names may be abbreviated as "1" and "2".

**Example:** Insert a PCMCIA card in the second (rightmost) slot on the shelf-controller. To format the flash card:

admin> format flash-card-2
format will erase existing card 2 data; confirm: [y/n] y

See Also: Dircode, Fsck, Load

### Fsck

**Description:** Audits inconsistent conditions for the files (which may include file contents) on a PCMCIA flash card. For each file found, the command displays the type-name, type-number, decimal and hex byte counts, and date written to flash. If errors are detected they are reported. No errors are fixed.

### Permission level: Code

Usage: fsck [ -b -c -v ] device

Syntax element:	Description:
-b	Try to ignore bad magic. Each flash card file system contains two directory blocks: an in-use block and an empty block used when deleting information. Both directory blocks contain a "magic" identifier, which indicates that they are indeed directory blocks. A candidate directory block is one that is missing the "magic" identifier but contains information that can be interpreted as directory-block information. If Fsck finds no valid directory block but does find a candidate directory block, this option causes it to ignore the bad magic and go ahead and use the candidate directory block anyway. This may allow the file system to be used normally until the next reboot, assuming that the Fsck command found no other errors.
-c	Do not check file contents. By default, Fsck checks the file contents for validity, which involves opening and reading every file, checking the file header, verifying the data length and crc, and so forth. This option causes Fsck to check only the file system format.
-v	Display verbose messages, including the number of blocks used, a block list, and (unless the –c option is specified) various information about the files found. See the example below.
device	<ul><li>The name of the flash card to be checked. These are valid names:</li><li>[flash-card-]1</li><li>[flash-card-]2</li></ul>
	Note that device names may be abbreviated as "1" and "2".

**Example:** To run a file-system check of the flash-card-1:

```
admin> fsck 1
ffs check in progress for card 1...
Dir 1 not in use
Dir 2 has magic, size 16, sequence 0x8
Using dir entry: 2, total data blocks: 0x40, directory size: 16
8t1-card:(0x04)
   reg good
               153759 (0x02589f) Jan 13 19:38
192hdlc-card:(0x07)
   reg good
               276920 (0x0439b8) Jan 13 19:38
48 \text{modem-card:} (0 \times 06)
   reg good 398850 (0x061602) Jan 13 19:39
4swan-card:(0x09)
   reg good
                 52639 (0x00cd9f) Jan 13 19:39
flash card 1 fsck: good.
```

The next example shows verbose messages for only one file—the actual output would show these messages for each file found.

```
admin> fsck -v 1
ffs check in progress for card 1...
Dir 1 not in use
Dir 2 has magic, size 16, sequence 0x8
Using dir entry: 2, total data blocks: 0x40, directory size: 16
8t1-card:(0x04)
        good 153759 (0x02589f) Jan 13 19:38
   reg
    Total Blocks: 0x02, First Block list:
   x02 x04
    checking in-use list...
    checking in-use count...
    checking file contents...
    Image Info:
   hdrVers(2) imageVers(1.2) totParts(1) execAddr(0x8000000)
    Part Info:
    totFrags(0x0259) loadAddr(0x80000000) fragSize(0x0100)
    data(Compressed) partLen(0x25867) partCrc(0x60c905e1)
. . .
checking free list...
ensuring all blocks are accounted for...
flash card 1 fsck: good.
```

See Also: Dircode, Format, Load

# FWALLdblog

Description: Displays firewall messages.

Permission level: Diagnostic

#### Usage: FWALLdblog

By default, the Secure Access Manager causes a message to be generated for all packets blocked by a firewall. Firewall messages are sent to the logging mechanism configured in the Log profile, such as Syslog or the console. Messages generated by firewalls are in this format:

date time router-name ASCEND: interface message

The date and time the message was logged is followed by the name of the router from which the message was sent. The name of the interface (for example, ie0) is also shown. The message itself may contain one or more of these fields:

protocol local direction remote length frag log tag

• protocol

For non-IP protocols, this field indicates the 4-digit hexadecimal Ether Type or the network protocol name. For IP protocols, the field indicates either the IP protocol number (up to 3 decimal digits) or one of the following names:

- ip-in-ip
- tcp
- icmp (which may also include the ICMP Code and Type as: [Code]/[Type]/icmp)
- udp
- esp
- ah
- local

For non-IP packets, this field shows the packet's source or destination Ethernet MAC address (depending on whether the packet is inbound or outbound). On a non-bridged WAN connection, the two MAC addresses will be all zeros. For IP packets, the field indicates the packet's source or destination IP address. In the case of TCP or UDP, it will also include the TCP or UDP port number as: ([IP-address];[port]).

direction

This field indicates an arrow indicating the direction in which the packet was traveling (<- for inbound and -> for outbound).

• remote

For non-IP packets, this field specifies the packet's source or destination Ethernet MAC address (depending on whether the packet is inbound or outbound). For IP packets, it specifies the packet's source or destination IP address. In the case of TCP or UDP, it will also include the TCP or UDP port number as: ([IP-address];[port]).

• length

This field specifies the length of the packet in octets (8-bit bytes).

• frag

This field indicates packet fragmentation. It is present if the packet has a non-zero IP offset or the IP More-Fragments bit is set in the IP header.

#### log

•

This field is used to report packet status or header flags. Packet status messages include:

- corrupt—the packet is internally inconsistent
- unreach—the packet was generated by an "unreach" rule in the firewall
- !pass—the packet was blocked by the data firewall

Packet header flags are TCP flag bits, including syn, fin, and rst. The syn flag will only be displayed for the initial packet, which has the SYN flag and not the ACK flag set.

• tag

This field contains user-defined tags in the template used by the Secure Access Manager.

See Also: FWALLversion

# **FWALLversion**

**Description:** Displays the firewall versions supported by the current system software.

**Permission level:** Diagnostic

Usage: FWALLversion

Example: admin> FWALLversion
1 2

The output shows all firewall versions supported in the current code. The version numbers are separated by spaces. The Secure Access Manager uses this information to ensure that firewalls you uploaded are supported.

See Also: FWALLdblog

### Get

**Description:** Displays the contents of a profile or subprofile, but does not make it writable. Only the working profile can be modified. For information on reading a profile into the edit buffer to make it the working profile, see the Read command.

The Get command recognizes the period character (.) as a shorthand for the working profile (the profile in the edit buffer).

### Permission level: System

```
Usage: get profile-type [profile-index] [[sub-profile] [param-name [param-index]]
```

Syntax element:	Description:
profile-type	The type of profile to be displayed, which may require an index as well. The period represents the working profile (the profile in the edit buffer).
profile-index	The profile index (the name or address that distinguishes a profile from others of the same type). To see profile indexes, use the Dir command.
sub-profile	A subprofile within the specified profile.
param-name	A parameter within the specified profile. If the parameter is in a sub- profile, you must specify the subprofile name first.
param-index	Complex parameters have an index; for example, the Inter- face-Address parameter contains both the physical-address and logi- cal-item indexes.

**Example:** To display the contents of a Connection profile:

```
admin> get connection dallas
station*=dallas
active=yes
encapsulation-protocol=mpp
called-number-type=national
dial-number=85283
clid=""
ip-options={ yes yes 1.1.1.1/8 0.0.0.0/0 7 100 255 no no 0 0.0.0.0 rou+
bridging-options={ 0 no }
session-options={ "" "" no 120 no-idle 120 "" }
telco-options={ ans-and-orig no off 1 no no 64k-clear 0 "" "" no no }
ppp-options={ ****** ***** stac 1524 no 600 600 }
mp-options={ 1 1 2 }
mpp-options={ "" quadratic transmit 1 1 15 5 10 70 }
tcp-clear-options={ "" 0 }
answer-options={ }
usrRad-options={ global 0.0.0.0 1646 "" 1 acct-base-10 }
calledNumber=""
```

The example shown above uses the *profile-type* and *profile-index* arguments. To display one of the subprofiles in that profile:

```
admin> get connection dallas ip ospf
active=no
area=0.0.0.0
area-type=normal
hello-interval=30
dead-interval=120
priority=5
authen-type=simple
auth-key=ascend0
cost=10
down-cost=1000
ase-type=type-1
ase-tag=c0:00:000
transit-delay=1
retransmit-interval=5
```

This example uses the *param-name* argument for the IP address of an Ethernet interface:

```
admin> get ip-int {{1 c 1}0} ip-address
ip-address=10.65.12.224/24
```

This example shows how to use a parameter index on the Get command line:

```
admin> get ip-int {{1 c 1}0} interface-address physical-address
```

```
shelf=shelf-1
slot=controller
item-number=1
```

This command displays the contents of the current location in the working profile:

```
admin> get .
active=no
area=0.0.0.0
area-type=normal
hello-interval=30
dead-interval=120
priority=5
authen-type=simple
auth-key=ascend0
cost=10
down-cost=1000
ase-type=type-1
ase-tag=c0:00:00:00
transit-delay=1
retransmit-interval=5
```

Like the List command, you can modify "Get ." with ".." to display a higher context than the current location in the working profile:

```
admin> get . ..
ip-routing-enabled=yes
vj-header-prediction=yes
assign-address=no
remote-address=10.9.5.6/24
if-remote-address=0.0.0.0
local-address=0.0.0.0/0
routing-metric=7
down-metric=7
preference=100
down-preference=255
private-route=no
multicast-allowed=no
address-pool=0
auth-pool-address=0.0.0.0
ip-direct=0.0.0.0
rip=routing-off
ospf-options={ no 0.0.0.0 normal 10 30 120 5 simple ***** 10 1000 t+
multicast-rate-limit=100
client-dns-primary-addr=0.0.0.0
client-dns-secondary-addr=0.0.0.0
client-dns-addr-assign=yes
client-default-gateway=0.0.0/0
```

Or, to display a deeper context than the current location in the working profile:

```
admin> get . ip ospf
active=no
area=0.0.0.0
area-type=normal
hello-interval=30
dead-interval=120
priority=5
authen-type=simple
auth-key=ascend0
cost=10
down-cost=1000
ase-type=type-1
ase-tag=c0:00:00:00
transit-delay=1
retransmit-interval=5
```

See Also: Read, Write, List

# HDLC

**Description:** Displays information about HDLC channels. Each HDLC card provides 192 channels, each of which represents a single-channel PPP connection. A multi-channel connection uses multiple HDLC channels.

Permission level: System

Usage: hdlc [-option]

Syntax element:	Description:
-a	Display all available HDLC channels.
-d	Display disabled HDLC channels.
-f	Display failed/non-existent HDLC channels.
-i	Display in use HDLC channels.
-p	Display all possible HDLC channels

**Example:** To display available HDLC channels:

admir	n> hdlc -a	a		
HDLC	channels	available	for	use:
				(dv0n

									(dv0)	o dvUp	St dvR	q sAc	dm )
HDLC	{	{	1	5	1	}	1	}	(Up	Idle	UP	UP	)
HDLC	{	{	1	5	1	}	2	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	3	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	4	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	5	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	6	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	7	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	8	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	9	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	10	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	11	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	12	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	13	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	14	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	15	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	16	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	17	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	18	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	19	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	20	}	(Up	Idle	e UP	UP	)
HDLC	{	{	1	5	1	}	21	}	(Up	Idle	UP	UP	)
[More	?	<r< td=""><td>et&gt;</td><td>=ne</td><td>xt</td><td>eı</td><td>ntry</td><td>Ζ,</td><td><sp>=next</sp></td><td>page,</td><td>&lt;^C&gt;=ab</td><td>ort]</td><td></td></r<>	et>	=ne	xt	eı	ntry	Ζ,	<sp>=next</sp>	page,	<^C>=ab	ort]	

The information displayed includes the physical address and channel number, and the following status information about each channel:

- The operational state of the channel (dvOp), which may be up or down.
- The up status (dvUpSt), which may be Idle or Active.
- The required state of the device (dvRq), which may be up or down.
- The administrative state of the device (sAdm), which may be up or down.

See Also: Modem, Show, Slot

# Help

**Description:** Displays a list of all available commands or help text about a specific command. The question-mark (?) is a shortcut version of this command.

#### Permission level: User

Usage: help	[	-a	]	[	command-name	]
-------------	---	----	---	---	--------------	---

Syntax element:	Description:
-a	List all commands. (By default, only authorized commands are listed.)
command-name	Display information about the specified command.

**Example:** To display a list of commands:

admin> <b>help</b>	
?	( user )
arp	( system )
auth	( user )
callroute	( diagnostic )
clear	( user )
clock-source	( diagnostic )
clr-history	( system )
connection	( system )
date	( update )
delete	( update )
device	( diagnostic )
dir	( system )
dircode	( system )
ether-display	( diagnostic )
fatal-history	( system )
format	( code )
get	( system )
hdlc	( system )
help	( user )
if-admin	( diagnostic )
line	( system )
[More? <ret>=next entry,</ret>	<pre><sp>=next page, &lt;^C&gt;=abort]</sp></pre>

To display help text about a command:

admin> <b>help dir</b>			
dir	list	all	profile types
dir profile-type	list	all	profiles of the specified type
dir profile-type profile-index	list	the	specified profile instance

**Dependencies:** The current security level is set by the current User profile and determines which commands are displayed in response to this command. If the current User profile does not have sufficient privileges to execute a command, it is not displayed. Commands with the User security level are always displayed. See *Auth* for details.

See Also: ?, Auth

### **If-Admin**

**Description:** Displays information about or administratively changes the state of an SNMP interface. Each device in the system has a unique SNMP interface number, which is an interface assigned to the device when a card is installed. Interface numbers are stored in NVRAM to keep state over system resets, so a physical device keeps the same interface number across system reset or power failures.

Permission level: Diagnostic

Usage: if-admin [-option [ interface ]]

Syntax element:	Description:
-a	List available SNMP interface numbers.
-d interface	Administratively down an SNMP interface
-1	List SNMP interface/device address mappings.
-u interface	Administratively bring up an SNMP interface.
-?	Display a usage summary

**Example:** To see a list of available SNMP interface numbers:

```
admin> if-admin -a
```

```
Available SNMP interface numbers
118 - infinity
```

To see a list of all SNMP interface numbers assigned by the system:

```
admin> if-admin -1
SNMP-IF DEVICE ADDRESS
 101
       - { 1 11 32 }
            \{ 1 17 1 \}
   1
       _
  102
            \{1\ 11\ 33\}
       -
   2
       _
            \{131\}
 103
            { 1 11 34 }
       _
    3
       _
            { 1 3 2 }
 104
           { 1 11 35 }
       _
   4
       _
            \{133\}
 105
       _
            { 1 11 36 }
   5
        -
            \{134\}
  106
       _
            { 1 11 37 }
    б
       _
            { 1 3 5 }
 107
            { 1 11 38 }
       _
            { 1 3 6 }
   7
       _
  108
       _
           { 1 11 39 }
   8
            { 1 3 7 }
  109
            { 1 11 40 }
        _
   9
            { 1 3 8 }
       _
 110
      -
            \{1 11 41\}
  10
            { 1 15 1 }
      -
 111
       _
            \{1 11 42\}
[More? <ret>=next entry, <sp>=next page, <^C>=abort]
```

To bring up an SNMP interface number 111:

admin> **if-admin -u 111** interface 111 state change forced

## lfmgr

**Description:** Displays interface table entries, toggles the debug display, and marks an interface as enabled or disabled.

Permission level: System

Usage: ifmgr [-option]

Syntax element:		Description:
-d		Display interface table entries.
-t		Toggle debug display.
up   down		Enables or disables an interface. These options have the same effect as setting the Enabled parameter in the Ethernet profile, and are sub- ject to the same limitations
ifNum	ifName	Specifies the interface by number or name.

Example: To view the Ifmgr usage summary on an Ethernet card in slot 4:

```
admin> open 1 4
```

```
ether-1/4> ifmgr
usage: ifmgr -option
    d (d)isplay interface table entries.
    t (t)oggle debug display.
    ifmgr [up|down] [ifNum|ifName]
```

To view the interface number and name:

To disable an interface:

ether-1/4> ifmgr down ie1-4-1

The Ifmgr display indicates that the interface is disabled by displaying a dash instead of an asterisk in the Up column (u):

Note: A disabled Ethernet interface is also shown with a dash in Netstat command output.

To mark an interface as up:

ether-1/4> ifmgr up iel-4-1

An interface may be administratively disabled by using the Ifmgr command or updating the Ethernet profile, or it may be marked as down by the Ethernet driver when Link-State-Enabled is Yes and Link-State is Down. Therefore, using the Up option to the Ifmgr command does not necessarily enable the interface. However, it does mark the interface as up.

## IGMP

**Description:** Displays information about IGMP groups and clients. This information an be useful for tracking IGMP group memberships and active client interfaces when multicast forwarding is enabled.

Permission level: System

Usage: igmp group | client

Syntax element:	Description:
group	Display active multicast group addresses and interfaces.
client	Display multicast clients

**Example:** To display active multicast group addresses and interfaces for each group:

admin>	igmp	group
--------	------	-------

IGMP Group	address Routing	Table Up Ti	.me: 0:0:22:17	
Hash	Group Address	Members	Expire time	Counts
10	224.0.2.250			
		2	0:3:24	3211 :: 0 S5
		1	0:3:21	145 :: 0 S5
		0(Mbone)		31901 :: 0 S5

The output contains these fields:

- Hash is an index to a hash table (displayed for debugging purposes only).
- Group address is the IP multicast address used in this packet.

**Note:** The IP multicast address being monitored is marked with an asterisk, meaning that this address is joined by local application.

- Members is the interface ID on which the membership resides. 0 represents the Ethernet interface. Other numbers represent WAN interfaces, numbered according to when they became active. The interface labeled "Mbone" is the interface on which the multicast router resides.
- Expire time indicates when this membership expires. The MAX TNT sends out IGMP queries every 60 seconds, so the expiration time is usually renewed. If the expiration time is reached, the entry is removed from the table. When this field contains periods, it means that this membership never expires.
- Counts shows the number of packets forwarded to the client, the number of packets dropped due to lack of resources, and the state of the membership (the state is displayed for debugging purposes).

To display a list of multicast clients, type:

```
admin> igmp client
IGMP Clients
```

Client	Version	RecvCount	CLU	ALU
0(Mbone)	1	0	0	0
2	1	39	68	67
1	1	33310	65	65

The output contains these fields:

- Client indicates the interface ID on which the client resides. 0 represents the Ethernet. Other numbers are WAN interfaces, numbered according to when they became active. The interface labeled "Mbone" is the interface on which the multicast router resides.
- Version is the version of IGMP being used.
- RecvCount is the number of IGMP messages received on that interface.
- CLU (current line utilization) and ALU (average line utilization) show the percentage of bandwidth utilized across this interface. If bandwidth utilization is high, some IGMP packet types will not be forwarded.

Dependencies: This command is not applicable if IP multicast forwarding is not enabled.

## **Ipcache**

**Description:** Displays information about IP route caches. Route caches enable slot cards to route IP packets to another slot, reducing the route-processing overhead on the shelf-controller. The shelf-controller is still responsible for managing routing protocols and the route caches themselves, but each slot card is able to check a small IP cache and route packets to a destination slot. When a slot card receives an IP packet for which it has no cache entry, it forwards that packet to the shelf-controller, which routes it to the proper slot and writes a cache entry that is downloaded to the route cache of all slot cards via the control bus.

Permission level: System

Usage: ipcache cache

**Example:** To display the cache:

admin> ipcache cache

Cache Limit 0 Cache Count 0 Cache over limit 0

Hash Address Gateway Ifname

Mem Usage: Allocated 1k bytes Free block count 35

## IPRoute

**Description:** Enables you to manually add or delete IP routes. Routing table changes made by using this command are not remembered across system resets.

Permission level: System

Usage: iproute add   delete		
Syntax element:	Description:	
add	Add an IP route to the routing table.	
delete	Delete an IP route from the routing table.	

# Adding a static IP route to the routing table

To add a static IP route to the MAX TNT unit's routing table, use the IPRoute Add command:

IPRoute Add dest\_IPaddr[/subnet\_mask] gateway\_IPaddr[/subnet\_mask]
[pref] [metric]

Table 2-1 describes each argument.

Table 2-1. IPRoute Add arguments

Argument	Description
dest_IPaddr[/subnet_mask]	Destination network address, and optional subnet mask (in bits). The default is 0.0.0.0/0.
gateway_IPaddr[/subnet_mask]	IP address of the router that can forward packets to the destination network, and optional subnet mask (in bits). The default is 0.0.0.0.
pref	Route preference. The default is 100.
metric	Virtual hop count of the route. You can enter a value between 1 and 15. The default is 1.

For example, consider the following command:

ascend% IPRoute Add 10.1.2.0 10.0.3/24 1

It adds a route to the 10.1.2.0 network and all of its subnets, through the IP router located at 10.0.0.3/24. The metric to the route is 1 (one hop away).

If you try to add a route to a destination that is already in the routing table, the MAX TNT does not replace the existing route unless it has a higher metric than the route you attempt to add. If you get the message Warning: a better route appears to exist, the MAX TNT has rejected your attempt to add a route. Note that RIP and OSPF updates can change the metric for the route.

**Note:** Any routes you add with the IPRoute Add command are lost when you reset the MAX TNT.

# Deleting a static IP route from the routing table

To remove a static IP route from the MAX TNT unit's routing table, enter the IPRoute Delete command:

```
IPRoute Delete dest_IPaddr[/subnet_mask]
[gateway_IPaddr[/subnet_mask]]
```

The arguments are the same as for IP Route Add. (See Table 2-1 on page 2-41.)

For example, the following command removes the route to the 10.1.2.0 network:

ascend% IPRoute Delete 10.1.2.0 10.0.3/24

**Note:** RIP and OSPF updates can add back any route you remove with IPRoute Delete. Also, the MAX TNT restores all routes listed in the IP-Route profile after a system reset.

# Line

**Description:** Specifies that the upper-right or lower-right portion of the status window (or both) should display T1, E1, or DS3 line and channel status information. If the status window is not already displayed, this command opens it with the connection status information displayed.

### Permission level: System

Usage: line [ all	enabled ] [ top   bottom ]
Syntax element:	Description:
all	Display status information about all T1 lines.
enabled	Display status information only about enabled T1 lines.
top	Display line status in the upper portion of the status window.
bottom	Display line status in the lower portion of the status window (the default).

**Example:** To display line status information in the upper part of the status window:

#### admin> line top

2 Connections	1/12/0 אם
001 tomw PPP 1/7/14 19200	1/15/0 RA
002 timl MP 1/7/3 56000	
	M: 48 L: info Src: shelf-1/controller
	48 out of 48 modems passed POST
	Issued: 16:48:02, 09/27/1996

[ Next/Last Conn <dn/up arw>, Next?Last Page: <pg dn/up>, Exit: <esc>

Line status information includes the following identifiers and codes:

- A line identifier in shelf/slot/line format.
- A two-character code indicating the line's link status:

Code:	Description:
LA (link active)	The line is active and physically connected.
RA (red alarm)	The line is not connected, improperly configured, experiencing a very high error rate, or is not supplying adequate synchronization.
YA (yellow alarm)	The MAX TNT is receiving a Yellow Alarm pattern. The Yellow Alarm pattern is sent to the MAX TNT to indicate that the other end of the line cannot recognize the signals the MAX TNT is transmitting.
DF (d-channel fail)	The D channel for a PRI line is not currently communicating.

Code:	Description:
1S (all ones)	A keep-alive (all ones) signal is being sent from the PRI network to the MAX TNT to indicate that the line is currently inoperative.
DS (disabled)	The line may be physically connected, but the T1 or E1 profile specifies that it is inactive.
• A single-character	code indicating channel status (one for each channel in the line).
Code:	Description:
. (period)	The channel is not available because the line is disabled, has no physical link, or does not exist, or because the channel configuration specifies that it is unused.
* (asterisk)	The channel is connected in a current call
- (hyphen)	The channel is currently idle (but in service).
d	The MAX TNT is dialing from this channel for an outgoing call.
r	The channel is ringing for an incoming call.
m	The channel is in maintenance/backup (ISDN only).
n	The channel is nailed.
0	The channel is out of service (ISDN only).
S	The channel is an active D channel (ISDN only).

To display a prompt below the status window, press the Escape key. To scroll through the list of lines, press the up-arrow or down-arrow key, or to page up or down through the lines, press the Page Up or Page Dn key.

To close the status window:

admin> **status** 

See Also: Connection, Log, Status, T1channels, View

## List

**Description:** Lists the contents of the current or specified context in the working profile. Listing a subprofile changes the current context to that subprofile. Specifying two periods (..) as the command argument changes the current context back to one level higher in the working profile ("closing" the subprofile).

Note: The List command works only on the working profile.

### Permission level: System

Usage: list [..] [ param-name [ param-index ] [ sub-profile ] ... ]

Syntax element:	Description:
(two periods)	Close the current subprofile and return to the previous higher context.
param-name	A parameter in the current context. If the parameter is in a subprofile, you must specify the subprofile name first.
param-index	Complex parameters have an index; for example, the Inter- face-Address parameter contains both the physical-address and logi- cal-item indexes.
sub-profile	List the contents of a subprofile that is visible in the current context, and make that subprofile the current context.

**Example:** To make a Connection profile the working profile:

admin> read connection dallas

To list its contents:

```
admin> list
station*=dallas
active=yes
encapsulation-protocol=mpp
called-number-type=national
dial-number=85283
clid=""
ip-options={ yes yes 1.1.1.1/8 0.0.0/0 7 100 255 no no 0 0.0.0.0 rou+
bridging-options={ 0 no }
session-options={ "" "" no 120 no-idle 120 "" }
telco-options={ ans-and-orig no off 1 no no 64k-clear 0 "" "" no no }
ppp-options={ ****** ****** stac 1524 no 600 600 }
mp-options={ 1 1 2 }
mpp-options={ "" quadratic transmit 1 1 15 5 10 70 }
tcp-clear-options={ "" 0 }
answer-options={ }
usrRad-options={ global 0.0.0.0 1646 "" 1 acct-base-10 }
calledNumber=""
```

To list a subprofile:

```
admin> list ppp
send-password=******
recv-password=******
enabled=yes
link-compression=stac
mru=1524
lqm=no
disconnect-on-auth-timeout=yes
lqm-minimum-period=600
lqm-maximum-period=600
```

To return to the top-level context of the profile:

admin> list ..

To use the List command to display the Answer-Options subprofile, type:

```
admin> list .. answer
profile-required=no
ans-default=no
profile-source=no
clid-auth-mode=ignore
```

**Dependencies:** The List command works only on the working profile. To make an existing profile the working profile, use the Read command. When you create a new profile, it becomes the working profile automatically.

See Also: Dir, Get, Read, New, Set, Write

# Load

**Description:** Uploads a code image to flash or runs a remote configuration script. The code image or script may be located on the disk of the PC you are using for the terminal session with the MAX TNT, or on a network host that supports TFTP.

### Permission level: Update

<pre>load [ -v ] load-type [ -subtype ] source [ devi</pre>	ice ]
---	-------

Syntax element:	Description:
-v	Display verbose output for configuration loads.
load-type	The load type:
	• config— configuration file
	• sr— shelf-router runtime load (resides on onboard flash)
	• boot-sr— shelf-router boot load
	• t1-8— code for an 8-port T1 card
	• e1-8— code for an 8-port E1 card
	• hdlc— code for an HDLC card
	• modem— code for a modem card
	• swan— code for a serial WAN card
	• enet— code for an Ethernet card
	• ana-modem—code for an analog modem card
	• tar—a tar file containing all slot card code images
	The Load command supports type-checking to verify that the load-type specified on the command line matches the image header.
-subtype	The subtype of the image:
	• –normal (for regular image, the default)
	• -debug (for debugging image)
	• -diagnostic (for diagnostic image)
	The Load command supports subtype alignment (the image will use a valid subtype specified on the command line). For example, if you load an image whose header specifies that it is a normal image, but you specify the –debug subtype, the image saved in flash has a subtype of debug instead of normal.
source	The location from which the file will be loaded:
	• network <i>host filename</i> —Following the word "network" you can specify a host name or IP address and the path to the file on that host.
	• console— The PC you are using in a terminal session.
device	The name of the flash card to load. These are valid device names:
	• [flash-card-]1 (default)
	• [flash-card-]
	Note that device names may be abbreviated as "1" and "2".

**Example:** To load a configuration file named maxtnt.cfg from a network host 10.8.7.2 to the flash-card-1:

admin> load config network 10.8.7.2 /maxtnt.cfg

To load a software update for a T1 card from the PC you are using to flash-card-2:

```
admin> load t1-8 console 2 tntt1.ffs
```

**Note:** The first time you load MAX TNT system software using a tar file, Ascend recommends that you bring down the expansion slots before upgrading their slot card code images. After you have loaded a tar file once, you do not need to down the slots for your next upgrade.

Assuming that you have access to the unit through the shelf-controller Ethernet or serial port, you can load a tar file by following the steps below. Note that the MAX TNT will not be operational from step 2 through step 4 of this procedure.

1 Load the shelf controller software. For example, to load tntsr.bin from a network host named "host1":

admin> load boot-sr net host1 tntsr.bin

2 If this is the first time you are upgrading using a tar file, reset the unit to execute the new shelf controller software, and manually down all installed slot cards using the Slot command. (If you have already loaded a tar file previously, you can skip this and go to step 3.) For example:

```
admin> reset
admin> slot -d 2
admin> slot -d 5
admin> slot -d 12
admin> slot -d 13
```

**3** Load the tar file. For example, to load the tntrel.tar file from a network host named "host1":

```
admin> load tar net host1 tntrel.tar
```

4 Manually bring up all slot cards, or reset the system.

admin> reset

**Note:** As an alternative, you may extract the contents of a tar archive and load slot card images individually. Windows users may find the WinZip utility useful (available at www.win-zip.com). For example, to load just the update for a T1 card:

```
admin> load t1-8 net host1 tntt1.ffs
```

These are the error or warning messages that can appear when loading a tar file:

- load aborted: not a tar image
- load aborted: a tar image, inconsistent with the specified load-type.
- load aborted: invalid/unknown image header.
- load aborted: mismatched image for the specified load-type.
• load aborted: invalid image, unsupported by load tar command.

Any one of the error messages listed above terminates the Load. The Load command supports type-checking to verify that the load-type specified on the command line matches the image header. These messages indicate that the type-checking process discovered inconsistencies between the load-type and the image header. Check your command line. If necessary, download the tar file again.

load: warning: old image header version detected, load continued...
 This is a warning message that does not terminate the Load. It indicates that you are not loading the most recent software version.

See Also: Dircode, Format, Fsck, Save

### Log

**Description:** Specifies that the upper-right or lower-right portion of the status window (or both) should display a message from the MAX TNT log buffer that contains the most recent system events. The number of events stored in the log is set by the Save-Number parameter in the Log profile. If the status window is not already displayed, this command opens it with the connection status information displayed.

#### Permission level: System

1	U <b>sage: log</b> [ top	bottom ]
	Syntax element:	Description:
	top	Display the log in the upper-right portion of the status window.
	bottom	Display the log in the lower-right portion of the status window.

Example: To display the event log in the lower portion of the status window:

admin> log bottom

2 Connections 001 tomw PPP 1/7/14 19200 002 timl MP 1/7/3 56000	Status Serial number: 6201732 Version: 1.0F
	Rx Pkt: 11185897 Tx Pkt: 42460 Col: 129
	12/26/1996 12:20:15 Up: 3 days, 21:47:32
	M: 29 L: info Src: shelf-1/controller
	48 out of 48 modems passed POST
	Issued: 16:48:02, 09/27/199(

[ Next/Last Conn <dn/up arw>, Next?Last Page: <pg dn/up>, Exit: <esc>

The first line of the event log window shows the log entry number (M: 00 through M: N, where N is set in the Save-Number parameter of the Log profile), the level of message , and the device on which the event occurred. The last line shows the date and time when the event occurred.

These are the log message levels:

- emergency—Something bad has happened and normal operation is doubtful.
- alert—Something bad has happened, but normal operation can probably continue.
- critical—An interface has gone down or there has been a security error.
- error—Something that should not occur has occurred.
- warning—Something out of the ordinary has happened in otherwise normal operations, such as a login failure due to an invalid user name or password.
- notice—Something of interest has happened during normal operation, such as a link going up or down.
- info—A change in state or status was noticed. These messages are not of general interest.
- debug—These messages would only be of interest when debugging unit configuration.

In the middle of the window, the text of the most recent message is displayed. You can press the up-arrow to see previous messages, and return to more recent messages by pressing the down-arrow key.

Here are some sample informational messages:

48 out of 48 modems passed POST

All of the modems on a card passed the power-on self test.

• Incoming call

A call has been received by not yet routed.

- Outgoing call The MAX TNT has dialed a call.
- Added Bandwidth The MAX TNT has added bandwidth to an active call.
- Ethernet up

The Ethernet interface has been initialized and is running.

• LAN session up

A PPP session has been established.

• LAN session down

A PPP session has been terminated.

Here are some example warning messages:

• Busy

The phone number was busy when the call was dialed.

No connection

The remote end did not answer when the call was dialed.

Network problem

The call setup was faulty because of problems in the WAN or in the Line Profile configuration. The D channel might be getting an error message from the switch, or the telco might be experiencing a problem.

• Call disconnected

The call has ended unexpectedly.

• Far end hung up

The remote end terminated the call normally.

• Incoming glare

The MAX TNT could not place a call because it saw an incoming "glare" signal from the switch. Check the Robbed-Bit-Mode setting.

LAN security error

A PPP session has failed authentication, another session by the same name already exists, or RADIUS/TACACS authentication timed out.

To display a prompt below the status window, press the Escape key. To close the status window:

admin> **status** 

See Also: Connection, Line, Status, View

#### Modem

**Description:** Displays information about digital modems in the MAX TNT. Each modem card provides 48 modems.

Permission level: System

Usage: modem [-option]

Syntax element:	Description:
-a	Display all available modems.
-d	Display disabled modems.
-f	Display failed or non-existent modems.
-g	Display available good modems.
-i	Display in-use modems.
-m	Display all possible modems.
-s	Display suspect modems.

**Example:** To display good modems that are available for use:

```
admin> modem -g
```

Non-suspect modems available for use:

					(dv0p	dvUpSt	dvRq	sAdm	mDis)	
Modem {	1	11	1	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	2	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	3	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	4	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	5	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	б	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	7	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	8	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	9	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	10	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	11	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	12	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	13	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	14	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	15	}	(Up	Idle	UP	UP	ENABLE	)
Modem {	1	11	16	}	(Up	Idle	UP	UP	ENABLE	)

[More? <ret>=next entry, <sp>=next page, <^C>=abort]

The information displayed includes the physical address and channel number, and the following status information about each channel:

- The operational state of the channel (dvOp), which may be up or down.
- The up status (dvUpSt), which may be Idle or Active.
- The required state of the device (dvRq), which may be up or down.
- The administrative state of the device (sAdm), which may be up or down.
- The modem disable mode (mDis) which may be enable or disable. This value is taken from the LAN-Modem profile.

See Also: Open, Show, Slot

## Netstat

**Description:** Displays the MAX TNT IP interface and routing tables, protocol statistics, and active sockets.

#### Permission level: System

Usage: netstat [-options [ params ]]

Syntax element:	Description:
no arguments	Display UDP and TCP statistics.
udp	Display only UDP information.
tcp	Display only TCP information.
-i	Display the IP interface table.
-r	Display the IP routing table.
-?	Display a usage summary.
-n	Display numeric addresses rather than symbolic names.
-s identifiers	Display protocol statistics. If no identifiers follow the –s option, all protocol statistics are printed. If specified, the identifiers determine the type of protocol statistics to display. The valid identifiers are udp, tcp, icmp, ip, igmp, and mcast.
params	You can specify a host name after the –r option to display the routing table entry for that host.

# **Displaying UDP and TCP statistics**

To display UDP and TCP statistics:

admin>	netstat -n					
udp:						
Socket	Local Port	InQLen	InQMax	InQDrops	Total Rx	
0	1023	0	1	0	0	
1	520	0	50	0	532	
2	7	0	32	0	0	
3	123	0	32	0	0	
4	1022	0	128	0	0	
5	161	0	64	0	0	
tcp:						
Socket	Local		F	Remote		State
0	*.23 *.*		ŕ	*.*		LISTEN
1	10.2.3.23		1	15.5.248.121		ESTABLISHED

To view information about UDP sockets:

admin> netstat -n udp

The command output shows the queue depth of various UDP ports, as well as the total packets received and total packets dropped on each port. The total packets received count includes the total packets dropped. For this sample output, the SNMP queue depth was set to 32:

admin> udp:	netstat udp				
Socket	Local Port	InQLen	InQMax	InQDrops	Total Rx
0	1023	0	1	0	0
1	route	0	50	0	509
2	echo	0	32	0	0
3	ntp	0	32	0	0
4	1022	0	128	0	0
5	snmp	32	32	5837	20849

To view information about TCP sockets and current TCP sessions:

admin> **netstat -n tcp** tcp: Socket Local 0 \*.23 \*.\*

Socket	Local	Remote	State
)	*.23 *.*	*.*	LISTEN
L	10.2.3.23	15.5.248.12144581	ESTABLISHED

# Displaying the interface table

To display the MAX TNT interface table showing addresses:

```
admin> netstat -in
```

The entries in the interface table associated with the MAX TNT Ethernet interfaces use the following naming convention:

```
ie[shelf]-[slot]-[item]
```

For example, the example output shows a four-port Ethernet card in slot 13.

Name	MTU	Net/Dest	Address	Ipkts	Ierr	Opkts	0err
ie0	1500	12.65.212.0/24	12.65.212.227	107219	0	54351	0
100	1500	127.0.0.1/32	127.0.0.1	4867	0	4867	0
rjO	1500	127.0.0.2/32	127.0.0.2	0	0	0	0
bh0	1500	127.0.0.3/32	127.0.0.3	0	0	0	0
wan4	1500	10.122.99.1	-	0	0	0	0
iel-12-1	1500	11.168.6.0/24	11.168.6.227	430276	651	0	0
iel-12-2	1500	10.122.72.0/24	10.122.72.1	0	0	0	3144
iel-12-3	1500	10.122.73.0/24	10.122.73.1	0	0	3142	0
iel-12-4	1500	10.122.74.0/24	10.122.74.1	0	0	3141	0

The columns in the interface table contain the following information:

Column name:	Description
Name	The name of the interface:
	• ie0 or ie[ <i>shelf</i> ]-[ <i>slot</i> ]-[ <i>item</i> ] is an Ethernet interface
	• lo0 is the loopback interface
	• rj0 is the reject interface, used in network summarization
	• bh0 is the blackhole interface, used in network summarization
	• wanN is a WAN connection, entered as they become active.
MTU	(Maximum Transmission Unit) The maximum packet size allowed on the interface.

Column name:	Description
Net/Dest	The network or the target host this interface can reach.
Address	The address of this interface.
Ipkts	The number of packets received.
Ierr	The number of packets that contain errors.
Opkts	The number transmitted.
Oerr	The number transmitted that contain errors.

# Displaying the routing table

Interface names appear in the routing table as well:

#### admin> **netstat -rn**

0.0.0/0	206.65.212.1	ie0	SG	100	1	4891	48630
10.0.0/24	11.168.6.249	ie1-12-1	RGT	100	3	0	9236
10.0.100.0/24	11.168.6.86	ie1-12-1	RGT	100	2	0	48601
10.0.200.0/24	11.168.6.86	ie1-12-1	RGT	100	2	0	48601
10.122.72.0/24	-	ie1-12-2	C	0	0	3141	48630
10.122.72.1/32	-	100	CP	0	0	0	48630
10.122.73.0/24	-	ie1-12-3	C	0	0	3140	48630
10.122.73.1/32	-	100	CP	0	0	0	48630
10.122.74.0/24	-	ie1-12-4	C	0	0	3139	48630
10.122.74.1/32	-	100	CP	0	0	0	48630
10.122.99.0/24	10.122.99.1	wan4	SG	100	7	0	48630
10.122.99.1/32	10.122.99.1	wan4	S	100	7	1	48630
127.0.0.1/32	-	100	CP	0	0	0	48672
127.0.0.2/32	-	rjO	CP	0	0	0	48672
127.0.0.3/32	-	bh0	CP	0	0	0	48672
11.0.2.0/24	11.168.6.249	ie1-12-1	RGT	100	2	0	48626
11.168.6.0/24	-	ie1-12-1	С	0	0	14589	48630
11.168.6.0/24	11.168.6.116	ie1-12-1	*RGTM	100	8	0	48606
11.168.6.0/24	11.168.6.142	ie1-12-1	*RGTM	100	8	0	48610
11.168.6.0/24	11.168.6.96	ie1-12-1	*RGTM	100	8	0	48624
11.168.6.102/32	11.168.6.86	ie1-12-1	RGT	100	8	0	48601
11.168.6.115/32	11.168.6.116	ie1-12-1	RGT	100	8	0	48606
11.168.6.116/32	11.168.6.96	ie1-12-1	RGT	100	8	0	48624
11.168.6.141/32	11.168.6.142	ie1-12-1	RGT	100	8	0	48610
11.168.6.145/32	11.168.6.86	ie1-12-1	RGT	100	8	0	48601
11.168.6.227/32	-	100	CP	0	0	0	48630
12.65.212.0/24	-	ie0	С	0	0	54432	48672
12.65.212.227/32	-	100	CP	0	0	4863	48672
255.255.255.255/32	2 -	ie0	CP	0	0	0	48630

Column name:	Description:					
Destination	The target address of a route. To send a packet to this address, the MAX TNT will use this route. If the target address appears more than once in the routing table, it uses the most specific route (having the largest subnet mask) that matches that address.					
Gateway	The next hop router that can forward packets to the given destination. Direct routes (without a gateway) show a hyphen in this column.					
IF	The name of the interface on which to send packets along this route. (See the interface table description above.)					
Flg	One or more of the following flags:					
	• C (A directly connected route such as Ethernet)					
	• I (ICMP Redirect dynamic route)					
	• N (Placed in the table via SNMP MIB II)					
	• O (A route learned from OSPF)					
	• R (A route learned from RIP)					
	• r (A transient RADIUS-like route that will disappear when the connection drops)					
	• S (A static route)					
	• ? (A route of unknown origin, which indicates an error)					
	• G (An indirect route via a gateway)					
	• P (A private route)					
	• T (A temporary route)					
	• M (A multipath route)					
	• * (A backup static route for a transient RADIUS-like route)					
Pref	The preference value. See the <i>MAX TNT Network Configuration Guide</i> for details on defaults for route preferences.					
Metric	A RIP-style metric for the route, with a valid range of 0-16. Routes learned from OSPF show a RIP metric of 10. OSPF cost-infinity routes show a RIP metric of 16.					
Use	A count of the number of times the route was referenced since it was created. (Many of these references are internal, so this is not a count of the number of packets sent using this route.)					
Age	This is the age of the route in seconds. It is used for troubleshooting, to determine when routes are changing rapidly or flapping.					

The columns in the routing table contain the following information:

# **Displaying IP and multicast protocol statistics**

To display IP and multicast protocol statistics:

admin> netstat -s ip mcast ip: 3354 packets received 0 packets received with header errors 0 packets received with address errors 0 packets received forwarded 0 packets received with unknown protocols 0 inbound packets discarded 41357 packets delivered to upper layers 35461 transmit requests 0 discarded transmit packets 78 outbound packets with no route 0 reassemblies timeout 0 reassemblies required 0 reassemblies succeeded 0 reassemblies failed 0 fragmentation succeeded 0 fragmentation failed 0 fragmented packets created 0 route discards due to lack of memory 64 default ttl mcast: 445 packets received 445 packets forwarded 0 packets in error 0 packets dropped 0 packets transmitted

See Also: Nslookup, Ping, Rlogin, Traceroute

#### New

**Description:** Creates an instance of the specified profile type and makes the new profile the working profile. You can also use the command to assign the profile its index value. To write a new profile, you must uniquely identify it by setting its index field. A parameter followed by an asterisk in the profile listing is the index field.

In most cases, the profile's parameters are assigned default values. However, depending on the profile type, the index chosen might affect the factory default values set in the profile.(For details, see page 2-59.)

#### Permission level: System

Syntax cicincitt.	Description.
profile-type	The type of profile you want to create.
profile-index	The index value of the profile.

If you create a new indexed profile without using the *profile-index* argument, a default index (usually null or zero) is used. This new default differs from the default index value used in previous releases, as shown in Table 2-2. This change may cause problems if you restore a configuration that includes profiles that use the old default index. For this reason, we recommend that you save the MAX TNT configuration immediately after upgrading.

Table 2-2. New default index values

Profile type	Old default index	New default index		
User	default			
Serial	{ shelf-1 controller 2 }	{ any-shelf any-slot 0 }		
Ethernet	{ shelf-1 controller 1 }	{ any-shelf any-slot 0 }		
IP-Interface	{ { shelf-1 controller 1 } 0 }	{ { any-shelf any-slot 0 } 0 }		

**Note:** If the *profile-index* is specified on the command line, it is validated before use. For example:

```
admin> new t1 {12 2 3}
error: bad index: unknown value "12"
admin> new system foo
error: profile has no index
```

If a valid index is specified, it is applied to the new profile, which is read into the edit buffer:

```
admin> new t1 {1 2 3}
T1/{ shelf-1 slot-2 3 } read
admin> list
physical-address*={ shelf-1 slot-2 3 }
line-interface={ no d4 ami eligible middle-priority inband +
```

```
Example: To create a new Connection profile called tim:
```

```
admin> new conn tim
CONNECTION/tim read
admin> list
station*=tim
active=no
encapsulation-protocol=mpp
called-number-type=national
dial-number=""
clid=""
ip-options={ yes yes 0.0.0.0/0 0.0.0.0/0 7 100 255 no no 0 0.0.0.0 rou+
bridging-options={ 0 no }
session-options={ "" "" no 120 no-idle 120 "" }
telco-options={ ans-and-orig no off 1 no no 56k-restricted 0 "" "" no +
ppp-options={ "" "" stac 1524 no 600 600 }
mp-options={ 1 1 2 }
mpp-options={ "" quadratic transmit 1 1 15 5 10 70 }
tcp-clear-options={ "" 0 }
answer-options={ }
usrRad-options={ global 0.0.0.0 1646 "" 1 acct-base-10 }
calledNumber=""
admin> write
```

CONNECTION/tim written

**Dependencies:** The index you choose might affect the factory default values set in the profile. For example, if you specify the profile-index "default" for a User profile, the factory default permission settings are as follows:

```
admin> new user default
USER/default read
admin> list
name*=default
password=""
active-enabled=yes
allow-termserv=no
allow-system=no
allow-diagnostic=no
allow-update=no
allow-password=no
allow-code=no
allow-debug=no
idle-logout=0
prompt=*
default-status=no
top-status=general-info
bottom-status=log-window
left-status=connection-list
use-scroll-regions=no
log-display-level=none
```

If you specify the profile-index "admin" instead, the factory-default permissions are set as follows:

admin> new user admin USER/admin read admin> list name\*=admin password=Ascend active-enabled=yes allow-termserv=yes allow-system=yes allow-diagnostic=yes allow-update=yes allow-password=no allow-code=yes allow-debug=no idle-logout=0 prompt=\* default-status=no top-status=general-info bottom-status=log-window left-status=connection-list use-scroll-regions=no log-display-level=error

See Also: Delete, List, Read, Set, Write

## Nslookup

**Description:** Resolves the IP address of a specified host name by performing a DNS lookup. The IP-Global profile must be configured with the address of at least one DNS server. For information on configuring DNS, see the *MAX TNT Network Configuration Guide*.

Permission level: Diagnostic

Usage: nslookup hostname

Syntax element:	Description:
hostname	The host name for which you want to obtain an IP address.

**Example:** To look up a host's IP address in DNS:

```
admin> nslookup host-231
Resolving host host-231.
IP address for host host-231 is 10.65.12.231.
```

See Also: Arptable, Netstat

## NVRAM

**Description:** Manages or clears onboard non-volatile random access memory (NVRAM). The system configuration is stored in the onboard NVRAM. When you clear NVRAM, the system is re-initialized and comes up unconfigured, just as it was when you first installed it. You can then restore the configuration from a recent backup. For details, see the *MAX TNT Network Configuration Guide*.

**Permission level:** Update

Usage: nvram [ -options ]

Syntax element:	Description:
-f	Clear NVRAM without prompting for confirmation.
-t	Toggle module debug level.
-u	Display NVRAM usage statistics.
-c	Compact the NVRAM storage.
-?	Display a usage summary.

Example: To display memory usage information:

```
admin> nvram -u
```

NVRAM seg[0]:start 14000098 size 258040 avail 191680 cmpct 0

Without any arguments, this command clears NVRAM and resets the unit:

```
admin> nvram
Clear configuration and reboot? [y/n]
```

See Also: Load, Save, Reset

# Open

**Description:** Each slot card has its own processor, its own memory, its own operating system, and its own set of debug commands. The Open command sets up a Telnet-like session across the control bus to one of the slot cards. Then you can execute commands on that slot card.

**Permission level:** Diagnostic

**Usage: open** 1..9[1..16]

Syntax element:	Description:
19	The shelf number in a multi-shelf system.
116	The number of the expansion slot you want to diagnose.

**Example:** To open a session with a T1 card installed in shelf 1, slot 13: admin> open 1 13

The prompt changes to show your location. To see a list of available commands:

t1-1/13> ?			
?	(	user )	
auth	(	user )	
cbcardif	(	debug )	
checkd	(	debug )	
clear	(	user )	
clock-source	(	diagnostic )	
debug	(	diagnostic )	
debugd	(	debug )	
display	(	debug )	
dp-ram-display	(	debug )	
dpram-test	(	debug )	
dspBypassClients	(	debug )	
dspDial	(	debug )	
dspSetDddTimeslot	(	debug )	
fe-loop	(	diagnostic )	
fill	(	debug )	
frreset	(	debug )	
gdb	(	debug )	
help	(	user )	
lifDebug	(	debug )	
logdebug	(	debug )	
logtest	(	debug )	
mibcbagt	(	debug )	
mibcbreq	(	debug )	
mibmgr	(	debug )	
modify	(	debug )	
nailedState	(	debug )	
nlcb	(	debug )	
open	(	diagnostic )	
pools	(	debug )	
priDisplay	(	diagnostic )	
quiesce	(	debug )	
quit	(	user )	

revision	( debug )
slots	( debug )
stackLimit	( debug )
stackUsage	( debug )
tdm	( debug )
timedMsgTest	( debug )
tntuart	( debug )
tprofmgr	( debug )
tss	( debug )
update	( debug )
version	( system )
whoami	( user )

To return to the shelf-controller:

t1-1/13> quit

See Also: Show, Slot

### OSPF

**Description:** Displays information related to OSPF routing, including the Link-State Advertisements (LSAs), border routers' routing tables, and the OSPF areas, interfaces, statistics, and routing table.

Permission level: Diagnostic

Usage: ospf [options]

Syntax element:	Description:
?	Display help information.
areas	Display OSPF areas.
border-routers	Display OSPF border router information
database	Display OSPF link-state database.
errors	Display OSPF errors.
general	Display OSPF general information.
interfaces	Display OSPF interfaces.
neighbor	Display OSPF neighbors.
rtab	Display OSPF routing tab.
timer-queue	Display OSPF timer queue.
stats	Display OSPF stats.

### Viewing information about OSPF areas

To view information about OSPF areas, type:

```
admin> ospf areas
```

```
Area ID: 0.0.0.0
Auth Type: Simple Passwd Import ASE: On Spf Runs: 5
Local ABRs: 0 Local ASBRs: 2 Inter LSAs: 3 Inter Cksum sum: 0x22298
```

- Area ID specifies the area number in dotted-decimal format.
- The Auth Type field states the type of authentication, simple or null.
- Import ASE relates to the way routes are calculated. In effect, it specifies whether the router is an ABR or not. This functionality is always ON in the MAX TNT.
- Spf Runs show how many times the SPF calculation was run. The calculation is performed every time the router notes a topology change or receives an update from another router.
- Local ABRs shows the number of ABRs the router knows about and the number of areas. The number 0 (zero) means that the router knows about the backbone area only.
- Local ASBRs shows the number of ASBRs the router knows about.
- Inter LSAs shows the number of entries in the link-state database.
- Inter Cksum sum shows the checksum that is used to note that a database has changed.

## Viewing information about AS border routers

To view AS border-router information:

admin> ospf border routers

Dest	Area	Cost E	Path	Nexthop	AdvRtr	Ι
AS Border Routes:	:					
10.168.6.181	0.0.0.0	1	RTR	10.168.6.181	10.168.6.181	

- Dest is the destination address of the area shown in the Area field.
- Area is the area ID.
- Cost is the cost of the route.
- E is the cost of the link. (The cost of a route is the sum of the cost of each intervening link, including the cost to the connected route.)
- Path specifies the type of link: EXT (exterior), INT (interior), or STUB (a default).
- Nexthop specifies the next hop router address.
- AdvRtr is the advertising router. Sometimes a router will advertise routes for which it is not the gateway.

#### Viewing the link-state database

To view the router's link-state database, type:

#### admin> **ospf database**

	Stub Link States (	Area 0.	0.0.10	)	
Link ID	Adv Router	Age	Len	Seq#	Metric
11.57.4.254	11.57.4.254	410	24	0x0	0
10.31.114.0	10.31.114.0	410	24	0x0	0
10.31.114.254	10.31.114.254	420	24	0x0	0
	Router Link States	s (Area	0.0.0.	10)	
Link ID	Adv Router	Age	Len	Seq#	Metric
11.57.4.8	11.57.4.8	577	36	0x80000021	0
11.57.4.254	11.57.4.254	420	60	0x80000024	0
10.31.114.254	10.31.114.254	421	60	0x80000019	0
	Network Link State	es (Area	0.0.0	.10)	
Link ID	Adv Router	Age	Len	Seq#	Metric
11.57.4.8	11.57.4.8	421	32	0x8000000a	0
	Summary Net Link S	States (	Area (	.0.0.10)	
Link ID	Adv Router	Age	Len	Seq#	Metric
10.103.0.0	11.57.4.8	708	28	0x80000009	10
10.103.0.3	11.57.4.8	708	28	0x80000009	30
10.103.0.4	11.57.4.8	708	28	0x80000009	30
10.103.0.254	11.57.4.8	106	28	0x80000001	30
10.104.0.0	11.57.4.8	708	28	0x80000009	21
10.104.0.2	11.57.4.8	708	28	0x800000c	20
10.105.0.0	11.57.4.8	243	28	0x8000003	11
10.106.0.0	11.57.4.8	254	28	0x8000001	11
10.108.0.0	11.57.4.8	256	28	0x80000001	11

10.113.0.0	11.57.4.8	710	28	0x80000003	11
10.114.0.0	11.57.4.8	710	28	0x80000009	22
10.115.0.0	11.57.4.8	236	28	0x80000001	12
10.123.0.0	11.57.4.8	710	28	0x80000009	10
10.233.0.0	11.57.4.8	287	28	0x80000001	11
10.234.0.0	11.57.4.8	287	28	0x80000001	11
10.236.0.0	11.57.4.8	287	28	0x80000001	11
101.108.0.0	11.57.4.8	256	28	0x80000001	11
10.11.57.0	11.57.4.8	108	28	0x80000001	21
10.11.57.254	11.57.4.8	118	28	0x80000001	20
201.108.0.0	11.57.4.8	256	28	0x80000001	11
	Type-7 AS External	Link	States	(Area 0.0.0.	10)
Link ID	Adv Router	Age	Len	Seq#	Metric
11.67.0.0	10.31.114.254	531	36	0x8000000b	1
199 199 10 0	11 57 4 254	5	36	0~8000014	1

The database is segmented by the type of link as defined in RFC 1583.

- Stub link states are summary-LSAs that describe point-to-point routes to networks or AS boundary routers.
- Router link states describe the collected states of the router's interfaces.
- Network link states describe the set of routers attached to the network.
- Type-7 AS-external link states describe static routes to destinations external to the Autonomous System. A default route for the Autonomous System can also be described by an AS-external-LSA.

For each type of link other than external, the Area field shows the area number. In addition:

- Link ID is the target address of the route.
- Adv Rtr is the address of the advertising router.
- Age is the age of the route in seconds.
- Len is the length of the LSA.
- Seq # is a number that begins with 80000000 and increments by one for each LSA received.
- Metric is the cost of the link, not of a route. The cost of a route is the sum of all intervening links, including the cost of the connected route.

### Viewing details about a route in the database

The OSPF command contains the following subcommands for focusing on a particular area of the database. To see your options:

```
admin> ospf database ?

Ospf database ?

Display help information

Ospf database asb

Display OSPF ASB summary link states

Ospf database ase

Display OSPF external link states

Ospf database network

Ospf database router

Ospf database summary

Display OSPF router link states

Ospf database summary

Display OSPF network summary link states

Ospf database ase7

Display OSPF type-7 external link states
```

```
For example, to focus on the network link states:
admin> ospf database network
                Network Link States (Area 0.0.0.0)
LS Age: 1473
 Options: No TOS-capability
Link State ID: 10.168.6.181
Advertising Router: 10.168.6.181
 Sequence Number: 0x8000003
 Checksum: 0x8e58
 Length: 32
Network Mask: /24
        Attached Router: 10.168.6.181
        Attached Router: 10.168.6.148
To view information about type-7 ASE link states:
admin> ospf database ase7
   Type-7 AS External Link States (Area 0.0.0.10)
 LS Age: 539
 Options: No TOS-capability
 Link State ID: 11.67.0.0
 Advertising Router: 10.31.114.254
 Sequence Number: 0x800000b
 Checksum: 0x7f9f
 Length: 36
 Network Mask: /16
       Metric Type (bit E): 1
        TOS: 0
        Metric: 1
        Forwarding address: 10.31.114.254
        External Route Tag: c000000
 LS Age: 13
 Options: No TOS-capability
 Link State ID: 199.199.10.0
 Advertising Router: 11.57.4.254
 Sequence Number: 0x80000014
 Checksum: 0x99cd
 Length: 36
 Network Mask: /24
       Metric Type (bit E): 1
        TOS: 0
        Metric: 1
        Forwarding address: 11.57.4.254
        External Route Tag: c000000
```

### Viewing information about packet errors

To see OSPF errors, type: admin> ospf errors ERRORS from: boot 0: IP: Bad OSPF pkt type 0: IP: Bad IP Dest 0: IP: Bad OSPF pkt type0: IP: Bad IP Dest0: IP: Bad IP proto id0: IP: Pkt src = my IP addr0: OSPF: Bad OSPF version0: OSPF: Bad OSPF checksum0: OSPF: Bad intf area id0: OSPF: Area mismatch0: OSPF: Bad virt link info0: OSPF: Auth type != area type0: OSPF: Auth key != area key0: OSPF: Packet is too small 0: OSPF: Packet size > IP length 0: OSPF: Transmit bad 1: OSPF: Received on down IF 0: Hello: IF mask mismatch 0: Hello: IF hello timer mismatch 0: Hello: IF dead timer mismatch 909: Hello: Extern option mismatch 0: Hello: Nbr Id/IP addr confusion 0: Hello: Unknown Virt nbr 0: Hello: Unknown NBMA nbr 0: DD: Unknown nbr 0: DD: Nbr's rtr = my rtrid 0: DD: Nbr state low 0: DD: Extern option mismatch 0: Ack: Nbr state low 0: Ls Req: Nbr state low0: Ls Req: Unknown nbr0: Ls Req: Empty request0: LS Req: Bad pkt0: LS Update: Nbr state low21: Ls Update: Unknown nbr 0: Ls Update: Newer self-gen LSA 0: Ls Update: Bad LS chksum 5: Ls Update: less recent rx 0: Ls Update: Unknown type

The output lists all error messages related to OSPF, with each message preceded by the number of times it has been generated since the MAX TNT powered up. Immediately following the number is a field indicating the packet type:

- IP (IP packets)
- OSPF (OSPF packets)
- Hello (Hello packets)
- DD (Database Description packets, which are exchanged periodically between neighbors)
- Ack (Every DD packet must be acknowledged.)
- LS Req (Link-state request— a request for an updated database)
- LS Update (An exchange to update databases)

### Viewing general information about OSPF routing

To see general information about OSPF, type:

```
admin> ospf general
```

```
Or, you can simply type:
admin> ospf
Rtr ID: 10.168.6.148
Status: Enabled Version: 2 ABR: Off ASBR: On
LS ASE Count: 4 ASE Cksum sum: Ox241b3 Tos Support: TOS 0 Only
New LSA Originate Count: 17 Rx New LSA Count: 9
```

- The Rtr ID field contains the IP address assigned to the MAX TNT Ethernet interface.
- Status shows whether OSPF is enabled or disabled.
- Version is the version of the OSPF protocols running.
- ABR can be on or off, depending on where the MAX TNT is situated on the network. If ABR is on, the MAX TNT performs additional calculations related to external routes.
- ASBR is always on in the MAX TNT. Although the MAX TNT cannot function as an IGP gateway, it does import external routes— for example, when it establishes a WAN link with a caller that does not support OSPF—and the ASBR calculations are always performed.
- LS ASE count specifies the number of link-state database entries that are external.
- ASE Cksum sum specifies a checksum that is used to note that ASE routes in the database have changed.
- TOS Support shows the level of TOS support in the router.
- New LSA Originate Count shows the number of LSAs this router created.
- Rx New LSA Count shows the number of LSAs this router received from other OSPF routers.

### **Viewing OSPF interfaces**

To display the OSPF interfaces, type:

admin> ospf interfaces

```
        Area
        IP Address Remote Addr
        Type
        State
        Cost Pri
        DR
        BDR

        0.0.0.0
        10.2.6.4
        10.2.6.4
        Bcast BackupDR 1
        5
        10.2.6.8
        10.2.6.4
```

- The Area field shows the area ID. (0.0.0.0 is the backbone.)
- The IP Address field shows the Ethernet interface IP address.
- Type can be broadcast (Ethernet) or point-to-point (WAN links).
- State shows how far along the router is in the election process of a DR or BDR. The state may be 1-way (indicating that the election process has begun), 2-way (indicating that the router has received notification), BackupDR, or DR.
- Cost is the metric assigned to the link. The default cost for Ethernet is 1.
- Pri shows the designated router-election priority assigned to the MAX TNT.
- DR identifies the designated router.
- BDR identifies the backup designated router.

# **Viewing OSPF neighbors**

To view adjacencies, type:

admin> ospf neighbor

 Area
 Interface
 Router Id
 Nbr IP Addr
 State
 Mode
 Pri

 0.0.0.0
 10.168.6.148
 10.168.6.181
 10.168.6.181
 Full
 Slave
 5

- Area is the area ID.
- Interface shows the address assigned to the interface. In the MAX TNT, the IP address is always the address assigned to the Ethernet interface.
- Router Id is the IP address of the router used to reach a neighbor. This is often the same address as the neighbor itself.
- Nbr IP Addr is the IP address of the neighbor.
- State indicates the state of the link-state database exchange. Full means that the databases are fully aligned between the MAX TNT and its neighbor.
- Mode indicates whether the neighbor is functioning in master or slave mode. The master sends Database Description packets (polls) which are acknowledged by Database Description packets sent by the slave (responses).
- Pri shows the designated router election priority assigned to the MAX TNT.

### Viewing the OSPF routing table

To view the OSPF routing table:

admin> ospf rtab

```
Dest
                Area
                        Cost E Path Nexthop
                                                     AdvRtr
                                                                   L
AS Border Routes:
10.168.6.181
               0.0.0.0 1
                                RTR 10.168.6.181
                                                    10.168.6.181
10.168.6.148
               0.0.0.0 0
                                RTR 0.0.0.0
                                                    10.168.6.148
Nets: Rtab Version 5
0.0.0.0/0
               0.0.0.0 2
                            0
                                EXT 10.168.6.181
                                                    10.168.6.181
                                                                    0
8.0.0.0/8
                imported: 2
                            0
                                 INT 10.168.6.148
                                                    10.168.6.181
10.168.6.0/24 0.0.0.0 1
                                                                   1
10.168.6.152/32 imported: 2
```

The routing table is segmented by the type of route.

- Dest is the destination address of the area shown in the Area field.
- Area is the area ID.
- Cost is the cost of the route.
- E is the cost of the link. (The cost of a route is the sum of the cost of each intervening link, including the cost to the connected route.)
- Path specifies the type of link: EXT (exterior), INT (interior), or STUB (a default).
- Nexthop specifies the target address from this router.
- AdvRtr is the advertising router. Sometimes a router will advertise routes for which it is not the gateway.

# Viewing the timer queue

To display information about the timer queue:

admin> ospf timer-queue

Current Timerq:

Туре	Minutes	Seconds	Area	Intf
TQAck	0	1	No Area	0.0.0.0
TQLsaLock	0	5	0.0.0.0	No Intf
TQRetrans	0	5	No Area	10.168.6.148
TQHelloTimer	0	10	No Area	10.168.6.148
TQAseLsdbAge	0	38	No Area	No Intf
TQIntLsdbAge	10	10	No Area	No Intf
TQSumLsdbAge	10	47	No Area	No Intf
TQIntLsa	13	29	No Area	No Intf
TQAseLsa	20	23	No Area	No Intf

# Viewing packet statistics

To display information about packets sent and received by the OSPF protocol, type:

```
admin> ospf stats
IO stats from:
                                     boot
>> RECEIVED:
      0: Monitor request
    481: Hello
      2: DB Description
      0: Link-State Req
      8: Link-State Update
      8: Link-State Ack
>> SENT:
     482: Hello
      3: DB Description
      2: Link-State Req
     11: Link-State Update
       8: Link-State Ack
```

## Ping

**Description:** Sends ICMP echo\_request packets to the specified host as a way to verify that the host is up and the transmission path to the host is open. The host returns ICMP echo\_response packets and the command generates statistics about the exchange.

#### Permission level: Diagnostic

Usage: ping [-qv] [-c count] [-i delay] [-s packetsize] hostname

Syntax element:	Description:
-d	Quiet. Do not display informational messages. Just display the sum- mary lines at the beginning and end of the command.
-v	Verbose. List ICMP packets received except echo_response packets.
-c count	Send only the specified number of packets
-i delay	Wait the specified number of seconds before sending the next packet. The default delay period is one second.
- <b>s</b> packetsize	Send the specified number of data bytes. The default size is 64 bytes, not including the 8-byte ICMP header. The minimum is 16.
hostname	The station's IP address or DNS host name.

**Example:** To ping a host on the local network:

```
admin> ping host-231
```

```
PING host-231 (10.65.12.231): 56 data bytes
64 bytes from 10.65.12.231: icmp_seq=0 ttl=255 time=0 ms
64 bytes from 10.65.12.231: icmp_seq=1 ttl=255 time=0 ms
64 bytes from 10.65.12.231: icmp_seq=2 ttl=255 time=0 ms
64 bytes from 10.65.12.231: icmp_seq=3 ttl=255 time=0 ms
64 bytes from 10.65.12.231: icmp_seq=4 ttl=255 time=0 ms
^c
--- host-231 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max=0/0/0 ms
```

Press Ctrl-C to stop. To exchange only 3 packets, each of which contains only 16 bytes:

```
admin> ping -c 3 -s 16 host-231

PING host-231 (10.65.12.231): 8 data bytes

16 bytes from 10.65.12.231: icmp_seq=0 ttl=255 time=0 ms

16 bytes from 10.65.12.231: icmp_seq=1 ttl=255 time=0 ms

16 bytes from 10.65.12.231: icmp_seq=2 ttl=255 time=0 ms

--- host-231 ping statistics ---

3 packets transmitted, 3 packets received, 0% packet loss

round-trip min/avg/max=0/0/0 ms
```

To exchange 3 packets and suppress the output for each exchange:

```
admin> ping -c3 -q host-231
PING host-231 (10.65.12.231): 56 data bytes
--- host-231 ping statistics ---
3 packets transmitted, 3 packets received, 0% packet loss
round-trip min/avg/max=0/0/0 ms
```

See Also: Netstat Rlogin, Telnet, Terminal-Server, Traceroute

## Power

**Description:** Checks the status of the MAX TNT redundant power supplies and displays the results.

Permission level: System

Usage: power

**Example:** To check the power supply:

admin> **power** Power supply A present, OK Power supply B not present

### Quiesce

**Description:** Allows you to Busy Out or take Out Of Service (OOS) individual ISDN T1 PRI lines or channels connected to the MAX TNT. This is known as "quiescing" the line or channel to make it available for maintenance. Calls on the line that are currently active are not torn down; when an active call drops, that channel is taken OOS.

Quiescing a line is equivalent to setting the Maintenance-State parameter in the T1 profile to Yes. Unquiescing the line sets the parameter to No. When the parameter is set to Yes, individual channels on that line cannot be restored. See Chapter 3, "MAX TNT Profile and Parameter Reference." This setting is preserved across power ups.

The type of switch affects whether the line or channel is taken out of service or busied out.

• AT&T switches running Custom generics

AT&T Custom generics support Service Messages that allow the MAX TNT to tell the switch to take channels on an ISDN PRI interface OOS. This condition is displayed in the line status window as an "o" in an OOS channel. When all channels on the line are OOS, the switch can route incoming calls to other lines in a particular hunt group.

• AT&T switches running NI-2 generics and Northern Telecom switches

For Northern Telecom switches or AT&T switches running NI-2 software, Service Messages to take channels OOS are not supported. There is no sure way for the MAX TNT to tell the switch to take a channel OOS. In this case, since channels cannot be taken OOS, incoming calls are presented to the MAX TNT even if the ISDN T1 PRI line is quiesced. The MAX TNT in this case will reject the call with a cause code of 17, User Busy. The user originating the call will receive a busy signal. This may be a problem for ISPs who would like to have the switch automatically route incoming calls to another, non-quiesced trunk in the hunt group.

**Note:** Restoring a line or channel that has been quiesced may take up to 3.5 minutes. Only 1 service message per channel is sent to the switch at the rate of one per second.

#### Permission level: System

Usage: quiesce [-option [ param ] ]

Syntax element:	Description:
-d	Quiesce a single DS0 channel (a B-channel on any T1 PRI line).
-е	Restore a single DS0 channel that has been quiesced.
-r line	Restore the specified T1 PRI line that has been quiesced.
-q line	Quiesce the specified T1 PRI line.
-t	Toggle debug display.

Example: To quiesce a T1 PRI line in port 4 of a card installed in shelf 1, slot 2:

```
admin> quiesce -q {1 2 4}
QUIESCE: line 1/2/4, enable=T, isPri=T
```

Dependencies: The specified T1 line must be enabled and configured for ISDN PRI.

See Also: Chapter 3, "MAX TNT Profile and Parameter Reference."

# Quit

**Description:** Terminates the current Telnet session.

Permission level: User

Usage: quit

**Example:** To terminate the current Telnet session:

admin> **quit** Connection closed by foreign host. my-station%

### Read

**Description:** Reads a copy of the specified profile into the edit buffer, making it the working profile. If the profile is one of a kind, such as the IP-Global profile, it has no index field. If an index field exists for a profile, it must be specified on the command line.

Only the working profile can be modified. The Set and List commands apply only to the working profile.

**Note:** The working profile remains in the edit buffer until you overwrite the buffer by entering the Read command again. To save changes made in the buffer, you must use the Write command.

#### Permission level: System

Usage: read profile-type [ profile-index ]

Syntax element:	Description:
profile-type	The type of profile to be read. Some profiles do not require an index specification.
profile-index	The profile index is the name or address that distinguishes a profile from others of the same type. To see profile indexes, use the Dir command ( <b>dir</b> profile-type).

**Example:** To find the right index for an IP-Interface profile, read that profile, and list its contents:

```
admin> dir ip-interface
```

```
66 12/20/1996 14:02:02 { { shelf-1 slot-12 1 } 0 }
66 12/27/1996 16:34:40 { { shelf-1 slot-12 2 } 0 }
66 12/27/1996 16:34:47 { { shelf-1 slot-12 3 } 0 }
66 12/27/1996 16:34:54 { { shelf-1 slot-12 4 } 0 }
66 12/28/1996 00:21:06 { { shelf-1 controller 1 } 0 }
admin> read ip-int {{1 c 1}0}
IP-INTERFACE/{ { shelf-1 controller 1 } 0 } read
admin> list
interface-address*={ { shelf-1 controller 1 } 0 }
ip-address=10.6.212.227/24
rip-mode=routing-send-and-recv
ospf={ no 0.0.0 normal 10 10 40 5 simple ****** 1 16777215 type-1 +
multicast-allowed=no
multicast-rate-limit=100
rip2-use-multicast=yes
```

The profile remains in the edit buffer until you overwrite the buffer with another Read or New command. Use the Set command to modify the profile. Use the Write command to save changes without clearing the buffer.

```
admin> set multicast-allowed=yes
admin> write
IP-INTERFACE/{ { shelf-1 controller 1 } 0 } written
```

The working profile is represented by a period character. Even if you have displayed other profiles using the Get command or executed other commands in the meantime, you can always display the working profile contents with this command:

```
admin> get .
interface-address*={ { shelf-1 controller 1 } 0 }
ip-address=10.6.212.227/24
rip-mode=routing-send-and-recv
ospf={ no 0.0.0.0 normal 10 10 40 5 simple ****** 1 16777215 type-1 +
multicast-allowed=yes
multicast-rate-limit=100
```

See Also: Get, List, New, Set, Write

## Refresh

**Description:** Opens a connection to a RADIUS server and retrieves the latest configuration information. See the *MAX TNT RADIUS Guide*.

Permission level: System

Usage: refresh -options

Syntax element:	Description:
-a	Refresh all types of configuration.
-n	Refresh nailed profiles configuration.
-p	Refresh address pools configuration.
-r	Refresh static routes configuration.
-t	Refresh terminal server configuration.

**Example:** RADIUS profiles can support up to 50 IP address pools. To refresh the address pool configuration in the MAX TNT:

```
admin> refresh -p
```

Refreshing remote config.

## Reset

**Description:** Resets the MAX TNT. When you reset the unit, it restarts and all active connections are terminated. All users are logged out and the default security level is reactivated. In addition, a system reset can cause a WAN line to temporarily be shut down due to momentary loss of signaling or framing information. After a reset, the MAX TNT runs POST (power-on self tests).

**Permission level:** Update

Usage: reset [-f]

Syntax element:	Description:
-f	Force a reset without prompting for confirmation.

**Example:** To reset the unit:

admin> **reset** 

See Also: NVRAM

# Rlogin

Description: Opens a login session across the network with the specified host.

**Permission level:** Diagnostic

Usage: rlogin [ -1 user -ec ] host-name

Syntax element:	Description:
-l user	Log into the remote host using the specified user name.
-ec	Define an escape character other than the default tilde. The escape character can be used to log out of the session.
host-name	The name of a networked host.

**Example:** To login across the network to host-231:

admin> rlogin host-231

```
Password:
Last login: Wed Dec 18 10:31:36 from marcel.marceau
SunOS Release 4.1.4 (HOST-231-BQE) #1: Wed Sep 4 08:56:59 PDT 1996
host-231%
```

You can log out of the remote host by typing the escape sequence (tilde-dot). For example:

```
host-231% ~.
Connection closed.
```

Or, you can log out explicitly:

host-231% **logout** Connection closed.

If your user name is different on the MAX TNT and the remote host, you can specify a user name on the Rlogin command line. For example:

admin> rlogin -1 marcel host-231 Password:

If you wish, you can change the default escape character from a tilde to any other character.

See Also: Netstat, Ping, Telnet, Terminal-Server

#### Save

**Description:** Saves configuration information to a file. The file may reside on the hard disk of the PC you are using to issue commands to the MAX TNT or on a networked host. The file is saved in a format that can be loaded into the MAX TNT to restore a configuration. You can save the entire MAX TNT configuration, all profiles of a given type, or a specific profile. The Save command uses TFTP to transfer configuration across the network. To save the MAX TNT configuration on a remote host, you must have permissions in the specified directory.

#### Permission level: Update

Usage: save [ -a	-m ] target [ profile-type [ profile-index ] ]
Syntax element:	Description:
-a	Explicitly save all fields, even those with default values. If you do not specify this option, only fields whose values have been changed from the default are saved in the file.
-m	Use MIB tags instead of field and value names, and use profile-type numbers rather than profile-type text names.
target	<ul> <li>The destination of the file to be saved. These are valid specifications:</li> <li>network <i>host filename</i>— A network host name or IP address and the path to the file on that host.</li> <li>console— The PC you are using in a terminal session.</li> </ul>
profile-type	The type of profile to be read. Some profiles do not require an index specification.
profile-index	The profile index (the name or address that distinguishes a profile from others of the same type). To see profile indexes, use the Dir command.

**Example:** To save all Connection profiles to a file on the PC's hard disk, start the capture utility in your vt100 emulation software and then type:

```
admin> save console connection
; saving profiles of type CONNECTION
; profile saved Thu Jan 2 13:02:54 1997
new CONNECTION dallas
set active=yes
set ip-options remote-address=10.122.99.1/24
write -f
; profile saved Thu Jan 2 13:02:54 1997
new CONNECTION chicago
set active=yes
set dial-number=999
set ip-options remote-address=10.168.6.57/24
set ip-options routing-metric=2
set ppp-options send-auth-mode=chap-ppp-auth
set ppp-options send-password=*******
set ppp-options recv-password=*******
set mp-options base-channel-count=6
set mp-options minimum-channels=6
set mp-options maximum-channels=20
```

write -f

To save the file, stop the capture in your vt100 emulation software. To save the entire configuration to hard disk, start the capture utility in your vt100 emulation software and then type:

admin> save console
; saving all profiles
...

All configured profiles and parameters scroll to the capture buffer. When the entire configuration has been displayed, you'll see:

; ; ; all profiles saved

To save the file, stop the capture. To save a specific profile to a file on a network host:

```
admin> save network host-231 /users/marcel/ipglobal ip-g
configuration being saved to 10.65.12.231
file /users/marcel/ipglobal...save
admin>
```

To specify a profile type by its internal number when saving:

```
admin> save -m console system
; saving profiles of type SYSTEM
; profile saved Sat Mar 29 13:29:42 1997
new 3
set 1 = 1
set 2 = eng-lab-43
write -f
```

**Note:** If the first item following a New, Read, or Dir command is numeric, it is assumed to be a profile-type number.

See Also: Load, NVRAM

#### Set

**Description:** Sets a parameter's value or displays help text for a parameter in the current or specified context of the working profile. To save the new setting, you must write the working profile.

Permission level: System

```
Usage: set [param-name [param-index] [subprofile]...]=value | ?
```

Syntax element:	Description:
param-name	The name of the parameter in the current or specified context of the working profile.
param-index	A parameter index, which may be required for some complex or array parameters. See the Physical-Address example below.
subprofile	A subprofile name within the working profile. You can set a parame- ter in a subprofile without opening the subprofile by specifying its name on the command line.
value	A legal parameter value.
?	A question-mark as an argument to the Set command displays help text about the specified parameter.

**Example:** To display help about a T1 line's physical address:

```
admin> read t1 {1 2 1}
T1/{ shelf-1 slot-2 1 } read
admin> list
physical-address*={ shelf-1 slot-2 1 }
line-interface={ no d4 ami eligible middle-priority inband wink-start
```

```
+
```

```
admin> set physical-address slot ?
slot: The number of the slot that the addressed physical device resides
on. Enumerated field, values:
any-slot: Special value used to specify 'any' slot.
slot-1: Slot 1.
slot-2: Slot 2.
slot-3: Slot 3.
slot-4: Slot 4.
slot-5: Slot 5.
slot-6: Slot 6.
slot-7: Slot 7.
slot-8: Slot 8.
slot-9: Slot 9.
slot-10: Slot 10.
slot-11: Slot 11.
slot-12: Slot 12.
slot-13: Slot 13.
slot-14: Slot 14.
slot-15: Slot 15.
slot-16: Slot 16.
controller: The shelf-controller pseudo-slot.
```
```
To open the Line-Interface subprofile and set the phone number for channel 1:
```

```
admin> list line
enabled=no
frame-type=d4
encoding=ami
clock-source=eligible
clock-priority=middle-priority
signaling-mode=inband
robbed-bit-mode=wink-start
switch-type=att-pri
nfas-id=0
call-by-call=0
data-sense=normal
idle-mode=flag-idle
FDL=none
front-end-type=dsx
DSX-line-length=1-133
CSU-build-out=0-db
channel-config=[ { switched-channel 9 "" { any-shelf any-slot 0 } 0 } +
maintenance-state=no
admin> set channel 1 phone=5551212
admin> write
T1/{ shelf-1 slot-2 1 } written
```

See Also: List, New, Read, Write

#### Show

Description: Displays information about installed slot cards and their status.

Permission level: System

Usage: show shelf-number [ slot-number [ item-number ] ]

Syntax element:	Description:
shelf-number	The number of a MAX TNT shelf.
slot-number	The number of an expansion slot in the specified shelf (1–16).
item-number	The number of a specific item (device or channel) on the slot card.

**Example:** To see all installed expansion modules on shelf 1:

```
admin> show 1
```

{	shelf-1	slot-1 0 }	UP	8t1-card
{	shelf-1	slot-11 0 }	UP	48modem-56k-card
{	shelf-1	<pre>slot-12 }</pre>	OCCUPIED	
{	shelf-1	slot-14 0 }	UP	48modem-card
{	shelf-1	<pre>slot-15 }</pre>	OCCUPIED	

The output includes the address of each slot in which an expansion slot card is installed, the status of the card, and the type of card installed. The status can be one of the following:

- UP (normal operational mode)
- DOWN (not in an operational mode)
- POST (the devices in the card are running power-on self tests)
- LOAD (the card is loading code as part of coming up)
- RESET (the card is being reset)
- NONE (the card has been swapped out, but its configuration remains in flash space)
- OCCUPIED (the card is using two slots)

To display information about the HDLC card in slot 3:

3			
slot-3 0	}	RESET	192hdlc-card
slot-3 1	}		hdlc-1
slot-3 2	}		hdlc-2
slot-3 3	}		hdlc-3
slot-3 4	}		hdlc-4
slot-3 5	}		hdlc-5
slot-3 6	}		hdlc-6
	3 slot-3 0 slot-3 1 slot-3 2 slot-3 3 slot-3 4 slot-3 5 slot-3 6	<pre>3 slot-3 0 } slot-3 1 } slot-3 2 } slot-3 3 } slot-3 4 } slot-3 5 } slot-3 6 }</pre>	<pre>3 slot-3 0 } RESET slot-3 1 } slot-3 2 } slot-3 3 } slot-3 4 } slot-3 5 } slot-3 6 }</pre>

See Also: Device, HDLC, Modem, Slot, T1channels

### Slot

**Description:** Changes the administrative state of a slot card, forcing a state change (up or down) or temporarily removing the card without losing its configuration.

#### Permission level: Diagnostic

Usage: slot [ -option [ [ shelf-number ] slot-number ] ]

Syntax element:	Description:
-u	Bring up the specified slot card.
-d	Bring down the specified slot card.
-r	Delete the profiles for a card that has been removed.
-t	Toggle module debug level.
-?	Display a usage summary.
shelf-number	The number of a MAX TNT shelf.
slot-number	The number of an expansion slot in the specified shelf $(1-16)$

**Example:** To bring up the expansion module in slot 5:

admin> **slot -u 5** slot 1/5 state change forced

When a card has been swapped out, it shows up with a status of NONE in the Show command output. For example:

```
admin> show 1 13
Shelf 1 ( standalone ):
  { shelf-1 slot-13 0 }
                              NONE
                                         8t1-card:
    { shelf-1 slot-13 1 }
                                          t1-line-1
    { shelf-1 slot-13 2 }
                                          t1-line-2
    { shelf-1 slot-13 3 }
                                          t1-line-3
    \{ \text{ shelf-1 slot-13 } 4 \}
                                          t1-line-4
    { shelf-1 slot-13 5 }
                                          t1-line-5
    { shelf-1 slot-13 6 }
                                          t1-line-6
    { shelf-1 slot-13 7 }
                                          t1-line-7
    { shelf-1 slot-13 8 }
                                           t1-line-8
```

The NONE status indicates that the card was removed but that its profiles have been saved. The MAX TNT remembers that a card was in that slot and saves its profiles until a card of a different type is installed in the same slot, or until the administrator types:

admin> **slot -r 13** slot 1/13 removed

In either of these cases, all the old profiles associated with the slot are cleaned up (deleted), and, in the case of a different type of card being inserted, appropriate new profiles are created.

See Also: Device, HDLC, Open, Modem, Show, T1channels

# Status

**Description:** Displays the status windows. The content of the windows can be configured to show connection, line, or log message information. See the *MAX TNT Network Configuration Guide* for details.

Permission level: System

Usage:	status	[on	off]
--------	--------	-----	------

Syntax element:	Description:		
on	Display the status windows.		
off	Hide the status windows.		

**Example:** To display status windows:

admin> status Or, admin> status on To hide the windows: admin> status Or, admin> status off

See Also: Connection, Line, Log, View

# T1channels

Description: Displays administrative information about T1 channels.

Permission level: System

Usage: tlchannels -option

Syntax element:	Description:
-a	Display information about all available T1 channels.
-d	Display information about disabled T1 channels.
-c	Display information about all possible T1 channels (all channels on all installed T1 cards).
-i	Display information about all T1 channels that are currently in use.

**Example:** To display information about all available T1 channels:

```
admin> t1 -a
```

T1 channels available for use:

									(dv0p	dvUpSt	dvRq	sAd	m)
Channel	{	{	1	13	1	}	1	}	(UP	Idle	UP	UP	)
Channel	{	{	1	13	1	}	2	}	(UP	Idle	UP	UP	)
Channel	{	{	1	13	1	}	3	}	(UP	Idle	UP	UP	)
Channel	{	{	1	13	1	}	4	}	(UP	Idle	UP	UP	)
Channel	{	{	1	13	1	}	5	}	(UP	Idle	UP	UP	)
Channel	{	{	1	13	1	}	6	}	(UP	Idle	UP	UP	)
Channel	{	{	1	13	1	}	7	}	(UP	Idle	UP	UP	)
Channel	{	{	1	13	1	}	8	}	(UP	Idle	UP	UP	)
Channel	{	{	1	13	1	}	9	}	(UP	Idle	UP	UP	)
Channel	{	{	1	13	1	}	10	}	(UP	Idle	UP	UP	)
Channel	{	{	1	13	1	}	11	}	(UP	Idle	UP	UP	)

To see which channels (if any) are disabled:

```
admin> t1 -d
Disabled T1 channels:
```

									(dv0p	dvUpSt	dvRq	sAd	m)
Channel	{	{	1	13	1	}	12	}	(Down	Idle	UP	UP	)
Channel	{	{	1	13	1	}	13	}	(Down	Idle	UP	UP	)
Channel	{	{	1	13	1	}	14	}	(Down	Idle	UP	UP	)

To display all T1 channels known to the system:

```
admin> t1 -c
All T1 channels:
```

					(dv0p	dvUpSt	dvRq	sAdr	n)
{	{	1 13	1 }	1 }	(UP	Idle	UP	UP	)
{	{	1 13	1 }	2 }	(UP	Idle	UP	UP	)
{	{	1 13	1 }	3 }	(UP	Idle	UP	UP	)
{	{	1 13	1 }	4 }	(UP	Idle	UP	UP	)
{	{	1 13	1 }	5 }	(UP	Idle	UP	UP	)
{	{	1 13	1 }	6 }	(UP	Idle	UP	UP	)
{	{	1 13	1 }	7 }	(UP	Idle	UP	UP	)
{	{	1 13	1 }	8 }	(UP	Idle	UP	UP	)
{	{	1 13	1 }	9 }	(UP	Idle	UP	UP	)
	$\{ \{ \{ \{ \{ \{ \{ \} \} \} \} \} \} \}$	$\{ \ \{ \ \{ \ \{ \ \{ \ \{ \ \{ \ \{ \ \{ \ \{ \$	$\left\{\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\left\{ \begin{array}{ccccc} \left\{ & 1 & 13 & 1 \\ \left\{ & \left\{ & 1 & 13 & 1 \\ \left\{ & \left\{ & 1 & 13 & 1 \\ \right\} \\ \left\{ & \left\{ & 1 & 13 & 1 \\ \left\{ & \left\{ & 1 & 13 & 1 \\ \right\} \\ \left\{ & \left\{ & 1 & 13 & 1 \\ \left\{ & \left\{ & 1 & 13 & 1 \\ \right\} \\ \left\{ & 1 & 13 & 1 \\ \left\{ & 1 & 13 \\ \left\{ & 1 & $	$\left\{ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \left\{ \begin{array}{cccccccccccccccccccccccccccccccccccc$	(dvOp       dvUpSt         {       1       1       1       (UP       Idle         {       1       13       1       2       (UP       Idle         {       1       13       1       2       (UP       Idle         {       1       13       1       3       (UP       Idle         {       1       13       1       4       (UP       Idle         {       1       13       1       5       (UP       Idle         {       1       13       1       5       (UP       Idle         {       1       13       1       6       (UP       Idle         {       1       13       1       7       (UP       Idle         {       1       13       1       8       (UP       Idle         {       1       13       1       9       (UP       Idle	(dvOp       dvUpSt       dvRq         (       1       13       1       )       (UP       Idle       UP         (       1       13       1       )       2       )       (UP       Idle       UP         (       1       13       1       )       2       )       (UP       Idle       UP         (       1       13       1       )       3       )       (UP       Idle       UP         (       1       13       1       )       4       )       (UP       Idle       UP         (       1       13       1       )       5       )       (UP       Idle       UP         (       1       13       1       )       6       )       (UP       Idle       UP         (       1       13       1       )       7       )       (UP       Idle       UP         (       1       13       1       )       8       )       (UP       Idle       UP         (       1       13       1       )       9       )       (UP       Idle       UP	(dvOp       dvUpSt       dvRq       sAdr         {       1       1       1       (UP       Idle       UP       UP         {       1       1.3       1       2       (UP       Idle       UP       UP         {       1       1.3       1       2       (UP       Idle       UP       UP         {       1       1.3       1       3       (UP       Idle       UP       UP         {       1       1.3       1       4       (UP       Idle       UP       UP         {       1       1.3       1       5       (UP       Idle       UP       UP         {       1       1.3       1       5       (UP       Idle       UP       UP         {       1       1.3       1       6       (UP       Idle       UP       UP         {       1       1.3       1       7       (UP       Idle       UP       UP         {       1       1.3       1       8       (UP       Idle       UP       UP         {       1       1.3       1       9       (UP       Idle

Channel { { 1 13 1 } 10 } (UP Idle UP UP ) Channel { {  $1 \ 13 \ 1 \ } \ 11$  } (UP Idle UP UP ) Channel { { 1 13  $1 \} 12 \}$ (Down Idle UP UP ) Channel { { 1 13 1 } 13 } (Down Idle UP UP ) Channel { { 1 13 1 } 14 } (Down Idle UP UP ) [More? <ret>=next entry, <sp>=next page, <^C>=abort] To display information about which T1 channels are in use: admin> t1 -i T1 channels allocated/in-use: (dvOp dvUpSt dvRq sAdm) Channel { { 1 13 1 } 15 } (UP Busy UP UP ) Channel { { 1 13 1 } 16 } (UP Busy UP UP ) Channel { { 1 13 1 } 17 } (UP Busy UP UP ) Channel { { 1 13 1 } 18 } (UP Busy UP UP ) Channel { { 1 13 1 } 19 } UP (UP Busy UP ) Channel { { 1 13 1 } 20 } (UP Busy UP UP ) Channel { { 1 13 1 } 21 } (UP Busy UP UP )

See Also: Line, Show, Slot

# T1-Stats

Description: Reports DS1-level line errors on T1 and T3 cards.

Permission level: Diagnostic

Usage: t1-stats [ -c ] line

Syntax element:	Description:
-c	Display statistics for the line, or reset statistics to 0 (zero).
line	Line on the card.

**Example:** First, open a session with the installed card by using the Open command. For example, to open a session with a card in shelf 1, slot 13:

```
admin> open 1 13
```

To view DS1-level statistics on the first line on the card:

```
t1-1/13> t1-stats 1
Line 1:
CRC Errors: 0
Frame Slips: 8
Framing Bit Errors: 0
Out of Frame Events: 0
Line Code Violations: 0
```

To view and reset the statistics to zero on line 2:

```
t1-1/13> t1-stats -c 2
Line 2:
CRC Errors: 2
Frame Slips: 3
Framing Bit Errors: 0
Out of Frame Events: 0
Line Code Violations: 3
Statistics cleared.
```

The output contains the following fields:

- CRC errors indicate data corruption in the signal.
- Frame slips occur when the MAX TNT receives T1 data at a greater or less frequency than the internal line clock. In the process of realigning itself to the transmitter, the MAX TNT can skip or repeat a frame.
- Framing bit errors relate to T1 framing, which requires that certain bit positions (known as framing bits) have a fixed value in the signal. The framing bits enable the MAX TNT to determine where frames begin and end. A framing bit error indicates that the MAX TNT detected a framing bit that was incorrect.
- Out of Frame Events indicates that the MAX TNT no longer detects a framing pattern in the receiving signal, or detects a pattern at a different relative offset than expected.
- Line Code Violations indicate that the MAX TNT detected either a Bipolar Violation or Excessive Zeros, indicating that one of the low-level T1 rules for encoding data was violated in the received signal.
- The Statistics cleared message at the end of the display indicates that the statistics have been reset to 0 (zero), because the command included the -c option.

# Telnet

Description: Opens a Telnet session across the network to the specified host.

**Permission level:** Diagnostic

Usage: telnet [-a | -b | -t] [-l[e] | -r[e]] host-name [port-number]

Syntax element:	Description:
-a	(ASCII mode) Standard 7-bit mode. In 7-bit mode, bit 8 is set to 0 (zero); 7-bit Telnet is also known as NVT (Network Virtual Terminal) ASCII. This is the default if no other mode is specified.
-b	(Binary mode) The MAX TNT attempts to negotiate the Telnet 8-bit binary option with the server at the remote end. You can run X-Modem and other 8-bit file transfer protocols using this mode.
-t	(Transparent mode) You can send and receive binary files without having to be in Binary mode. You can run the same file transfer pro- tocols available in Binary mode.
<b>-l</b> [e]	(Local echo) The line that is echoed on your terminal screen as it is typed is not actually transmitted until a carriage return is entered.
<b>-r</b> [e]	(Remote echo) Turn local echo off.
host-name	The IP address or DNS name of a networked host.
port-number	A port number for Telnet sessions. The default port is 23.

**Example:** To open a Telnet session to host-231:

```
admin> telnet host-231
```

```
Connecting to host-231 (10.65.12.231)...
Escape character is '^]'
Connected
```

You can also open a session by invoking the Telnet program and open a session or use any of the following Telnet commands:

admin> telnet

telnet> ?	
?	Displays this information.
help	и и и
open	Connect to a site.
quit	Quit Telnet.
close	Close current Telnet connection.
send	Send Telnet command. Type 'send ?' for help.
set	Set special char. Type 'set ?' for help.

**Note:** During an open Telnet connection, type Ctrl-] to display the telnet> prompt and the Telnet command-line interface. Any valid Telnet command returns you to the open session. Note that Ctrl-] does not function in binary mode Telnet. If you log into the MAX TNT by Telnet, you might want to change its escape sequence from Ctrl-] to a different setting.

See Also: Ping, Rlogin

## **Terminal-Server**

Description: Invokes terminal server mode, which has its own command interface.

**Permission level:** Termserv

Usage: terminal-server

**Example:** To enter terminal server mode and display the list of available commands: admin> terminal-server

\*\* Ascend TNT Terminal Server \*\*

Display help information
11 11 11
Closes terminal server session
11 11 11 11
Go to local mode
remote <station></station>
Set various items. Type 'set ?' for help
Show various tables. Type 'show ?' for help
Manage IP routes. Type 'iproute ?' for help
<pre>telnet [ -a -b -t ] <host-name> [ <port-number> ]</port-number></host-name></pre>
tcp <host-name> <port-number></port-number></host-name>
ping <host-name></host-name>
Trace route to host. Type 'traceroute -?' for help
rlogin [ -l user -ec ] <host-name></host-name>

To exit terminal server mode: ascend% **quit** 

admin>

See Also: Ping, Rlogin, Telnet

# Traceroute

**Description:** Traces the route an IP packet follows by launching UDP probe packets with a low TTL (Time-To-Live) value and then listening for an ICMP "time exceeded" reply from a router. Probes start with a TTL of one and increase by one until the MAX TNT either the destination host or the maximum TTL is reached.

Three probes are sent at each TTL setting. The second line of command output shows the address of the router and round trip time of each probe. If the probe answers come from different gateways, the address of each responding system will be printed. If there is no response within a 3 second timeout interval, the command output is an asterisk.

The destination host isn't supposed to process the UDP probe packets, so the destination port is set to an unlikely value, such as 33434. When the packets reach the destination host, it sends back ICMP "port unreachable" message.

#### Permission level: Diagnostic

Usage: traceroute [-options] host-name [datasize]

Syntax element:	Description:
-n	Print hop addresses numerically rather than symbolically and numerically (this eliminates a nameserver address-to-name lookup for each gateway found on the path).
-v	Verbose output. Received ICMP packets other than Time Exceeded and ICMP Port Unreachable are listed.
-m max_ttl	Set the maximum time-to-live (maximum number of hops) used in outgoing probe packets. The default is 30 hops.
-p port	Set the base UDP port number used in probes. Traceroute hopes that nothing is listening on any of the UDP ports from the source to the destination host (so an ICMP Port Unreachable message will be returned to terminate the route tracing). If something is listening on a port in the default range, this option can be used to pick an unused port range. The default is 33434.
-q nqueries	Set the maximum number of queries for each hop. The default is 3.
-w waittime	Set the time to wait for a response to a query. The default is 3 seconds.
hostname	The IP address or DNS name of a networked host.
datasize	Set the size of the data field of the UDP probe datagram sent by Traceroute. The default is 0. This results in a datagram size of 38 bytes (a UDP packet carrying no data).

**Example:** To trace the route to host-231:

#### admin> traceroute host-231

traceroute to host-231 (10.65.12.231), 30 hops max, 0 byte packets 1 host-231.abc.com (10.65.12.231) 0 ms 0 ms 0 ms

To trace the route to host-231 and reset the maximum TTL to 60 hops:

```
admin> traceroute -m 60 host-231
traceroute to host-231 (10.65.12.231), 60 hops max, 0 byte packets
1 host-231.abc.com (10.65.12.231) 0 ms 0 ms 0 ms
```

The following annotations may appear after the time field:

- !H (Host reached.)
- !N (Network unreachable.)
- ! P (Protocol unreachable.)
- !S (Source route failed. This should not occur and may indicate that there is a problem with the associated device.)
- !F (Fragmentation needed. This should not occur and may indicate that there is a problem with the associated device.)
- !h (Communication with the host is prohibited by filtering.)
- !n (Communication with the network is prohibited by filtering.)
- !c (Communication is otherwise prohibited by filtering.)
- !? (Indicates an ICMP sub-code. This should not occur.)
- !?? (Reply received with inappropriate type. This should not occur.)

See Also: Ping, Netstat

### Userstat

Description: Displays user session status.

Permission level: System

Usage: userstat

**Example:** To show user session status:

```
admin> userstat
SessionID Line/Chan Slot:Item Tx/Rx Rate Svc Address Username
228687860 1.01.02/01 1:03:01/01 56K/56K PPP 10.100.0.1 barney
228687861 1.02.03/02 1:04:02/00 28800/33600 PPP 10.168.6.24 jake
<end user list> 2 active user(s)
```

- The SessionID field shows the unique ID assigned to the session.
- The Line/Chan field shows the physical address (shelf.slot.line/channel) of the network port on which the connection was established, such as a T1 line/channel.
- The Slot:Item field shows shelf:slot:item/logical-item of the host port to which the call was routed (for example, modem, HDLC channel).
- The Tx/Rx Rate fields show the transmit and receive rate, respectively. Note that for modem connections, the transmit rate is set automatically to the receive rate, because modem cards do not support asymmetric data rate connections.
- The Svc field contains a three-letter code that shows the type of service in use for the session. The following are the possible values:
  - --- (The service is being negotiated.)
  - PPP (Point-to-Point Protocol)
  - SLP (Serial Line IP)
  - MPP (Multilink Protocol Plus)
  - MP (Multilink Protocol)
  - X25 (X.25)
  - FRY (Frame Relay)
  - EUR (EU-RAW)
  - EUI (EU-UI)
  - TLN (Telnet)
  - BTN (Binary Telnet)
  - TCP (raw TCP)
  - TRM (Terminal Server)
  - VCN (Virtual Connect)
  - D25 (D-channel X.25)
  - DTP (DTPT)

# Version

**Description:** Displays the current system software version.

Permission level: System

Usage: version

**Example:** To display the current system software version: admin> **version** 

Software version 1.2

# View

Description: Changes the information displayed in the top or bottom status window.

Permission level: System

Usage: view position status-type

Syntax element:	Description:
position	The window position may be TOP, BOTTOM, or LEFT, to indicate which area of the status window will be affected by the command.
status-type	<ul> <li>If the specified window position is TOP or BOTTOM, the type of status information that can be displayed in that position can be one of the following:</li> <li>general (general status information)</li> <li>log (the 32-message log buffer)</li> <li>line (T1 line and channel status)</li> </ul>
	<ul> <li>If the specified window position is LEFT, the type of status information that can be displayed in that position can be one of the following:</li> <li>connection (WAN connection status)</li> <li>session (management status)</li> </ul>

**Example:** To view session information:

admin> view left session

The left window position changes to show session information:



[ Next/Last Conn:<dn/up arw>, Next?Last Page: <pg dn/up>, Exit: <esc:

See Also: Connection, Line, Log, Status

# Whoami

**Description:** Displays the name of the User profile associated with the current session.

Permission level: User

Usage: whoami

**Example:** To display the name of your active User profile:

admin> **whoami** 

tommy

See Also: Auth

#### Write

**Description:** Validates the settings of the working profile and then writes it from the edit buffer to NVRAM.

**Note:** If the working profile has an index field (a parameter followed by an asterisk), that parameter must have a value or the write will not be allowed. If you modify a profile and do not use the Write command before reading another profile, the changes are lost.

**Permission level:** Update

```
Usage: write [ -f ]
```

Syntax element:	Description:
-f	Force the write without prompting for confirmation, overwriting an existing profile if one exists with the same index.

Example: To create a new Connection profile, modify it, and write it to NVRAM:

```
admin> new conn newyork
CONNECTION/newyork read
admin> list
station*=newyork
active=no
encapsulation-protocol=mpp
called-number-type=national
dial-number=""
clid=""
ip-options={ yes yes 0.0.0.0/0 0.0.0.0/0 7 100 255 no no 0 0.0.0.0 rou+
bridging-options={ 0 no }
session-options={ "" "" no 120 no-idle 120 "" }
telco-options={ ans-and-orig no off 1 no no 56k-restricted 0 "" "" no +
ppp-options={ "" "" stac 1524 no 600 600 }
mp-options={ 1 1 2 }
mpp-options={ "" quadratic transmit 1 1 15 5 10 70 }
tcp-clear-options={ "" 0 }
answer-options={ }
usrRad-options={ global 0.0.0.0 1646 "" 1 acct-base-10 }
calledNumber=""
admin> write
CONNECTION/newyork written
```

See Also: List, New, Read, Set

# **MAX TNT Profile and Parameter Reference**

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This chapter describes each MAX TNT parameter and profile in alphabetical order.

# Numeric

# 7-Even

**Description:** Specifies whether the MAX TNT uses 7-bit even parity on data it sends toward a dial-in terminal-server user.

Usage: Specify Yes or No. The default is No. Accept the default value for most applications.

- Yes enables the use of 7-bit even parity on data sent to dial-in terminal-server users.
- No specifies 8-bit communication, in which no parity bit applies.

Example: set 7-even=no

Dependencies: If terminal services are disabled, 7-Even does not apply.

Location: Terminal-Server > Modem-Configuration

See Also: Modem-Configuration

# Α

# Acct-Host

**Description:** Specifies a RADIUS accounting server for the MAX TNT to use for the connection.

**Usage:** Enter the IP address of a RADIUS accounting server. The default 0.0.0, which causes the MAX TNT to look for an accounting server at the address specified by the External-Auth profile.

Example: set acct-host=10.9.8.2/24

**Location:** Connection *station* > UsrRad-Options

**See Also:** Acct-ID-Base, Acct-Key, Acct-Port, Acct-Reset-Time, Acct-Server-N (N=1–3), Acct-Sess-Interval, Acct-Src-Port, Acct-Timeout, Acct-Type, UsrRad-Options

# Acct-ID-Base

**Description:** Specifies whether the numeric base of the RADIUS Acct-Session-ID attribute is 10 or 16. You can set Acct-ID-Base globally and for each connection.

Usage: Specify one of the following values:

- Acct-Base-10 (the default) specifies a decimal base.
- Acct-Base-16 specifies a hexadecimal base.

The value you specify controls how the MAX TNT presents the Acct-Session-ID attribute to the accounting server. For example, a base-10 session ID is presented as 1234567890, and a base-16 ID as 499602D2.

#### Example: set acct-id-base=acct-base-10

Dependencies: Consider the following:

- If Acct-Type does not specify RADIUS, Acct-ID-Base does not apply.
- Changing the value of Acct-ID-Base while accounting sessions are active results in inconsistent reporting between the Start and Stop records.
- The Acct-Session-ID attribute is defined in section 5.5 of the RADIUS accounting specification.

Location: Connection station > UsrRad-Options, External-Auth > Rad-Acct-Client

See Also: Acct-Key, Acct-Port, Acct-Reset-Time, Acct-Server-N (N=1-3), Acct-Sess-Interval, Acct-Src-Port, Acct-Timeout, Acct-Type, Rad-Acct-Client, UsrRad-Options

# Acct-Key

**Description:** Specifies a RADIUS or TACACS+ shared secret. A shared secret acts as a password between the MAX TNT and the accounting server.

**Usage:** Specify the text of the shared secret. The value you specify must match the value in the RADIUS clients file or in the TACACS+ configuration file.

#### Example: set acct-key=Ascend

**Dependencies:** If Acct-Type does not specify RADIUS or TACACSPlus, Acct-Key does not apply.

**Location:** Connection *station* > UsrRad-Options, External-Auth > Rad-Acct-Client, External-Auth > TacPlus-Acct-Client

**See Also:** Acct-ID-Base, Acct-Port, Acct-Reset-Time, Acct-Server-N (N=1–3), Acct-Sess-Interval, Acct-Src-Port, Acct-Timeout, Acct-Type, Rad-Acct-Client, TacPlus-Acct-Client, UsrRad-Options

#### Acct-Port

**Description:** Specifies the UDP destination port to use for external accounting requests. When using RADIUS accounting, you can set Acct-Port globally and for each connection.

**Usage:** Specify a UDP port number from 1 to 32767. The value must match the port number the accounting daemon uses. For RADIUS, the default in a Connection profile is 1646, and the default in the External-Auth profile is 0 (zero). For TACACS+, the default is 49.

Example: set acct-port=1500

**Dependencies:** If Acct-Type does not specify RADIUS or TACACSPlus, Acct-Port does not apply.

**Location:** Connection *station* > UsrRad-Options, External-Auth > Rad-Acct-Client, External-Auth > TacPlus-Acct-Client

**See Also:** Acct-ID-Base, Acct-Key, Acct-Reset-Time, Acct-Server-N (N=1–3), Acct-Sess-Interval, Acct-Src-Port, Acct-Timeout, Acct-Type, Rad-Acct-Client, TacPlus-Acct-Client

#### Acct-Reset-Time

**Description:** Specifies the number of seconds that must elapse before the MAX TNT returns to using the primary RADIUS accounting server.

**Usage:** Specify a number representing the number of seconds. The default is 0 (zero), which specifies that the MAX TNT does not return to using the primary RADIUS accounting server.

Example: set acct-reset-time=60

**Dependencies:** For Acct-Reset-Time to apply, you must specify at least one value for Acct-Server-*N*.

Location: External-Auth > Rad-Acct-Client

See Also: Acct-ID-Base, Acct-Key, Acct-Port, Acct-Server-N (N=1–3), Acct-Sess-Interval, Acct-Src-Port, Acct-Timeout, Acct-Type, Rad-Acct-Client

# Acct-Server-N (N=1-3)

**Description:** Specifies the IP addresses of up to three external accounting servers. The MAX TNT first tries to connect to server #1. If it receives no response, it tries to connect to server #2. If it still receives no response, it tries to connect to server #3. If the MAX TNT connects to a server other than the server #1, the MAX TNT continues to use that server until it fails to service requests, even if the first server has come online again.

**Usage:** Specify an IP address in dotted decimal notation. The default is 0.0.0, which indicates that no accounting server exists.

Example: set acct-server-1=10.2.3.4/24

**Dependencies:** If Acct-Type does not specify RADIUS or TACACSPlus, Acct-Server-*N* does not apply.

Location: External-Auth > Rad-Acct-Client, External-Auth > TacPlus-Acct-Client

See Also: Acct-ID-Base, Acct-Key, Acct-Port, Acct-Reset-Time, Acct-Sess-Interval, Acct-Src-Port, Acct-Timeout, Acct-Type, Rad-Acct-Client, TacPlus-Acct-Client

# Acct-Sess-Interval

**Description:** Specifies the number of seconds between RADIUS accounting reports that record the number of open sessions.

**Usage:** Specify a number of seconds from 0 to 65535. The default is 0 (zero), which turns off regular RADIUS reports on open sessions.

Example: set acct-sess-interval=15

**Dependencies:** If Acct-Type does not specify RADIUS, Acct-Sess-Interval does not apply. Acct-Sess-Interval has no effect unless the Ascend RADIUS daemon is running.

Location: External-Auth > Rad-Acct-Client

See Also: Acct-ID-Base, Acct-Key, Acct-Port, Acct-Reset-Time, Acct-Server-N (N=1-3), Acct-Src-Port, Acct-Timeout, Acct-Type, Rad-Acct-Client

# Acct-Src-Port

Description: Represents the UDP source port to use for RADIUS accounting.

**Usage:** Specify a value from 0 to 65535. The default is 0 (zero), which specifies that the MAX TNT selects the source port from the non-privileged port range (1024–2000).

Example: set acct-src-port=3278

**Dependencies:** The MAX TNT uses the source port number to demultiplex the RADIUS reply packets to the appropriate slot cards. The system uses a separate source port for each slot card and shelf controller. On the MAX TNT, the actual source port is the value of Acct-Src-Port plus the slot number, where the slot number is 0 (zero) for the shelf controller. So, if you set Acct-Src-Port to 1000, packets originating from the shelf controller have a source port value of 1000, while packets originating from slot 6 have a source port value of 1006.

 $\label{eq:location: External-Auth > Rad-Acct-Client, External-Auth > TacPlus-Acct-Client \\$ 

**See Also:** Acct-ID-Base, Acct-Key, Acct-Port, Acct-Reset-Time, Acct-Server-N (N=1–3), Acct-Sess-Interval, Acct-Timeout, Acct-Type, Rad-Acct-Client, TacPlus-Acct-Client

# Acct-Timeout

**Description:** Specifies the amount of time (in seconds) that the MAX TNT waits for a response to a RADIUS accounting request. You can set Acct-Timeout globally and for each connection.

If it does not receive a response within the specified time, the MAX TNT sends the accounting request to the next server specified by Acct-Server-*N*. If all RADIUS accounting servers are busy, the MAX TNT stores the accounting request and tries again at a later time. It can queue up to 154 requests.

**Usage:** Specify an integer from 1 to 10. The default for a Connection profile is 1. The default for the External-Auth profile is 0 (zero).

Example: set acct-timeout=5

**Dependencies:** If Acct-Type does not specify RADIUS, Acct-Timeout does not apply. You use Acct-Timeout only for RADIUS accounting. Because TACACS+ uses TCP, it has its own timeout method.

Location: Connection station > UsrRad-Options, External-Auth > Rad-Acct-Client

**See Also:** Acct-ID-Base, Acct-Key, Acct-Port, Acct-Reset-Time, Acct-Server-N (N=1–3), Acct-Sess-Interval, Acct-Src-Port, Acct-Type, Rad-Acct-Client, UsrRad-Options

# Acct-Type

**Description:** Specifies whether to use RADIUS accounting, TACACS+ accounting, or no accounting at all. You can specify accounting globally and for each connection.

**Usage:** To enable or disable accounting in the External-Auth profile, specify one of the following values:

- None (the default) disables accounting.
- RADIUS enables RADIUS accounting.
- TACACSPlus enabled TACACS+ accounting.

To set accounting policy for a particular connection, specify one of the following values in the Connection profile:

- Global (the default) specifies that the MAX TNT sends accounting information to one of the accounting servers specified by the External-Auth profile.
- Local specifies that the MAX TNT sends accounting information to the accounting server specified by Acct-Host in the Connection profile.
- Both specifies that the MAX TNT sends accounting information to both the global and local servers.

Example: set acct-type=acct-radius set acct-type=local

**Dependencies:** For Acct-Type to have any effect in a Connection profile, you must set Acct-Type to RADIUS or TACACSPlus in the External-Auth profile. If you set Acct-Type to RADIUS or TACACSPlus, you must specify at least one accounting server using Acct-Server-*N*, and that server must be running a version of the daemon that specifically supports accounting.

Location: Connection station > UsrRad-Options, External-Auth

**See Also:** Acct-ID-Base, Acct-Key, Acct-Port, Acct-Reset-Time, Acct-Server-N (N=1–3), Acct-Sess-Interval, Acct-Src-Port, Acct-Timeout, Rad-Acct-Client, TacPlus-Acct-Client, UsrRad-Options

# Action

**Description:** Specifies the action the MAX TNT takes when it finds a matching route in a route-filter specification.

Usage: Specify one of the following values:

- None (the default) specifies that the MAX TNT takes no action.
- Accept directs the MAX TNT to accept the route and allow it to affect the routing table.
- Deny directs the MAX TNT to deny the route and prohibit it from affecting the routing table.
- Add directs the MAX TNT to add the Add-Metric value to the route metric, and to accept the route.

**Location:** Filter > Input-Filters > Route-Filter *filter-name*, Filter > Output-Filters > Route-Filter *filter-name* 

**See Also:** Add-Metric, Input-Filters, Output-Filters, Route-Address, Route-Filter (subprofile), Route-Mask, Source-Address, Source-Address-Mask

# Activation

**Description:** Selects the signals at the serial WAN port that indicate that the Data Circuit-Terminating Equipment (DCE) is ready to connect. Flow control is always handled by the Clear To Send (CTS) signal.

Usage: Specify one of the following values:

- Static (the default) specifies that the MAX TNT does not use flow control signals because the DCE is always connected.
- DSR-Active specifies that the DCE raises the Data Set Ready (DSR) signal when it is ready.
- DCD-DSR-Active specifies that the DCE raises the DSR and Data Carrier Detect (DCD) signals when it is ready.

Example: set activation=static

**Location:** Swan {shelf-*N* slot-*N N*} > Line-Config

See Also: Call-Route-Info, Line-Config, Nailed-Group, Trunk-Group

#### Active

Description: Activates an interface. An active interface is available for use.

Usage: Specify Yes or No. The default is No.

- Yes activates the interface.
- No makes the interface unavailable for use.

#### Example: set active=yes

**Location:** Connection *station*, Connection *station* > IP-Options > OSPF-Options, Frame-Relay *fr-name*, IP-Interface {{shelf-N slot-N N} N} > OSPF

#### See Also: Enabled

#### Active-Enabled

**Description:** Disables or enables a user profile. A disabled profile is not available for use. A dash appears before each inactive profile.

Usage: Specify Yes or No. The default is No.

- Yes enables the user profile.
- No disables the user profile.

Example: set active-enabled=yes

Location: User name

See Also: User

## **Active-Route**

Description: Specifies whether the MAX TNT adds a static route to the routing table.

Usage: Specify Yes or No. The default is Yes.

- Yes activates the static route and causes the MAX TNT to add it to the routing table.
- No disables the route. An inactive route does not affect packet routing.

Example: set active-route=yes

Location: IP-Route name, IPX-Route name

**See Also:** ASE7-Adv, ASE-Tag, ASE-Type, Cost, Dest-Address, Dest-Network, Gateway-Address, Hops, Metric, Name, Preference, Private-Route, Profile-Name, Server-Node, Server-Socket, Server-Type, Third-Party, Ticks

## Add-Metric

Description: Specifies the metric to add to the route metric for a route filter.

**Usage:** Specify a number. The number you specify cannot result in a route metric greater than 15. The default is 0 (zero).

Dependencies: Add-Metric does not apply unless Action=Add.

**Location:** Filter > Input-Filters > Route-Filter *filter-name*, Filter > Output-Filters > Route-Filter *filter-name* 

**See Also:** Action, Input-Filters, Output-Filters, Route-Address, Route-Filter (subprofile), Route-Mask, Source-Address, Source-Address-Mask

### Add-Persistence

**Description:** Specifies the number of seconds that average line utilization (ALU) must persist beyond the Target-Utilization threshold before the MAX TNT adds bandwidth from available channels. When adding bandwidth, the MAX TNT adds the number of channels specified by Increment-Channel-Count.

Usage: Specify an integer from 1 to 300. The default is 5.

Example: set add-persistence=15

Dependencies: When the Seconds-History value is high, Add-Persistence has little effect.

Location: Answer-Defaults > MPP-Answer, Connection station > MPP-Options

**See Also:** Bandwidth-Monitor-Direction, Base-Channel-Count, Decrement-Channel-Count, Dynamic-Algorithm, Increment-Channel-Count, Minimum-Channels, Maximum-Channels, MPP-Answer, MPP-Options, Seconds-History, Sub-Persistence, Target-Utilization

# Address-Pool

**Description:** Specifies up to 128 IP address pools from which the MAX TNT can assign a caller an IP address. You can define up to 128 pools in a Connection profile, and up to 50 in a RADIUS user profile. Each pool may contain up to 255 addresses.

Usage: Specify a number from 0 to 128. The default is 0 (zero).

Example: set address-pool=5

**Dependencies:** If Address-Pool=0 and Assign-Address=Yes, the MAX TNT gets IP addresses from the first defined address pool.

Location: Connection station > IP-Options

See Also: Assign-Address, Assign-Count, IP-Options, Pool-Base-Address, Pool-Summary

# Admin-State

**Description:** A profile that stores the desired state and SNMP interface number of a device. The profile resides in NVRAM, so a physical device keeps the same interface number across system reset or power failures.

Usage: To make Admin-State the working profile and list its contents:

```
admin> read admin-state {1 9 36}
ADMIN-STATE/{ shelf-1 slot-9 36 } read
admin> list
device-address*={ shelf-1 slot-9 36 }
slot-type=48modem-card
snmp-interface=189
modem-table-index=0
desired-state=admin-state-up
```

**Dependencies:** At system startup, the MAX TNT reads the Admin-State profiles. If the addressed device is not present in the system and has been replaced by a device of another type, the MAX TNT deletes the profile associated with the device. The next time the system is reset or power cycles, the old device's SNMP interface number is made available for reassignment. Therefore, removing a slot card and leaving the slot empty does not free up

interface numbers. When you reinstall the slot card, the MAX TNT reassigns the same interface number.

In addition, removing a slot card and replacing it with a slot card of another type does not immediately free up the old interface numbers. New numbers are assigned to the new slot card, and the old numbers are made available at the next power cycle or system reset.

See Also: Desired-State, Device-Address, Modem-Table-Index, Slot-Type, SNMP-Interface

# ADSL-Cap

Description: A profile containing configuration settings for the RADSL card.

Usage: To make ADSL-Cap the working profile and list its contents:

```
admin> read adsl-cap {1 1 0}
ADSL-CAP/{ shelf-1 slot-1 0 } read
admin> list
name=""
physical-address*={ shelf-1 slot-1 0 }
enabled=no
line-config={ 0 0 static { any-shelf any-slot 0 } }
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> write
ADSL-CAP/{ shelf-1 slot-1 0 } written

See Also: Enabled, Line-Config, Name, Physical-Address

# **ADSL-Cap-Stat**

Description: A profile indicating the status of the RADSL line.

Usage: To make ADSL-Cap-Stat the working profile and list its contents:

```
admin> read adsl-cap-stat {1 1 0}
ADSL-CAP-STAT/{ shelf-1 slot-1 0 } read
admin> list
physical-address*={ shelf-1 slot-1 0 }
line-state=active
error-count=0
```

See Also: Error-Count, Line-State, Physical-Address

### **ADSL-Cap-Statistics**

Description: A profile that reports statistics about the RADSL interface.

Usage: To make ADSL-Cap-Statistics the working profile and list its contents:

```
admin> read adsl-cap-statistics {1 1 0}
ADSL-CAP-STATISTICS/{ shelf-1 slot-1 0 } read
admin> list
physical-address*={ shelf-1 slot-1 0 }
line-up-timer={ 0 0 0 }
rx-signal-present=yes
line-quality=15
up-down-cntr=1
self-test=passed
rs-errors=0
rs-corrected-errors=0
transmit-power=0
rx-attenuation=0
connection-sq=0
hdlc-rx-crc-error-cnt=0
```

See Also: Connection-SQ, HDLC-RX-CRC-Error-Cnt, Line-Quality, Line-Up-Timer, Physical-Address, RS-Corrected-Errors, RS-Errors, RX-Attenuation, RX-Signal-Present, Self-Test, Transmit-Power, Up-Down-Cntr

#### **ADSL-Cap-Status**

Description: A profile that indicates the status of the RADSL interface.

Usage: To make ADSL-Cap-Status the working profile and list its contents:

```
admin> read adsl-cap-status {1 1 0}
ADSL-CAP-STATUS/{ shelf-1 slot-1 0 } read
admin> list
physical-address*={ shelf-1 slot-1 0 }
if-group-index=0
unit-type=coe
dev-line-state=startup-handshake
up-stream-rate=784000
down-stream-rate=784000
major-firmware-ver=13
minor-firmware-ver=2
hardware-ver=2
up-stream-constellation=auto
down-stream-constellation=auto
down-stream-operational-baud=0
```

See Also: Dev-Line-State, Down-Stream-Constellation, Down-Stream-Operational-Baud, Down-Stream-Rate, Hardware-Ver, IF-Group-Index, Major-Firmware-Ver, Minor-Firmware-Ver, Physical-Address, Unit-Type, Up-Stream-Constellation, Up-Stream-Rate

# AIM-Enabled

Description: Indicates whether the unit enables AIM.

**Usage:** The AIM-Enabled setting is read only. Yes indicates that AIM is enabled. No indicates that AIM is not enabled.

Example: aim-enabled=yes

Location: Base

See Also: Countries-Enabled, D-Channel-Enabled, Data-Call-Enabled, Domestic-Enabled, Frame-Relay-Enabled, MAXLink-Client-Enabled, Modem-Dialout-Enabled, Multi-Rate-Enabled, R2-Signaling-Enabled, Switched-Enabled

# **AIS-Receive**

**Description:** Indicates whether the remote end is sending an Alarm Indication Signal (AIS) on the T1 line.

**Usage:** The AIS-Receive setting is read only. True indicates that the remote end is sending an AIS. False indicates that the remote end is not sending an AIS.

**Location:** T1-Stat {shelf-*N* slot-*N N*}

See Also: Yellow-Receive

#### Alarm-Enabled

**Description:** Specifies whether the MAX TNT traps alarm events and sends a traps-PDU (Protocol Data Unit) to the SNMP manager. The following alarm events are defined in the Ascend Enterprise MIB (see the Ascend Enterprise MIB for the most up-to-date information):

- coldStart (RFC-1215 trap-type 0) indicates that the MAX TNT sending the trap is reinitializing itself in such a way that the configuration of the SNMP manager or the unit might be altered.
- warmStart (RFC-1215 trap-type 1) indicates that the MAX TNT sending the trap is reinitializing itself in such a way that the configuration of the SNMP manager and the unit will not be altered.
- linkDown (RFC-1215 trap-type 2) indicates that the MAX TNT sending the trap recognizes a failure in one of the communication links represented in the SNMP manager's configuration.
- linkUp (RFC-1215 trap-type 3) indicates that the MAX TNT sending the trap recognizes that one of the communication links represented in the SNMP manager's configuration has come up.
- frDLCIStatusChange (RFC-1315 trap-type 1) indicates that the MAX TNT sending the trap recognizes that one of the virtual circuits (to which a DLCI number has been assigned) has changed state. The link has been created, invalidated, or toggled between the active and inactive states.
- eventTableOverwrite (Ascend trap-type 16) indicates that a new event has overwritten an unread event. The MAX TNTsends this trap only for systems that support Ascend's accounting MIB. Once sent, additional overwrites will not cause another trap to be sent until at least one table's worth of new events have occurred.

Usage: Specify Yes or No. The default is Yes.

- Yes specifies that the MAX TNT sends alarm-event traps to the host at Host-Address.
- No specifies that the MAX TNT does not send alarm-event traps.

#### Example: set alarm-enabled=yes

Location: Trap *host-name* 

See Also: Community-Name, Host-Address, Host-Name, Port-Enabled, Security-Mode

#### Allow-As-Client-DNS-Info

**Description:** Specifies whether the local DNS servers should be made accessible to PPP connections if the client DNS servers are unavailable.

A client DNS configuration defines DNS server addresses that the MAX TNT presents to WAN connections during IPCP negotiation. The client DNS configuration provides a way to protect your local DNS information from WAN users. Client DNS has two levels: a global configuration (in the IP-Global profile) that applies to all PPP connections, and a connection-specific configuration (in a Connection profile). The MAX TNT uses the global client addresses only if none are specified for the particular connection.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT makes the local DNS servers accessible to PPP connections if the client DNS servers are unavailable.
- No specifies that the MAX TNT does not make local DNS servers accessible to PPP connections if the client DNS servers are unavailable.

Example: set allow-as-client-dns-info=no

Location: IP-Global

See Also: Client-DNS-Addr-Assign, Client-DNS-Primary-Addr, Client-DNS-Secondary-Addr, Client-Primary-DNS-Server, Client-Secondary-DNS-Server, Connection, DNS-Primary-Server, DNS-Secondary-Server

#### Allow-Code

**Description:** Enables or disables permission to upload code to the MAX TNT system and use the following code-level commands:

- Format (to prepare a flash card for use)
- Fsck (to check file system on a flash card)

Usage: Specify Yes or No. The default is No.

- Yes grants permission to upload code to the MAX TNT.
- No denies permission to upload code to the MAX TNT.

#### Example: set allow-code=yes

#### Location: User name

See Also: Allow-Diagnostic, Allow-Password, Allow-System, Allow-Termserv, Allow-Update

# **Allow-Diagnostic**

**Description:** Enables or disables permission to use the following diagnostic commands:

- Callroute (Display the call routing database.)
- Clock-Source (Display clock-source statistics.)
- Device (Bring a device up or down.)
- Ether-Display (Display the contents of received Ethernet packets.)
- If-Admin (Administer an interface.)
- Nslookup (Perform a DNS lookup.)
- Open (Start a session with a slot card.)
- Ping (Ping the specified host.)
- Rlogin (Open an Rlogin session.)
- Slot (Administer a slot card.)
- Telnet (Open a Telnet session.)
- Traceroute (Display route statistics.)

Usage: Specify Yes or No. The default is No.

- Yes grants permission to use diagnostic commands.
- No denies permission to use diagnostic commands.

#### Example: set allow-diagnostic=yes

Location: User name

See Also: Allow-Code, Allow-Password, Allow-System, Allow-Termserv, Allow-Update

#### **Allow-Password**

Description: Enables or disables permission to view passwords.

Usage: Specify Yes or No. The default is No.

- Yes grants permission to view passwords.
- No denies permission to view passwords.

#### Example: set allow-password=yes

Location: User name

See Also: Allow-Code, Allow-Diagnostic, Allow-System, Allow-Termserv, Allow-Update

# Allow-System

Description: Enables or disables permission to use the following system commands:

- Clr-History (Clear the fatal-error history log.)
- Connection (Display the connection-status window.)
- Dir (List profiles and profile types.)
- Dircode (Show the contents of the PCMCIA card code.)
- Fatal-History (List the fatal-error history log.)
- Get (Display settings in a profile.)
- HDLC (Display HDLC-channel information.)
- IGMP (Display IGMP multicast statistics.)
- IPCache (Display IP-route caches.)
- Line (Display the line-status window.)
- List (List settings in the working profile.)
- Log (Display and control the event-log window.)
- Modem (Display modem information.)
- Netstat (Display the routing or interface tables.)
- New (Create a new profile.)
- Power (Display power-supply statistics.)
- Quiesce (Temporarily disable a modem or DS0 channel.)
- Read (Make the specified profile the working profile.)
- Refresh (Refresh the remote configuration.)
- Set (Specify a value.)
- Show (Show shelves, slots, or items.)
- Status (Display the system status or hide the status window.)
- T1channels (Display T1-channel information.)
- Version (Display software-version information.)
- View (Change the contents of a status window.)

Usage: Specify Yes or No. The default is No.

- Yes grants permission to use system commands.
- No denies permission to use system commands.

#### Example: set allow-system=yes

#### Location: User name

See Also: Allow-Code, Allow-Diagnostic, Allow-Password, Allow-Termserv, Allow-Update

### Allow-Termserv

Description: Enables or disables permission to use the terminal server and its commands.

Usage: Specify Yes or No. The default is No.

- Yes grants permission to use the terminal server and its commands.
- No denies permission to use the terminal server and its commands.

Example: set allow-termserv=yes

Location: User name

See Also: Allow-Code, Allow-Diagnostic, Allow-Password, Allow-System, Allow-Update

#### Allow-Update

**Description:** Enables or disables permission to use the following update commands:

- Date (Set the system date.)
- Delete (Delete the specified profile.)
- Load (Upload code or saved configuration to flash.)
- NVRAM (Clear the configuration and reboot the system.)
- Reset (Reboot the system.)
- Save (Save a profile for a future restore.)
- Write (Store the working profile and save changes.)

Usage: Specify Yes or No. The default is No.

- Yes grants permission to use update commands.
- No denies permission to use update commands.

Example: set allow-update=yes

Location: User name

See Also: Allow-Code, Allow-Diagnostic, Allow-Password, Allow-System, Allow-Termserv

### Analog-Encoding

**Description:** Specifies the encoding standard for digitized analog data. The MAX TNT uses the value you specify for all codecs on the MAX TNT.

Usage: Specify one of the following values:

- U-Law specifies U-Law encoding, the default for T1.
- A-Law specifies A-Law encoding, the default for E1.

Example: set analog-encoding=u-law

Location: System

See Also: E1, T1

### Answer-N(N=1-2)

Description: Specifies the phone number to match when routing by incoming phone number.

**Usage:** Specify a phone number. The default is null. You can enter up to 18 characters, and you must limit your specification to the following characters:

1234567890()[]!z-\*#|

Example: set answer-1=555-1212

**Location:** BRILT {shelf-*N* slot-*N N*} > Line-Interface

See Also: Line-Enabled

#### **Answer-Defaults**

**Description:** A profile containing system defaults for incoming calls. The MAX TNT uses the values in this profile until a caller passes authentication and the MAX TNT retrieves a copy of the caller's profile. In addition, you can use the Answer-Defaults profile to supply defaults for profiles retrieved from remote authentication servers.

Usage: To make Answer-Defaults the working profile and list its contents:

admin> **read answer** ANSWER-DEFAULTS read

```
admin> list
use-answer-for-all-defaults=yes
force-56kbps=no
profiles-required=yes
clid-auth-mode=ignore
ppp-answer={ yes any-ppp-auth yes 0 none 1524 no 600 600 }
mp-answer={ yes 1 2 }
mpp-answer={ yes 1 2 }
mpp-answer={ yes quadratic transmit 0 0 15 5 10 70 }
fr-answer={ yes }
tcp-clear-answer={ yes }
vl20-answer={ yes 256 }
ip-answer={ yes yes yes 1 }
session-info={ "" "" no 120 no-idle 120 0 }
framed-only=no
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> **write** ANSWER-DEFAULTS written

**See Also:** Area, CLID-Auth-Mode, Force-56kbps, FR-Answer, Framed-Only, IP-Answer, MP-Answer, MPP-Answer, Profiles-Required, Session-Info, TCP-Clear-Answer, Use-Answer-For-All-Defaults, V120-Answer

# **Answer-Delay**

**Description:** Specifies the number of milliseconds the MAX TNT waits before answering an incoming R2 call.

Usage: Specify a number from 0 to 65535. The default is 200.

Example: set answer-delay=500

**Location:** E1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Line-Interface, Signaling-Mode

#### **Answer-Originate**

**Description:** Specifies whether the MAX TNT enables incoming calls, outgoing calls, or both types of calls for the Connection profile.

Usage: Specify one of the following values:

- Ans-And-Orig (the default) specifies that the MAX TNT can both initiate and receive calls for the profile.
- Orig-Only specifies that the profile can be used only for outgoing calls. The MAX TNT will not answer calls from the profile.
- Ans-Only specifies that the profile can be used only for incoming calls. The MAX TNT will not initiate calls from the profile.

Example: set answer-originate=ans-and-orig

**Dependencies:** Answer-Originate does not apply to nailed-up call types.

Location: Connection *station* > Telco-Options

See Also: Call-Type, Telco-Options

#### **AppleTalk-Options**

Description: A subprofile containing settings for AppleTalk connections.

Usage: When Connection is the working profile:

```
admin> list appletalk-options
atalk-routing-enabled=no
atalk-static-ZoneName=""
atalk-static-NetStart=0
atalk-static-NetEnd=0
atalk-peer-mode=router-peer
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Connection station

See Also: Atalk-Peer-Mode, Atalk-Routing-Enabled

# Area

Description: Specifies the OSPF area the connection or interface belongs to.

**Usage:** Specify an area ID in dotted decimal notation. The default is 0.0.0.0, which represents the backbone network.

Example: set area=0.0.0.1

**Location:** Connection *station* > IP-Options > OSPF-Options, IP-Interface {{shelf-*N* slot-*N N*} *N*} > OSPF

See Also: Area-Type, ASE7-Adv, ASE-Tag, ASE-Type, IP-Options, OSPF, OSPF-ASE-Pref, OSPF-Options, OSPF-Pref, Third-Party

## Area-Type

Description: Specifies the type of OSPF area the connection or interface belongs to.

If your network is large, then the size of the database, the time required for route computation, and any related network traffic can all become excessive. You can partition an autonomous system (AS) into areas in order to provide hierarchical routing connected by a backbone.

The backbone area is special and always has the area number 0.0.0.0. Other areas have area numbers that are unique within the AS.

Usage: Specify one of the following values:

- Normal (the default) specifies that the router maintains information about external routes.
- Stub specifies that all external routes are summarized by a default route. A stub area is similar to a regular area, except that the routers do not enter external routes in the area's databases. For an area that has only one exit point, you need not maintain information about external routes.
- NSSA specifies an OSPF NSSA.

Example: set area-type=normal

Dependencies: You must set Area-Type consistently on all OSPF routers within the area.

**Location:** Connection *station* > IP-Options > OSPF-Options, IP-Interface {{shelf-*N* slot-*N N*} *N*} > OSPF

See Also: Area, ASE7-Adv, ASE-Tag, ASE-Type, IP-Options, OSPF, OSPF-ASE-Pref, OSPF-Options, OSPF-Pref, Third-Party

# ASE7-Adv

**Description:** Specifies whether or not area border routers convert an ASE type-7 to an ASE type-5 Link-State Advertisement (LSA).

Usage: Specify one of the following values:

- N/A (the default) specifies that the setting does not apply to your OSPF configuration.
- Advertise specifies that area border routers convert type-7 to type-5.
- DoNotAdvertise specifies that area border routers does not convert type-7 to type-5.

Dependencies: Consider the following:

- The value you specify applies only when the MAX TNT is routing within an OSPF NSSA (where Area-Type is set to NSSA on all interfaces running OSPF).
- ASE type-7s can be imported only from static route definitions.
- Third-party routing cannot be specified when ASE type-7s are advertised (per RFC 1587).

Location: IP-Route name

See Also: Area, Area-Type, ASE-Tag, ASE-Type, IP-Options, OSPF, OSPF-ASE-Pref, OSPF-Options, OSPF-Pref, Third-Party

# ASE-Tag

**Description:** Specifies the OSPF ASE tag for the link. The tag is attached to each external route.

Usage: Specify a 32-bit hexadecimal number. The default is c0:00:00:00.

Example: set ase-tag=c8000000

**Dependencies:** The ASE-Tag setting is not used by the OSPF protocol itself. Border area routers may use it to filter a record.

**Location:** Connection *station* > IP-Options > OSPF-Options, IP-Interface {{shelf-*N* slot-*N N*} *N*} > OSPF, IP-Route *name* 

See Also: Area, Area-Type, ASE7-Adv, ASE-Type, IP-Options, OSPF, OSPF-ASE-Pref, OSPF-Options, OSPF-Pref, Third-Party

# **ASE-Type**

Description: Specifies the OSPF ASE type of the Link-State Advertisement (LSA).

Usage: Specify one of the following settings:

- Type-1 (the default) specifies a type-1 external metric. This metric is expressed in the same units as the link-state metric.
- Type-2 specifies a type-2 external metric. This metric is considered larger than any link-state path. Using a type-2 external metric assumes that routing between autonomous systems is the major cost of routing a packet. A type-2 metric eliminates the need for conversion of external costs to internal link-state metrics.

#### Example: set ase-type=type-1

**Location:** Connection *station* > IP-Options > OSPF-Options, IP-Interface {{shelf-*N* slot-*N N*} *N*} > OSPF, IP-Route *name*
See Also: Area, Area-Type, ASE7-Adv, ASE-Tag, IP-Options, OSPF, OSPF-ASE-Pref, OSPF-Options, OSPF-Pref, Third-Party

## **Assign-Address**

**Description:** Enables or disables dynamic IP address assignment for incoming calls.

Usage: Specify Yes or No. The default is No.

- Yes enables the MAX TNT to assign dynamic IP addresses to incoming calls.
- No disables dynamic IP address assignment.

Example: set assign-address=yes

**Dependencies:** The MAX TNT must have at least one configured pool of IP addresses. You can configure the pool locally or in RADIUS.

Location: Answer-Defaults > IP-Answer

See Also: Assign-Count, Address-Pool, IP-Answer, Must-Accept-Address-Assign, Pool-Base-Address

# Assign-Count

**Description:** Specifies the number of contiguous host addresses contained in each of up to 128 address pools. The defined pool of addresses is available for dynamic assignment to PPP software during negotiation of a connection.

Usage: For each pool, specify a number from 0 to 254. The default is 0 (zero).

Example: set assign-count 3=254

Dependencies: The pool's initial address must specified by Pool-Base-Address.

Location: IP-Global

See Also: Assign-Address, Must-Accept-Address-Assign, Pool-Base-Address, Pool-Summary

## Atalk-Peer-Mode

Description: Specifies whether the connection uses AppleTalk routing or proxy ARP.

Usage: Specify one of the following values:

- Router-Peer (the default) specifies a routed connection.
- Dialin-Peer specifies that the connection uses proxy ARP, such as when a modem user dials into the MAX TNT.

Example: set atalk-peer-mode=dialin-peer

Dependencies: For Atalk-Peer-Mode to apply, AppleTalk routing must be enabled.

**Location:** Connection *station* > AppleTalk-Options

See Also: AppleTalk-Options, Atalk-Routing-Enabled

# Atalk-Routing-Enabled

Description: Specifies whether AppleTalk routing is enabled for the connection.

Usage: Specify Yes or No. The default is No.

- Yes enables AppleTalk routing for the connection.
- No disables AppleTalk routing for the connection.

#### Example: set atalk-routing-enabled=yes

**Location:** Connection *station* > AppleTalk-Options

See Also: AppleTalk-Options, Atalk-Peer-Mode

#### Auth-Attribute-Type

Description: Specifies the type of attributes required for session matching.

Usage: Specify one of the following values:

- Rad-Serv-Attr-Any (the default) specifies that the first RADIUS attribute is used for session matching.
- Rad-Serv-Attr-Key specifies that the session key is used for session matching.
- Rad-Serv-Attr-All specifies that all attributes must match for session matching.

Example: set auth-attribute-type=rad-serv-attr-any

Dependencies: If Rad-Serv-Enable is set to No, Auth-Attribute-Type does not apply.

Location: External-Auth > Rad-Auth-Server

See Also: Rad-Auth-Server, Rad-Serv-Enable

# Auth-Client N (N=1-9)

**Description:** Specifies up to nine IP addresses of RADIUS clients permitted to issue RADIUS commands for session termination and filter changes. Currently, a maximum of nine clients is supported.

**Usage:** Specify an IP address in dotted decimal notation. The address 255.255.255.255 indicates that any client can issue RADIUS commands. The default is 0.0.0.0, which indicates that no client can issue RADIUS commands.

Example: set auth-client 1=10.2.3.4

**Dependencies:** If Rad-Serv-Enable is set to No, Auth-Client does not apply. In addition, if you do not supply a subnet mask using Auth-Netmask, the system supplies a default subnet mask based on the address class.

Location: External-Auth > Rad-Auth-Server

**See Also:** Auth-Key, Auth-Netmask N (N=1–9), Auth-Port, Auth-Server-N (N=1–3), Auth-Src-Port, Auth-Timeout, Rad-Auth-Server, Rad-Serv-Enable

# Auth-Frm-Adr-Start

**Description:** Specifies whether to send a second RADIUS Accounting Start record when the RADIUS Framed-Address value is assigned.

Usage: Specify Yes or No. The default is No.

- Yes enables the MAX TNT to send a second RADIUS Accounting Start record when the RADIUS Framed-Address value is assigned.
- No prevents the MAX TNT from sending a second RADIUS Accounting Start record.

#### Example: set auth-frm-adr-start=yes

Location: External-Auth > Rad-Auth-Client

See Also: Rad-Auth-Client

# Auth-Key

**Description:** Specifies an authentication key that appears in OSPF and external authentication configurations.

- For OSPF configurations, the value of Auth-Key is a 64-bit clear password inserted into the OSPF packet header. It is used by OSPF routers to allow or exclude packets from an area.
- For RADIUS, the value is a string of up to 22 characters. Because the MAX TNT can act both as a client to external servers and as a server responding to client commands, you can configure Auth-Key in both the Rad-Auth-Client and Rad-Auth-Server subprofiles.
- If the MAX TNT is acting as a TACACS or TACACS+ client, Auth-Key is a password that the MAX TNT supplies to the server.

**Usage:** Specify a string of up to nine characters (for OSPF), or up to 22 characters (for RADIUS). The default for OSPF is ascend0. The default for RADIUS is null. For security purposes, the string is hidden when Auth-Key is displayed.

#### Example: set auth-key=Ascend

Dependencies: For OSPF routing, Auth-Key does not apply if Authen-Type is None.

**Location:** Connection *station* > IP-Options > OSPF-Options, External-Auth > Rad-Auth-Client, External-Auth > Rad-Auth-Server, External-Auth > Tac-Auth-Client, External-Auth > TacPlus-Auth-Client, IP-Interface { shelf-*N* slot-*N N N* > OSPF

**See Also:** Authen-Type, Auth-Netmask N (N=1–9), Auth-Port, Auth-Server-N (N=1–3), Auth-Src-Port, Auth-Timeout, IP-Options, OSPF, OSPF-Options, Rad-Auth-Client, Rad-Auth-Server, Tac-Auth-Client, TacPlus-Auth-Client

# Auth-Netmask N (N=1-9)

**Description:** Specifies up to nine subnet masks. The MAX TNT matches each mask to the IP addresses of a RADIUS client permitted to issue RADIUS commands for session termination and filter changes.

Usage: Specify a subnet mask in dotted decimal notation. The default is 0.0.0.0.

Example: set auth-netmask 1=255.255.258.248

**Dependencies:** If Rad-Serv-Enable is set to No, or if no Auth-Client setting specifies an IP address, Auth-Netmask does not apply.

Location: External-Auth > Rad-Auth-Server

**See Also:** Auth-Client N (N=1–9), Auth-Key, Auth-Port, Auth-Server-N (N=1–3), Auth-Src-Port, Auth-Timeout, Rad-Auth-Server, Rad-Serv-Enable

# Auth-Pool

**Dependencies:** Enables or disables dynamic address assignment for RADIUS-authenticated IP-routing connections.

Usage: Specify Yes or No. The default is No.

- Yes enables the MAX TNT to assign dynamic IP addresses to RADIUS-authenticated IProuting connections.
- No prevents dynamic address assignment for RADIUS-authenticated IP-routing connections.

Example: set auth-pool=no

**Dependencies:** The RADIUS server must be configured with at least one pool of addresses for assignment, and must be running the Ascend daemon. If Auth-Type does not specify RADIUS, Auth-Pool does not apply.

Location: External-Auth > Rad-Auth-Client

See Also: Auth-Type, Rad-Auth-Client

# Auth-Port

**Description:** Specifies the UDP port to use for communication with the external authentication server. It must match the port specified for use in the server's configuration.

**Usage:** Specify a UDP port number. Make sure that the number you specify matches the value that the external authentication daemon uses on the server.

- If the MAX TNT is acting as a RADIUS, TACACS, or TACACS+ client, specify the UDP destination port to use for authentication. The default UDP port used by the RADIUS daemon is specified in the /etc/services file (UNIX). The default for TACACS or TACACS+ is 49.
- If the MAX TNT is acting as a RADIUS server, specify the UDP port to use for the accepting client requests. The default is 1700.

#### Example: set auth-port=1565

**Location:** External-Auth > Rad-Auth-Client, External-Auth > Rad-Auth-Server, External-Auth > Tac-Auth-Client, External-Auth > TacPlus-Auth-Client

**See Also:** Auth-Client N (N=1–9), Auth-Server-N (N=1–3), Rad-Auth-Client, Rad-Auth-Server, Tac-Auth-Client, TacPlus-Auth-Client

# Auth-Reset-Time

**Description:** Specifies the authentication timeout in seconds after which the MAX TNT returns to the primary RADIUS authentication server. The primary RADIUS authentication server is specified by Auth-Server-*N*.

**Usage:** Specify a number representing the number of seconds. The default is 0 (zero), which specifies that the MAX TNT does not return to using the primary RADIUS authentication server.

Example: set auth-reset-time=60

**Dependencies:** For Auth-Reset-Time to apply, you must specify at least one value for Auth-Server-*N*.

Location: External-Auth > Rad-Auth-Client

See Also: Auth-Server-N (N=1-3), Auth-Timeout, Rad-Auth-Client

# **Auth-Retries**

**Description:** Specifies the number of times the MAX TNT attempts to connect to a backup TACACS+ server.

**Usage:** Specify a number. The default is 0 (zero), which specifies that the MAX TNT does not attempt to connect to a backup TACACS+ server.

Example: set auth-retries=2

Location: External-Auth > TacPlus-Auth-Client

**See Also:** Auth-Key, Auth-Port, Auth-Server-N (N=1–3), Auth-Src-Port, Auth-Timeout-Time, TacPlus-Auth-Client

#### Auth-Rsp-Required

**Description:** Determines how the MAX TNT responds if an authentication request times out after a call has been CLID authenticated.

Usage: Specify Yes or No. The default is Yes.

- Yes specifies that the MAX TNT drops calls that have passed CLID authentication.
- No specifies that the MAX TNT allows CLID-authenticated connections even if there is no response form the external server.

#### Example: set auth-rsp-required=yes

**Dependencies:** For Auth-Rsp-Required to apply, CLID authentication must be in use, and CLID-Auth-Mode must be set to Required.

Location: External-Auth > Rad-Auth-Client

See Also: CLID, CLID-Auth-Mode, Rad-Auth-Client

# Auth-Send67

**Description:** Specifies whether the MAX TNT requires RADIUS attributes 6 (User-Service) and 7 (Framed-Protocol) in a RADIUS user profile when a user wants to initiate PPP.

Usage: Specify Yes or No. The default is No.

- Yes specifies that if a user wants to initiate PPP, his or her RADIUS profile must include attributes 6 and 7.
- No specifies that attributes 6 and 7 need not be present in a RADIUS user profile for a user to initiate PPP.

#### Example: set auth-send67=yes

 $\label{eq:location: External-Auth > Rad-Auth-Client} \textbf{Location: External-Auth > Rad-Auth-Client}$ 

See Also: Rad-Auth-Client

# Auth-Server-N (N=1-3)

Description: Specifies the IP address of an external authentication server.

**Usage:** The MAX TNT first tries to connect to server #1. If it receives no response, it tries to connect to server #2. If it receives no response, it tries server #3. If the MAX TNT connects to a server other than the server #1, it continues to use that server until it fails to service requests, even if the first server has come online again.

**Usage:** Specify an IP address in dotted decimal notation, separating the optional subnet mask value from the address with a forward slash character. The addresses must all point to servers of the same type, as specified by the Auth-Type setting. The default is 0.0.0.0, which indicates that no authentication server exists.

#### Example: set auth-server-1=10.2.3.4/24

**Location:** External-Auth > Rad-Auth-Client, External-Auth > Tac-Auth-Client, External-Auth > TacPlus-Auth-Client

See Also: Auth-Key, Auth-Port, Auth-Src-Port, Auth-Timeout, Auth-Type, Rad-Auth-Client, Tac-Auth-Client, TacPlus-Auth-Client

#### Auth-Sess-Interval

**Description:** Specifies the number of seconds between RADIUS authentication reports concerning the number of open sessions.

**Usage:** Specify a number of seconds from 0 to 65535. The default is 0, which turns off regular RADIUS reports on open sessions.

Example: set auth-sess-interval=15

Dependencies: Auth-Sess-Interval applies only if Auth-Type=RADIUS-Logout.

Location: External-Auth > Rad-Auth-Client

See Also: Auth-Type, Rad-Auth-Client

# **Auth-Session-Key**

Description: Enables or disables session-key assignments.

Usage: Specify Yes or No. The default is No.

- Yes enables session-key assignments.
- No disables session-key assignments.

Example: set auth-session-key=no

Dependencies: If Rad-Serv-Enable=No, Auth-Session-Key does not apply.

Location: External-Auth > Rad-Auth-Server

See Also: Rad-Serv-Enable

## Auth-Src-Port

Description: Represents the UDP source port to use for external authentication.

**Usage:** Specify a value from 0 to 65535. The default is 0 (zero), which specifies that the source port is selected from the non-privileged port range (1024–2000).

**Dependencies:** The MAX TNT uses the source port number to demultiplex the RADIUS reply packets to the appropriate slot cards. A separate source port is used for each slot card and shelf controller. On the MAX TNT, the actual source port is the value of Auth-Src-Port plus the slot number, where the slot number is 0 (zero) for the shelf controller. So, if Auth-Src-Port is set to 1000, packets originating from the shelf controller have a source port value of 1000, while packets originating from slot 6 have a source port value of 1006.

Location: External-Auth > Rad-Auth-Client, External-Auth > Tac-Auth-Client, External-Auth > TacPlus-Auth-Client

**See Also:** ,Auth-Key, Auth-Port, Auth-Server-N (N=1–3), Auth-Timeout, Auth-Type, Rad-Auth-Client, Rad-Auth-Server, Tac-Auth-Client, TacPlus-Auth-Client

# Auth-TS-Secure

**Description:** Acts as a flag to prevent access to the terminal-server interface when the RADIUS Login-Host value is not specified.

Usage: Specify Yes or No. The default is Yes.

- Yes specifies that the terminal-server must be secure. If the Login-Host is not specified, the MAX TNT drops the call.
- No specifies that if the Login-Host is not specified, the MAX TNT allows the dial-in connection access to the terminal-server interface.

Example: set auth-ts-secure=yes

Location: External-Auth > Rad-Auth-Client

See Also: Rad-Auth-Client

# Auth-Timeout

**Description:** Sets the number of seconds between retries to the external authentication server. The MAX TNT waits the specified number of seconds for a response to a RADIUS or TACACS authentication request. If it does not receive a response within that time, it times out and sends the authentication request to the next authentication server (for example, Auth-Server-2).

Usage: Specify an integer from 1 to 10. The default is 1.

Example: set auth-timeout=5

Dependencies: If Auth-Type=None, Auth-Timeout does not apply.

Location: External-Auth > Rad-Auth-Client, External-Auth > Tac-Auth-Client

See Also: Auth-Key, Auth-Server-N (N=1-3), Auth-Type, Rad-Auth-Client, Tac-Auth-Client

# Auth-Timeout-Time

**Description:** Specifies the number of seconds that must elapse before the MAX TNT attempts to connect to a backup TACACS+ server.

**Usage:** Specify a number representing the number of seconds. The default is 0 (zero), which specifies that the MAX TNT does not attempt to use a backup TACACS+ server.

Example: set auth-timeout-time=60

Location: External-Auth > TacPlus-Auth-Client

See Also: Auth-Key, Auth-Port, Auth-Retries, Auth-Server-N (N=1-3), Auth-Src-Port

# Auth-Type

**Description:** Specifies the type of external authentication server to access for incoming connections.

Usage: Specify one of the following values:

- None (the default) disables the use of an authentication server.
- TACACS specifies that the MAX TNT accesses a TACACS server. TACACS supports PAP, but not CHAP authentication.
- TACACSPlus specifies that the MAX TNT accesses a TACACS+ server. TACACS+ supports PAP, but not CHAP authentication. It also provides more extensive accounting statistics and a higher degree of control than TACACS authentication.
- RADIUS specifies that the MAX TNT accesses a RADIUS server. In a RADIUS query, the MAX TNT provides a user ID and password to the server. If the validation succeeds, the server sends back a complete profile. The profile specifies routing, packet filtering, destination-specific static routes, and usage restrictions for the user. RADIUS supports PAP and CHAP, and terminal-server validation.
- RADIUS-Logout is identical to RADIUS, except that when you select RADIUS-Logout, the MAX TNT sends a request to the RADIUS server to initiate logout when the session ends.

Example: set auth-type=radius

**Dependencies:** If Auth-Type is set to a value other than None, you must specify at least one authentication server address.

Location: External-Auth

See Also: Auth-Server-N (N=1-3)

# Authen-Type

Description: Specifies the type of authentication to use for validating OSPF packet exchanges.

Usage: Specify one of the following values:

- None specifies that routing exchanges are not authenticated. The 64-bit authentication field in the OSPF header may contain data, but it is not examined on packet reception. When you use this setting, the MAX TNT performs a checksum on the entire contents of each OSPF packet (other than the 64-bit authentication field) to ensure against data corruption.
- Simple (the default) requires that you specify a 64-bit value for Auth-Key. Each packet sent on a particular network must have the configured value in its OSPF header's 64-bit authentication field. Simple authentication is designed to prevent configuration errors from affecting the OSPF routing database. It is not designed for firewall protection.

#### Example: set authen-type=simple

**Location:** Connection *station* > IP-Options > OSPF-Options, IP-Interface {{shelf-*N* slot-*N N*} *N*} > OSPF

See Also: Auth-Key, IP-Options, OSPF, OSPF-Options

# Auto-Logout

**Description:** Specifies whether, on loss of Data Transmit Ready (DTR) from the serial port, to log out the current User profile and go back to default privileges.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT automatically logs out the current User profile if DTR is lost on the serial port.
- No specifies that the current User profile remains logged in.

#### Example: set auto-logout=yes

Location: Serial {shelf-*N* slot-*N N*}

See Also: Idle-Logout, User

# Auto-Telnet

**Description:** Causes the terminal server to interpret unknown commands as the name of a host for a Telnet session.

Usage: Specify Yes or No. The default is No.

- Yes specifies that a user can omit the keyword Telnet and specify a host name in order to initiate a Telnet session.
- No specifies that if a user types a host name at the terminal-server prompt, the MAX TNT rejects it as an unknown command.

Example: set auto-telnet=yes

Dependencies: When terminal services are disabled, Auto-Telnet does not apply.

Location: Terminal-Server > Terminal-Mode-Configuration > Telnet-Options

See Also: Telnet, Telnet-Options, Terminal-Mode-Configuration

# Aux-Send-Password

**Description:** Specifies the password the MAX TNT sends when it adds channels to an MP+ call that uses PAP-Token-CHAP authentication. The MAX TNT obtains authentication of the first channel of the MP+ call from the user's hand-held security card.

**Usage:** Enter the same password specified by Ascend-Receive-Secret in the RADIUS user profile for the MAX TNT.

Example: set aux-send-password=Ascend

**Dependencies:** For Aux-Send-Password to apply, the call must use MP+, and you must set Send-Auth-Mode=PAP-Token-CHAP.

Location: Connection station > MPP-Options

See Also: MPP-Options, Send-Password

# В

# **Back-To-Back**

**Description:** Indicates whether the E1 line is connected back-to-back with another Ascend unit, rather than with a DPNSS PBX.

Usage: Specify True or False. False is the default.

- True specifies that the E1 line is connected back-to-back with another Ascend unit.
- False specifies that the E1 line is connected with a DPNSS PBX.

Example: set back-to-back=false

Location: E1 {shelf-*N* slot-*N N*}

See Also: E1

# Backup

**Description:** Specifies the name of a backup Connection profile for a nailed-up connection. The profile serves as a backup if the remote device goes out of service. It is not intended to provide alternative lines for getting to a single destination.

**Usage:** Specify the name of a Connection profile. You can enter up to 32 characters. The default is null.

Example: set backup=newyork

Dependencies: Backup applies only when a link is nailed up.

Location: Connection station > Session-Options

See Also: Call-Type, Session-Options

#### **Bandwidth-Monitor-Direction**

**Description:** Specifies the direction in which the MAX TNT monitors link utilization for multilink PPP calls.

Usage: Specify one of the following values:

- None turns off bandwidth monitoring. The default is None.
- Transmit specifies that the MAX TNT monitors link utilization on transmitted packets only.
- Transmit-And-Receive specifies that the MAX TNT monitors link utilization in both directions.

#### Example: set bandwidth-monitor-direction=none

Location: Answer-Defaults > MPP-Answer, Connection station

**See Also:** Add-Persistence, Base-Channel-Count, Decrement-Channel-Count, Dynamic-Algorithm, Increment-Channel-Count, Minimum-Channels, Maximum-Channels, MPP-Answer, MPP-Options, Seconds-History, Sub-Persistence, Target-Utilization

Banner	
	Description: Specifies the terminal-server login banner.
	<b>Usage:</b> Specify the banner text. You can enter up to 84 alphanumeric characters. The default is ** Ascend Terminal Server **.
	Example: set banner="Welcome to the MAX TNT"
	Dependencies: If terminal services are disabled, Banner does not apply.
	Location: Terminal-Server > Terminal-Mode-Configuration
	<b>See Also:</b> Host-N (N=1–4), Remote-Configuration, Terminal-Mode-Configuration, Text-N (N=1–4)
Base	
2000	<b>Description:</b> A read-only profile that displays the software versions in use, enabled features, network interfaces, and other system information.
	Usage: To display the Base profile values:
	<pre>admin&gt; get base shelf-number=1 software-version=1 software-revision=0 software-level=E d-channel-enabled=yes aim-enabled=yes switched-enabled=yes multi-rate-enabled=yes frame-relay-enabled=yes maxlink-client-enabled=enabled data-call-enabled=yes r2-signaling-enabled=no serial-number=6201734 countries-enabled=511 domestic-enabled=yes</pre>
	domestlc-enabled=yes modem-dialout-enabled=yes

**See Also:** AIM-Enabled, Countries-Enabled, Data-Call-Enabled, D-Channel-Enabled, Domestic-Enabled, Frame-Relay-Enabled, MAXLink-Client-Enabled, Modem-Dialout-Enabled, Multi-Rate-Enabled, R2-Signaling-Enabled, Serial-Number, Shelf-Number, Software-Level, Software-Revision, Software-Version, Switched-Enabled

# **Base-Channel-Count**

**Description:** Specifies the number of channels the MAX TNT uses when setting up a connection. If the session uses MP (RFC 1990), Base-Channel-Count specifies the total number of channels to use for the call. If the session uses MP+, Base-Channel-Count specifies the initial number of channels to use for the call.

Usage: Specify a number from 0 (zero) to the value of Maximum-Channels. The default is 1.

Example: set base-channel-count=3

**Dependencies:** If the Base-Channel-Count value exceeds the Maximum-Channels value or falls below the Minimum-Channels value, an error results.

Location: Connection station > MP-Options

See Also: Maximum-Channels, Minimum-Channels, MP-Options

# **BER-Receive**

Description: Indicates whether the bit-error rate threshold has been reached.

**Usage:** The BER-Receive setting is read only. True indicates that the threshold has been reached. False indicates that the threshold has not been reached.

Location: T1-Stat {shelf-*N* slot-*N N*}

See Also: AIS-Receive, Yellow-Receive

## **Billing-Number**

Description: Specifies a telephone number that the MAX TNT uses for billing purposes.

**Usage:** Specify the billing number provided by the carrier. You can enter up to 24 characters. The default is null.

Example: set billing-number=510-555-1972

Dependencies: Consider the following:

- For nailed-up Frame-Relay datalink connections, Billing-Number does not apply.
- The MAX TNT uses the value you specify as a billing suffix or as the calling party number. For T1 robbed-bit lines, the MAX TNT uses the Billing-Number as a suffix appended to each phone number it dials for the call. For T1 PRI lines, the MAX TNT uses the Billing-Number value rather than the phone number ID to identify itself to the answering party.
- If the calling party uses the Billing-Number value instead of its phone number as its ID, the CLID used by the answering side is not the true phone number of the caller. This situation presents a security breach if you use CLID-Auth-Mode.
- If you specify a value for Billing-Number, there is no guarantee that the phone company will send it to the answering device.

Location: Connection *station* > Telco-Options, Frame-Relay *fr-name* 

See Also: CalledNumber, CLID, CLID-Auth-Mode, Telco-Options

# **BOOTP-Enabled**

**Description:** Specifies whether the MAX TNT uses BOOTP to get settings and check for a new software load.

Usage: Specify Yes or No. The default is No.

- Yes enables the MAX TNT to use BOOTP.
- No disables the use of BOOTP.

Example: set bootp-enabled=yes

Location: IP-Global

See Also: SLIP-BOOTP

# **Bottom-Status**

Description: Specifies the default contents of the bottom-right portion of the status window.

Usage: Specify one of the following values:

- General-Info causes the MAX TNT to display general information and statistics for the system.
- Log-Window (the default) causes the MAX TNT to display saved system-event log entries
- Line-Status causes the MAX TNT to display the status of the system telephony interfaces.

Example: set bottom-status=general-info

Location: User name

See Also: Default-Status, Left-Status, Top-Status

# **Bridging-Group**

**Description:** Specifies a bridging-group number. Interfaces with the same bridging group can bridge to each other. The MAX TNT bridges all non-routed packets to interfaces belonging to the same group.

Usage: Specify a number. The default is 0 (zero), which disables bridging.

Example: set bridging-group=1

Location: Answer-Defaults > PPP-Answer, Connection station > Bridging-Options

See Also: Bridging-Options, Dial-On-Broadcast, PPP-Answer

# **Bridging-Options**

Description: A subprofile that contains settings for bridging connections.

Usage: When Connection is the working profile:

```
admin> list bridging-options
bridging-group=0
dial-on-broadcast=no
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

**Dependencies:** To set bridging options in a Connection profile, you must specify a non-zero value for Bridging-Group in the PPP-Answer subprofile of the Answer-Defaults profile.

Location: Connection station

See Also: Bridging-Group, Dial-On-Broadcast

# BRILT

**Description:** A profile that enables you to configure an IDSL card.

Usage: To make BRILT the working profile and list its contents:

```
admin> read brilt {1 1 0}
BRILT/{ shelf-1 slot-1 0 } read
admin> list
name=1:1:0
line-interface={yes "" ""}
physical-address*={ shelf-1 slot-1 0 }
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> write
BRILT/{ shelf-1 slot-1 0 } written

See Also: Name, Line-Interface, Physical-Address

# **BRI-Stat**

**Description:** A profile that displays information about the state of an ISDN BRI line and its individual channels.

Usage: To make BRI-Stat the working profile and list its contents:

```
admin> read bri-stat {1 8 1}
BRI-STAT/{ shelf-1 slot-8 1 } read
admin> list
physical-address*={ shelf-1 slot-8 1 }
line-state=disabled
channel-state=[ unavailable unavailable ]
error-count=[ 0 0 ]
```

See Also: Physical-Address, Line-State, Channel-State, Error-Count

# **Buffer-Chars**

**Description:** Specifies whether the MAX TNT buffers characters in a terminal-server session, or to processes each character as it receives it.

Usage: Specify Yes or No. The default is Yes.

- Yes specifies that the MAX TNT buffers input characters for 100 ms.
- No specifies that the MAX TNT processes each input character as it receives it.

#### Example: set buffer-chars=yes

Dependencies: If terminal services are disabled, Buffer-Chars does not apply.

Location: Terminal-Server > Terminal-Mode-Configuration

See Also: Terminal-Mode-Configuration

# С

# Callback

**Description:** Enables or disables callback security. When you enable callback security, the MAX TNT hangs up after receiving a call and calls back the calling device by using the Dial-Number value.

Usage: Specify Yes or No. The default is No.

- Yes causes the MAX TNT to hang up on a dial-in connection and dial back the device specified in the profile.
- No specifies that the MAX TNT does not hang up and call back, but authenticates the connection as usual.

Example: set callback=yes

**Dependencies:** If you are using nailed-up call types, or if Answer-Originate does not enable outgoing calls, Callback does not apply. In addition, you must specify a value for Dial-Number.

Location: Connection station > Telco-Options

See Also: Answer-Originate, Call-Type, Dial-Number

# Call-By-Call

**Description:** In a T1 profile, specifies the Call-By-Call signaling value to set for routing calls from a local device through the MAX TNT to the network. In a Connection profile, specifies the Call-By-Call signaling value for PRI lines.

**Usage:** Specify a number from 0 to 65535, corresponding to the type of Call-By-Call service in use. The default is 0, which disables Call-By-Call service.

The following Call-By-Call services are available if the service provider is AT&T:

- 0 (Disable Call-By-Call service.)
- 1 (SDN, including GSDN)
- 2 (Megacom 800)
- 3 (Megacom)
- 6 (ACCUNET Switched Digital Services)
- 7 (Long Distance Service, including AT&T World Connect)
- 8 (International 800—I800)
- 16 (AT&T MultiQuest)

The following are the VPN and GVPN Call-By-Call services available if the service provider is Sprint:

- 0 (Reserved)
- 1 (Private)
- 2 (Inwatts)
- 3 (Outwatts)
- 4 (FX)
- 5 (Tie Trunk)

The following are the Call-By-Call services available if the service provider is MCI:

- 1 (VNET/Vision)
- 2 (800)
- 3 (PRISM1, PRISM II, WATS)
- 4 (900)
- 5 (DAL)

#### Example: set call-by-call=7

Location: Connection *station* > Telco-Options, T1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Call-By-Call-ID, Line-Interface, Telco-Options

# Call-By-Call-ID

**Description:** Specifies the PRI service to use when placing a call.

**Usage:** Specify a number from 0 to 65535, corresponding to the type of Call-By-Call-ID service in use. The default is 0, which disables Call-By-Call-ID service.

The following Call-By-Call-ID services are available if the service provider is AT&T:

- 0 (Disable Call-By-Call-ID service.)
- 1 (SDN, including GSDN)
- 2 (Megacom 800)
- 3 (Megacom)
- 6 (ACCUNET Switched Digital Services)
- 7 (Long Distance Service, including AT&T World Connect)
- 8 (International 800—I800)
- 16 (AT&T MultiQuest)

The following VPN and GVPN Call-By-Call-ID services are available if the service provider is Sprint:

- 0 (Reserved)
- 1 (Private)
- 2 (Inwatts)
- 3 (Outwatts)
- 4 (FX)
- 5 (Tie Trunk)

The following Call-By-Call-ID services are available if the service provider is MCI:

- 1 (VNET/Vision)
- 2 (800)
- 3 (PRISM1, PRISM II, WATS)
- 4 (900)
- 5 (DAL)

Example: set call-by-call-id=7

Location: Frame-Relay fr-name

See Also: Call-By-Call

## Called-Number-Type

**Description:** Specifies the type of phone number specified in the Connection profile or Frame-Relay profile.

Usage: Specify one of the following values:

- Unknown specifies that the phone number type is unknown.
- International specifies phone numbers outside the U.S.
- National (the default) specifies phone numbers within the U.S.
- Local specifies phone numbers within your Centrex group.
- Abbrev specifies add-on numbers only.

#### Example: set called-number-type=international

Dependencies: Called-Number-Type does not apply to nailed-up connections.

Location: Connection station, Frame-Relay fr-name

See Also: Trunk-Group, Dial-Number

## CalledNumber

**Description:** For called-number authentication, specifies the number the remote end called to establish the connection. In many cases, the number will be the same as the Dial-Number, but without a trunk group or dial prefix.

Usage: Specify the called number. The default is null.

Example: set callednumber=5551212

Location: Connection station

See Also: CLID-Auth-Mode

# **Caller-ID**

Description: Indicates whether caller ID is enabled on the line.

Usage: Specify one of the following values:

- No-Caller-ID (the default) specifies that caller ID is not enabled on the line.
- Get-Caller-ID specifies that caller ID is enabled on the line.

```
Example: set caller-id=get-caller-id
```

**Dependencies:** When Signaling-Mode=E1-Chinese-Signaling, you must set Caller-ID=Get-Caller-ID for CLID authentication to work.

**Location:** E1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: CLID, CLID-Auth-Mode, Line-Interface

# Call-Filter

Description: Specifies the name of a call filter.

The MAX TNT uses a call filter to determine whether a packet should cause the unit to reset the idle timer or place a call. If you apply both a call filter and data filter to a connection, the MAX TNT applies the call filter after applying the data filter. Only those packets that the data filter forwards can reach the call filter.

**Usage:** Specify the filter name. The default is null, which specifies that the MAX TNT does not apply a call filter.

#### Example: set call-filter=ignore-bcast

**Dependencies:** If all channels of a link are nailed up, or if the Filter-Name setting does not specify a call filter, Call-Filter does not apply.

Location: Answer-Defaults > Session-Info, Connection station > Session-Options

**See Also:** Data-Filter, Filter, Filter-Name, Filter-Persistence, Idle-Timer, Session-Info, Session-Options

# Call-Info

**Description:** Specifies whether, at the time an authenticated call ends, the MAX TNT reports the following information to Syslog regarding the call:

- Station name
- Calling phone number
- Called phone number
- Encapsulation protocol
- Data rate (in bits per second)
- Progress code or disconnect reason
- Number of seconds before authentication
- Number of bytes or packets received during authentication
- Number of bytes or packets sent during authentication
- Length of session (in seconds)
- Number of bytes or packets received during the session
- Number of bytes or packets sent during the session

A one-line Syslog message contains information on the terminated call. The information also appears in the connection status window, and is logged as a message at level INFO. For example:

```
"Conn=("cjones-p50" 5106785291->? PPP 56000 60/185) \
Auth=(3 347/12 332/13) \
Sess=(1 643/18 644/19), Terminated"
```

If some of the information is not available, that field is displayed as either a question-mark (for strings) or a zero (for numerals).

**Usage:** To specify that the MAX TNT reports the information to Syslog, specify End-Of-Call. To specify that the MAX TNT does not report the information, specify None (the default).

**Dependencies:** Use Call-Info only for diagnosing session problems. The use of the underlying UDP protocol provides no guaranteed delivery. Therefore, you should not use Call-Info for billing purposes.

Location: Log

See Also: Host, Facility, Port, Save-Level, Save-Number, Syslog-Enabled

# **Call-Route**

**Description:** A profile that the MAX TNT uses to control the routing of incoming and outgoing calls. Every possible destination within a MAX TNT system has one or more profiles of this type.

Usage: To make Call-Route the working profile and list its contents:

```
admin> read call-route { { { 1 9 33} 0 } 0 }
CALL-ROUTE/{ { { shelf-1 slot-9 33 } 0 } 0 } read
admin> list
index*={ { { shelf-1 slot-9 33 } 0 } 0 }
trunk-group=0
phone-number=""
preferred-source={ { shelf-1 slot-13 0 } 0 }
call-route-type=any-call-type
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

```
admin> write
CALL-ROUTE/{ { { shelf-1 slot-9 33 } 0 } 0 } written
```

See Also: Index, Trunk-Group, Phone-Number, Preferred-Source, Call-Route-Type

# **Call-Route-Info**

**Description:** Specifies a device to which the MAX TNT should route calls received on a particular channel. The Call-Route-Info value is deprecated.

Like the "old" call routing method used by Ascend products prior to the MAX TNT, Call-Route-Info indicates "route any call received on this channel to the specified device." This value is a mirror-image of the Preferred-Source setting in a Call-Route profile, which indicates "route any call received on the specified T1 channel to me (the index address)."

The preferred method of call routing is to use Call-Route profile. However, although the Call-Route-Info setting is deprecated, any non-default setting you specify takes precedence over a Preferred-Source specification in a Call-Route profile.

**Usage:** Specify a device address within the MAX TNT. The default indicates any device and passes the responsibility for call routing to Call-Route profiles. Ascend recommends that you accept the default.

Example: set call-route-info={ 1 6 48 }

**Location:** E1 {shelf-*N* slot-*N N*} > Line-Interface > Channel-Config *N*, Swan {shelf-*N* slot-*N N*} > Line-Config, T1 {shelf-*N* slot-*N N*} > Line-Interface > Channel-Config N

See Also: Call-Route, Channel-Config, Line-Config, Preferred-Source

# Call-Route-Type

Description: Specifies the type of call that the MAX TNT can route to a host device.

Usage: Specify one of the following values:

- Any-Call-Type specifies that the MAX TNT can route any type of call to a host device.
- Voice-Call-Type specifies that the MAX TNT can route voice bearer calls, not including 3.1 Khz audio, to a host device.
- Digital-Call-Type specifies that the MAX TNT can route general digital calls, including 3.1 Khz audio bearer channel calls, to a host device. As far as the MAX TNT is concerned, 3.1 Khz audio calls are voice-bearer. The MAX TNT routes them to a modem, not an HDLC controller.
- Trunk-Call-Type (trunk calls) specifies that the MAX TNT routes calls to a trunk device.

Example: set call-route-type=any-call-type

**Location:** Call-Route {{{shelf-*N* slot-*N N*} *N*}

See Also: Call-Route, Index, Trunk-Group, Phone-Number, Preferred-Source

# **Call-Routing-Sort-Method**

**Description:** Specifies whether to use the old "slot-first" call-routing sort method, or the new "item-first" sort method.

When the system resets, the MAX TNT creates the call-routing database by sorting the list of all installed devices. During active use, the sort order depends on system activity, but the initial sort order determines the initial order in which the MAX TNT uses modems and HDLC channels. In previous software releases, the order in which the MAX TNT sorted device addresses caused all channels of a modem or HDLC card to be grouped together, forcing a single card to be completely full before the MAX TNT started using another card.

The "old" sort-order default processed the components of device addresses in the following order:

shelf slot item logical-item

The current sort-order default provides more load balancing across modem and HDLC cards by ordering device-address components in the following manner:

item shelf slot logical-item

This sort order causes the channels of different modem and HDLC cards to be interspersed, resulting in more load balancing across all cards, even after a system reset.

Usage: Specify one of the following values:

- Item-First (the default) specifies that the MAX TNT sorts by item number, then shelf, and then slot number. This setting tends to distribute incoming calls evenly across multiple host cards.
- Slot-First specifies that the MAX TNT sorts by shelf and slot number, and then by item number. This setting tends to concentrate incoming calls on one host card at a time.

Example: set call-routing-sort-method=slot-first

Location: System

See Also: Call-Route, Call-Route-Info, Call-Route-Type

# Call-Type

Description: Specifies nailed-up channel usage for a connection.

Usage: Specify one of the following values:

- Off (the default) specifies that the connection does not use any nailed-up channels.
- FT1 specifies that the connection uses only nailed-up channels.
- FT1-MPP specifies that the MAX TNT might augment nailed-up channels with switched channels for increased bandwidth during an MP+ call.
- FT1-BO specifies that a nailed-up connection can use switched channels, both for additional bandwidth and for a backup method of reaching the site if the nailed-up connection is down.

Example: set call-type=off

Dependencies: If Nailed-Groups is set to 0 (zero), Call-Type does not apply.

Location: Connection *station* > Telco-Options

See Also: Nailed-Groups, Telco-Options

## **Carrier-Established**

Description: Indicates whether error conditions exist on the T1 line.

**Usage:** The Carrier-Established setting is read only. True indicates that no error conditions exist. False indicates error conditions on the line.

**Location:** T1-Stat {shelf-*N* slot-*N N*}

See Also: AIS-Receive, BER-Receive, Loss-Of-Carrier, Loss-Of-Sync, Yellow-Receive

# **Cell-Level**

Description: Specifies the modem cellular-communications transmit and receive level.

Usage: Specify one of the following values:

- -18-db-Cell-Level (the default)
- -17-db-Cell-Level
- -16-db-Cell-Level
- -15-db-Cell-Level
- -14-db-Cell-Level
- -13-db-Cell-Level
- -12-db-Cell-Level
- -11-db-Cell-Level
- -10-db-Cell-Level

Example: set cell-level=-18-db-cell-level

Dependencies: If terminal services are disabled, Cell-Level does not apply.

Location: Terminal-Server > Modem-Configuration

See Also: Cell-Mode-First, Modem-Configuration

# Cell-Mode-First

**Description:** Determines whether the MAX TNT attempts a cellular connection before a land connection.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT attempts a cellular connection first.
- No specifies that the MAX TNT attempts a land-based connection first, followed by a cellular connection.

Example: set cell-mode-first=no

Dependencies: If terminal services are disabled, Cell-Mode-First does not apply.

Location: Terminal-Server > Modem-Configuration

See Also: Cell-Level, Modem-Configuration

# **Channel-Config**

**Description:** A subprofile containing channel-configuration subprofiles, one for each channel of a T1 or E1 line.

Usage: When T1 or E1 is the working profile:

```
admin> list line channel
```

```
channel-config[1]={ switched-channel 9 "" {any-shelf any-slot 0 }0}
channel-config[2]={ switched-channel 9 "" {any-shelf any-slot 0 }0}
channel-config[3]={ switched-channel 9 "" {any-shelf any-slot 0 }0}
channel-config[4]={ switched-channel 9 "" {any-shelf any-slot 0 }0}
...
```

To close the Channel-Config subprofile and return to a higher context in the profile:

admin> list ..

**Location:** E1 {shelf-N slot-N N} > Line-Interface, T1 {shelf-N slot-N N} > Line-Interface

See Also: Channel-Config N, Channel-State, Channel-State N, Channel-Usage, Line-Interface

#### Channel-Config N

**Description:** A subprofile containing configuration options for the individual channels of a T1 or E1 line. The index for each subprofile is a channel number (1–24 for T1, 1–32 for E1).

**Usage:** When T1 or E1 is the working profile, you can view the configuration for channel 1 as follows:

```
admin> list line channel 1
channel-usage=switched-channel
trunk-group=9
phone-number=""
call-route-info={ any-shelf any-slot 0 }
nailed-group=0
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

**Location:** E1 {shelf-N slot-N N} > Line-Interface > Channel-Config, T1 {shelf-N slot-N N} > Line-Interface > Channel-Config

**See Also:** Call-Route-Info, Channel-Config, Channel-State, Channel-State N, Channel-Usage, Line-Interface, Nailed-Group, Phone-Number, Trunk-Group

## **Channel-State**

**Description:** An array value listing the state of each channel of a T1 or ISDN BRI line. The index to each array component is a channel number (1–24 for T1, 1–2 for ISDN BRI).

Usage: To display the individual array components when T1-Stat is the working profile:

```
admin> list channel
channel-state[1]=idle
channel-state[2]=idle
channel-state[3]=dialing
...
```

To display the individual array components when BRI-Stat is the working profile:

```
admin> list channel
channel-state[1]=idle
channel-state[2]=idle
```

To close the array and return to a higher context in the profile:

```
admin> list ..
```

Location: BRI-Stat {shelf-*N* slot-*N N*}, T1-Stat {shelf-*N* slot-*N N*}

See Also: Channel-Config, Channel-Config N, Channel-State N, Channel-Usage, Line-State

#### Channel-State N

**Description:** Specifies the individual state of a channel in a T1 or ISDN BRI line. The index to each component is a channel number (1–24 for T1, 1–2 for ISDN BRI).

**Usage:** The Channel-State *N* setting may be one of the following:

- Unavailable specifies that the channel is not available.
- Unused specifies that the channel is not in use.
- Out-Of-Service specifies that the channel has been taken out of service.
- Nailed-Up specifies that the channel is nailed-up (rather than switched).
- Held specifies that the channel is on hold.
- Idle specifies that the channel is not being used for a call.
- Clear-Pending specifies that call clearing is in process.
- Dialing specifies that a number is being dialed for the channel.
- Ringing specifies that the MAX TNT is attempting a connection on the channel.
- Connected specifies that the channel is being used for an established connection.
- Signaling specifies that the channel is a D channel.

- Cut-Through specifies that the channel is a drop-and-insert source or destination.
- Current-D specifies that the channel is a current D channel in an NFAS configuration.
- Backup-D specifies that the channel is the backup D channel in an NFAS configuration.)
- Maintenance specifies that the channel is in a maintenance state.
- Spc-Up specifies that a semi-permanent circuit is up (Australian installations only).

**Location:** T1-Stat {shelf-*N* slot-*N N*} > Channel-State

See Also: Channel-Config, Channel-Config N, Channel-State, Channel-Usage, Line-State

#### **Channel-Usage**

Description: Specifies the usage for a channel.

Usage: For a T1 or E1 channel, specify one of the following values:

- Unused-Channel specifies that the channel is unused. The MAX TNT sends the single idle code defined for the channel.
- Switched-Channel (the default) specifies a switched channel, which uses either robbed-bit or D-channel signaling.
- Nailed-64-Channel specifies a clear-channel 64k circuit. It does not require any setup information.
- D-Channel specifies a channel used for ISDN D-channel signaling. For T1, the D channel is channel 24. For E1, it is channel 16.

T1 channels support the following additional usage values:

- Drop-And-Insert specifies that the channel cuts through to another T1 line in the MAX TNT system—for example, to a line supporting a PBX.
- NFAS-Primary-D-Channel specifies that the primary D channel for a group of T1 lines with the same NFAS ID. You must set all other channels on the NFAS line to Switched-Channel, Nailed-64-Channel, or Unused-Channel. Within an NFAS group, you should configure only one line to provide the primary ISDN D channel.
- NFAS-Secondary-D-Channel specifies the secondary D channel for a group of T1 lines with the same NFAS ID. You must set all other channels on the NFAS line to Switched-Channel, Nailed-64-Channel, or Unused-Channel. Within an NFAS group, you should configure only one line to provide the secondary (backup) D channel.

Example: set channel-usage=switched-channel

**Dependencies:** Channel usage may be different from the usage specified for the line itself. For example, the line might specify switched usage, while individual channels within that line might specify nailed-up usage.

**Location:** E1 {shelf-N slot-N N} > Line-Interface > Channel-Config N, T1 {shelf-N slot-N N} > Line-Interface > Channel-Config N

**See Also:** Channel-Config, Channel-Config N, Channel-State, Line-Interface, NFAS-ID, Signaling-Mode

# **Circuit-Name**

**Description:** Specifies a name for a Data Link Connection Indicator (DLCI) endpoint. When combined as a circuit, two DLCI endpoints act as a tunnel—data received on one DLCI bypasses the Ascend router and is sent out on the other DLCI.

A circuit is a Permanent Virtual Circuit (PVC) segment that consists of two DLCI endpoints and possibly two Frame Relay profiles. It requires two and only two DLCI numbers. Data is dropped if the circuit has only one DLCI. If more than two are defined, only two are used. Circuits are defined in two Connection profiles or RADIUS user profiles. Data coming in on the DLCI configured in the first profile is switched to the DLCI configured in the second one.

**Usage:** Specify a name for the circuit. You can enter up to 16 characters. The other endpoint of the PVC must specify the same name in its circuit configuration.

Example: set circuit-name=circuit-1

**Dependencies:** If FR-Direct-Enabled=Yes, Circuit-Name does not apply. It applies only to gateway or circuit connections in which Encapsulation-Protocol=Frame-Relay.

Location: Connection *station* > FR-Options

See Also: Encapsulation-Protocol, FR-Direct-Enabled, FR-Options

# **Clear-Call**

**Description:** Specifies whether the MAX TNT clears a dial-in connection when an interactive Telnet, Rlogin, or TCP session terminates.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT clears a dial-in connection when an interactive Telnet, Rlogin, or TCP session terminates.
- No specifies that the MAX TNT does not clear a dial-in connection when an interactive session terminates. Instead, the MAX TNT returns the user to the terminal-server menu.

Example: set clear-call=yes

Dependencies: If terminal services are disabled, Clear-Call does not apply.

Location: Terminal-Server > Terminal-Mode-Configuration

See Also: Terminal-Mode-Configuration

# **Clear-Screen**

**Description:** Specifies whether the MAX TNT clears the screen when a terminal-server session begins.

Usage: Specify Yes or No. The default is Yes.

- Yes specifies that the MAX TNT clears the screen of all status messages and echoed scripts when it establishes a terminal-server session.
- No specifies that the MAX TNT establishes the terminal-server session without clearing the screen.

Example: set clear-screen=yes

Dependencies: If terminal services are disabled, Clear-Screen does not apply.

Location: Terminal-Server > Terminal-Mode-Configuration

See Also: Terminal-Mode-Configuration

CLID

**Description:** Specifies the phone number of the remote station (the calling line ID). If present for an incoming call, the MAX TNT can use the CLID value for CLID authentication before answering the call.

**Usage:** Specify the calling party's phone number. You can enter up to 24 characters. The default is null.

Example: set clid=510-555-1213

Location: Connection station

See Also: CLID-Auth-Mode

# **CLID-Auth-Mode**

**Description:** Specifies how the MAX TNT uses the Calling-Line ID (CLID) for authenticating incoming calls.

Usage: Specify one of the following values:

- Ignore (the default) specifies that the MAX TNT does not require a matching ID from incoming calls.
- CLID-Prefer specifies that the MAX TNT authenticates the call using the CLID, if it is available. If the CLID is not available, the MAX TNT uses the type of authentication specified by the Answer-Defaults profile.
- CLID-Require specifies that the CLID must be valid and must match the value in a configured profile. If the profile also requires password authentication, the MAX TNT must perform that type of authentication as well.
- CLID-Fallback specifies that the MAX TNT performs authentication using the CLID, if it is available. Otherwise, the MAX TNT falls back to using password authentication.
- DNIS-Require specifies that the called number must be valid and match the CalledNumber value in a configured profile. If the profile also requires password authentication, the MAX TNT must perform that type of authentication as well.
- DNIS-Pref specifies that the MAX TNT performs authentication using the CalledNumber value in a configured profile, if the called number is available. If not, the MAX TNT falls back to using password authentication.

Example: set clid-auth-mode=dnis-pref

Location: Answer-Defaults

See Also: CalledNumber, CLID

#### **Client-Default-Gateway**

**Description:** Specifies the default gateway to use for traffic from this connection if no specific route appears in the IP routing table.

**Usage:** Specify an IP address in dotted decimal notation. The default is 0.0.0.0, which causes the system to use the Default route

Example: set client-default-gateway=10.207.23.13/29

Location: Connection *station* > IP-Options

See Also: Ignore-Def-Route, IP-Options

#### Client-DNS-Addr-Assign

**Description:** Specifies whether the MAX TNT presents client DNS server addresses while the connection is being negotiated.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT makes the client DNS server addresses available to the connection.
- No specifies that the client DNS server addresses are accessible.

Example: set client-dns-addr-assign=no

**Location:** Connection *station* > IP-Options

See Also: Allow-As-Client-DNS-Info, Client-DNS-Primary-Addr, Client-DNS-Secondary-Addr, Client-Primary-DNS-Server, Client-Secondary-DNS-Server, IP-Options

## **Client-DNS-Primary-Addr**

**Description:** Specifies a primary DNS server address to send to the client connecting to the MAX TNT.

A client configuration defines DNS servers that the MAX TNT presents to WAN connections during IPCP negotiation. These servers provide a way to protect your local DNS information from WAN users. Client DNS has two levels: a global configuration that applies to all PPP connections, and a connection-specific configuration. The Client-DNS-Primary-Addr setting applies to the connection-specific level.

The MAX TNT uses the global client addresses only if none are specified in the Connection profile. You can also choose to present your local DNS servers if no client servers are defined or available.

**Usage:** Specify the IP address of the primary DNS server for the connection. Separate the optional subnet mask from the address by using a forward slash. The default is 0.0.0/0, which specifies that no primary DNS server is available for the connection.

Example: set client-dns-primary-addr=10.1.2.3/24

Dependencies: If Client-DNS-Addr-Assign=No, Client-DNS-Primary-Addr does not apply.

Location: Connection *station* > IP-Options

See Also: Allow-As-Client-DNS-Info, Client-DNS-Addr-Assign, Client-DNS-Secondary-Addr, Client-Primary-DNS-Server, Client-Secondary-DNS-Server, IP-Options

# **Client-DNS-Secondary-Addr**

**Description:** Specifies a secondary DNS server address to send to the client connecting to the MAX TNT. The MAX TNT presents this server address only if the server specified by Client-DNS-Primary-Addr is inaccessible.

**Usage:** Specify the IP address of the secondary DNS server for the connection. Separate the optional subnet mask from the address by using a forward slash. The default is 0.0.0/0, which specifies that no secondary DNS server is available for the connection.

Example: set client-dns-secondary-addr=10.5.6.7/24

Dependencies: If Client-DNS-Addr-Assign=No, Client-DNS-Secondary-Addr does not apply.

Location: Connection station > IP-Options

See Also: Allow-As-Client-DNS-Info, Client-DNS-Addr-Assign, Client-DNS-Primary-Addr, Client-Primary-DNS-Server, Client-Secondary-DNS-Server, IP-Options

# **Client-Primary-DNS-Server**

**Description:** Specifies a primary DNS server address to send to any client connecting to the MAX TNT.

Client DNS has two levels: a global configuration that applies to all PPP connections, and a connection-specific configuration. The Client-Primary-DNS-Server setting defines the global level. The MAX TNT uses the global client addresses only if none are specified in the Connection profile. You can also choose to present your local DNS servers if no client servers are defined or available.

**Usage:** Specify the IP address of a DNS server to use for all connections that do not have a defined DNS server. Separate the optional subnet mask from the address by using a forward slash. The default is 0.0.0.0/0, which specifies that no primary DNS server is available on a global level.

Example: set client-primary-dns-server=10.9.8.7/24

Location: IP-Global

See Also: Allow-As-Client-DNS-Info, Client-DNS-Addr-Assign, Client-DNS-Primary-Addr, Client-DNS-Secondary-Addr, Client-Secondary-DNS-Server

# **Client-Secondary-DNS-Server**

**Description:** Specifies a secondary DNS server address to send to any client connecting to the MAX TNT.

Client DNS has two levels: a global configuration that applies to all PPP connections, and a connection-specific configuration. The Client-Secondary-DNS-Server setting defines the global level. The MAX TNT uses the global client addresses only if none are specified in the Connection profile. You can also choose to present your local DNS servers if no client servers are defined or available.

**Usage:** Specify the IP address of a secondary DNS server to use for all connections that do not have a DNS server defined. Separate the optional subnet mask from the address by using a

forward slash. The default is 0.0.0.0/0, which specifies that no secondary DNS server is available on a global level.

#### Example: set client-secondary-dns-server=10.9.8.3/24

Location: IP-Global

See Also: Allow-As-Client-DNS-Info, Client-DNS-Addr-Assign, Client-DNS-Primary-Addr, Client-DNS-Secondary-Addr, Client-Primary-DNS-Server

# **Clock-Priority**

**Description:** Assigns a clock priority to a T1 or E1 line. When multiple lines are eligible for use as the clock source for synchronous transmissions, the MAX TNT uses the value you specify to select a line as the master clock source. If multiple lines are eligible to be the clock source, and each line has an equal Clock-Priority value, the MAX TNT chooses a source at random.

Usage: Specify one of the following values:

- High-Priority specifies the highest priority. The MAX TNT chooses a line with this priority setting as the clock source over other lines with a lower priority. If more than one line has the highest priority, the first available line becomes the clock source.
- Middle-Priority specifies the second priority. The MAX TNT chooses a line with this priority setting if each line with a High-Priority setting is unavailable. If more than one line has a Middle-Priority setting, the first available Middle-Priority line becomes the clock source.
- Low-Priority specifies the lowest priority. The MAX TNT chooses a line with this priority only if each line with a higher priority setting is unavailable. If more than one line has a Low-Priority setting, the first available Low-Priority line becomes the clock source.

Once the MAX TNT chooses a line as the clock source, it uses that line until it becomes unavailable, or a until a higher-priority source becomes available.

Example: set clock-priority=middle-priority

Location: E1 {shelf-*N* slot-*N N*} > Line-Interface, T1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Clock-Source, Line-Interface

# **Clock-Source**

**Description:** Specifies whether the MAX TNT can use the T1 or E1 line as the master clock source for synchronous connections.

The entire multi-shelf MAX TNT system uses a single PLL synchronous clock source. The MAX TNT chooses the clock source from lines configured with Clock-Source set to Eligible. If there are no eligible external sources, the system uses an internal clock generated from the master shelf-controller.

You can use the Clock-Source diagnostic command to determine the current master clock source. If you execute the command on the shelf-controller, the output tells which slot (if any) is the clock source. If you execute the command on a T1 or E1 card, the output tells which line is the clock source.

Usage: Specify one of the following values:

- Eligible (the default) specifies that the MAX TNT can use the line as the master clock source.
- Not-Eligible specifies that the MAX TNT cannot use the line as the master clock source.

#### Example: set clock-source=eligible

Location: E1 {shelf-N slot-NN} > Line-Interface, T1 {shelf-N slot-NN} > Line-Interface

See Also: Clock-Priority, Line-Interface

#### **Community-Name**

**Description:** Specifies the SNMP community name associated with SNMP PDUs (Protocol Data Units). The string you specify becomes a password that the MAX TNT sends to the SNMP manager when an SNMP trap event occurs. The password authenticates the sender identified by Host-Address.

**Usage:** Specify the community name. You can enter up to 31 characters. The default is public.

Example: set community-name=Ascend

Location: Trap *host-name* 

See Also: Alarm-Enabled, Host-Address, Host-Name, Port-Enabled, Security-Mode

# **Comp-Neq**

**Description:** Specifies the type of comparison to make between the setting specified for Value and a packet's contents.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the comparison succeeds when the values are not equal.
- No specifies that the comparison succeeds when the values are equal.

#### Example: set comp-neq=no

Dependencies: Comp-Neq applies only when Type=Generic-Filter.

**Location:** Filter *filter-name* > Input-Filters > Gen-Filter, Filter *filter-name* > Output-Filters > Gen-Filter

See Also: Gen-Filter, Input-Filters, Output-Filters, Type

# Connection

**Description:** A profile containing connection-specific information, including authentication settings, compression values, filter specifications, and Telco options.

The MAX TNT uses the settings in the Answer-Defaults profile to answer a call and determine whether it should attempt to build a connection. It then looks for a Connection profile or RADIUS user profile.

Usage: To create a new Connection profile and list its contents:

```
admin> read conn newyork
CONNECTION/newyork read
admin> list
station*=newyork
active=yes
encapsulation-protocol=mpp
called-number-type=national
dial-number=""
clid=""
ip-options={ yes yes 10.122.99.1/24 0.0.0.0/0 7 100 255 no no 0 0.0.0.+
ipx-options={ no router-peer both both no 00:00:00:00 00:00:00:00: +
bridging-options={ 0 no }
session-options={ "" "" no 120 no-idle 120 "" 0}
telco-options={ ans-and-orig no off 1 no no 56k-restricted 0 "" "" no +
ppp-options={ "" "" stac 1524 no 600 600 }
mp-options={ 1 1 2 }
mpp-options={ "" quadratic transmit 1 1 15 5 10 70 }
fr-options={ frlink 16 "" no "" 16 }
tcp-clear-options={ "" 0 }
appletalk-options={ no "" 0 0 peer-router }
usrRad-options={ global 0.0.0.0 1646 "" 1 acct-base-10 }
calledNumber=""
framed-only=no
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> write CONNECTION/newyork written

**See Also:** Active, Bridging-Options, CalledNumber, Called-Number-Type, CLID, Dial-Number, Encapsulation-Protocol, IP-Options, PPP-Options, Session-Options, Station, Telco-Options, UsrRad-Options

Connection-SQ	<b>Description:</b> Indicates the signal quality (SQ) reading.
	Usage: The Connection-SQ value is read only.
	<b>Dependencies:</b> If the difference between the Line-Quality value and the Connection-SQ value is greater than 6db (for 22 seconds or more), the MAX TNT disconnects the line. This situation occurs when a line becomes open or the remote unit loses power.
	Location: ADSL-Cap-Statistics {shelf-N slot-N N}
	See Also: HDLC-RX-CRC-Error-Cnt, Line-Quality, Line-Up-Timer, Physical-Address, RS-Corrected-Errors, RS-Errors, RX-Attenuation, RX-Signal-Present, Self-Test, Transmit-Power, Up-Down-Cntr
Contact	<b>Description:</b> Specifies the person or department to contact to report error conditions. The Contact value is SNMP readable and settable.
	<b>Usage:</b> Specify the name of a contact person or department. You can enter up to 80 characters. The default is null.
	Example: set contact=rchu
	Location: SNMP
	See Also: Location
Cost	
	<b>Description:</b> Specifies the cost of an OSPF link. The lower the cost, the more likely OSPF will use the interface to forward data traffic.
	<b>Usage:</b> Specify a number greater than 0 and less than 16777215. The default is 1 on the Ethernet interface, and 10 on the WAN links.
	With the exception of links to stub networks, the output cost must always be non-zero. A link with a cost of 0xFFFFFF (16777215) is considered non-operational.
	<b>Dependencies:</b> In a static route, interpretation of the Cost value depends on the type of external metric set by ASE-Type. If the MAX TNT is advertising type 1 metrics, OSPF can use the specified number as the cost of the route. Type 2 external metrics are an order of magnitude larger. Any type 2 metric is considered greater than the cost of any path internal to the AS.
	Example: set cost=50
	<b>Location:</b> Connection <i>station</i> > IP-Options > OSPF-Options, IP-Interface { {shelf- <i>N</i> slot- <i>N N</i> } <i>N</i> } > OSPF, IP-Route <i>name</i>
	See Also: ASE-Type, Down-Cost, IP-Options, OSPF, OSPF-Options

# **Countries-Enabled**

Description: Contains a bit-set of the enabled countries.

Usage: The Countries-Enabled setting is read only.

Example: countries-enabled=0

Location: Base

**See Also:** AIM-Enabled, Data-Call-Enabled, D-Channel-Enabled, Domestic-Enabled, Frame-Relay-Enabled, MAXLink-Client-Enabled, Modem-Dialout-Enabled, Multi-Rate-Enabled, R2-Signaling-Enabled, Switched-Enabled

# **CSU-Build-Out**

**Description:** Specifies the line buildout value for T1 lines with an internal Channel Service Unit (CSU). The buildout value is the amount of attenuation the MAX TNT should apply to the line's network interface in order to match the cable length from the MAX TNT to the next repeater.

Attenuation is a measure of the power lost on a transmission line or on a portion of that line. When you specify a buildout value, the MAX TNT applies an attenuator to the T1 line, causing the line to lose power. Repeaters boost the signal on a T1 line, and can make the signal too strong. If the MAX TNT is too close to a repeater, you need to add some attenuation.

**Usage:** Check with your carrier to determine the correct value. Specify one of the following values (db stands for decibels):

- 0–db (the default)
- 7.5–db
- 15–db
- 22.5–db

Example: set csu-build-out=0-db

Dependencies: CSU-Build-Out applies only if the T1 line has an internal CSU.

**Location:** T1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Front-End-Type, Line-Interface

# **Current-State**

Description: Indicates the current operational state of the slot.

Usage: The Current-State value is read only, and may have one of the following values:

- Oper-State-Down indicates that the slot is in a non-operational state.
- Oper-State-Up indicates that the slot is in normal operations mode.
- Oper-State-Diag indicates that the slot is in diagnostics mode.
- Oper-State-Dump indicates that the slot is dumping core.
- Oper-State-Pend indicates that while the slot is no longer down, it is not yet ready for normal operation. This value denotes a transitional state in which additional shelf-to-slot communications are required to make the slot fully operational.
- Oper-State-Post indicates that the slot is running a self-test.
- Oper-State-None indicates that the slot is empty.

Example: current-state=oper-state-up

**Location:** Slot-State {shelf-*N* slot-*N* 0}

See Also: Channel-State, Line-State
# D

## Data

Description: Contains information about the firewall definition.

**Usage:** Only the Secure Access Manager should specify a data value. If you list the data setting separately, it appears as a sparse array:

```
admin> list data
data[0]=ACAfiwgAAAAAAADE2RmZDTiz0zOLeDkBAAFTV14DAAA
data[33]=AA==
data[66]=
...
```

Location: Firewall name

See Also: Version

## **Data-Call-Enabled**

Description: Indicates whether the MAX TNT supports data calls over ISDN lines.

**Usage:** The Data-Call-Enabled setting is read only. Yes indicates that the MAX TNT supports data calls over ISDN lines. No indicates that the MAX TNT does not support data calls over ISDN lines.

Example: data-call-enabled=yes

Location: Base

**See Also:** AIM-Enabled, Countries-Enabled, D-Channel-Enabled, Domestic-Enabled, Frame-Relay-Enabled, MAXLink-Client-Enabled, Modem-Dialout-Enabled, Multi-Rate-Enabled, R2-Signaling-Enabled, Switched-Enabled

# **Data-Filter**

**Description:** Specifies the name of a filter the MAX TNT uses to determine whether it should forward or drop a packet. If the MAX TNT applies a call filter and a data filter to a connection, the MAX TNT applies a call filter after applying a data filter. Only those packets that the data filter forwards can reach the call filter.

**Usage:** Specify the filter name. The default is null, which specifies that the MAX TNT does not apply a data filter.

Example: set data-filter=ip-spoof

Dependencies: Data-Filter applies only when the Filter-Name setting specifies a data filter.

Location: Answer-Defaults > Session-Info, Connection station > Session-Options

See Also: Call-Filter, Filter-Name, Filter-Persistence, Session-Info, Session-Options

## Data-Sense

**Description:** Specifies whether the D channel uses normal or inverted data. Inverted data has 1s changed into 0s, and 0s into 1s. In some connections, you need to invert the data to avoid transmitting a pattern that the connection cannot handle. If you use inverted data, you should do so on both sides of the connection.

Usage: Specify one of the following values:

- Normal (the default) specifies non-inverted data.
- Inv specifies inverted data.

Example: set data-sense=normal

**Location:** T1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Line-Interface

## **Data-Service**

**Description:** For a switched connection, specifies the type of service requested of the switch. For a nailed-up connection, specifies the bandwidth to use per channel.

Usage: Specify one of the following values:

- Voice (switched calls only) specifies that the call should be set up as a voice call, even if the MAX TNT transmits data over the channel. It assumes that only 56 kbps is available.
- 56k-Restricted (the default) specifies that the call should be set up as a data call with an explicit request for 56-kbps restricted data transfer. This setting guarantees that transmitted data meets the density restrictions of D4-framed TI lines.
- 56k-Clear specifies that the call should be set up as a data call that uses 56-kbps of the bandwidth of the data channel. This setting is common for T1 PRI lines.
- 64k-Restricted specifies that the call should be set up as a data call with an explicit request for 64-kbps restricted data transfer.
- 64k-Clear specifies that the call should be set up as a data call that uses the full 64-kbps bandwidth of the data channel.
- 384k-Clear (switched calls only) specifies that the call should be set up as a data call that connects to the Switched-384 data service. This AT&T data service does not require Multi-Rate or GlobanD.
- 384k-Restricted (switched calls only) specifies that the call should be set up as a data call that connects to Multi-Rate or GlobanD data services at 384 kbps.
- DWS-384-clear (switched calls only) specifies a 384-kbps call coded as Multi-Rate, not H0.
- 1536k-Clear (switched calls only) specifies that the call should be set up as a data call that connects to the Switched-1536 data service at 1536 kbps. NFAS signaling is required for the Switched-1536 data service. (Because all 24 channels of the T1 PRI line carry user data, the D channel must be on another line.)
- 1536k-Restricted (switched calls only) is the same as 1536k-Clear, but with a request for restricted data transfer.

- Settings from 128- to 1472-kbps clear in multiples of 64 (switched calls only) are available on a T1 PRI line with Multi-Rate or GlobanD data services. You can specify the following values:
  - 128k-Clear
  - 192k-Clear
  - 256k-Clear
  - 320k-Clear
  - 448k-Clear
  - 512k-Clear
  - 576k-Clear
  - 640k-Clear
  - 704k-Clear
  - 768k-Clear
  - 832k-Clear
  - 896k-Clear
  - 960k-Clear
  - 1024k-Clear
  - 1088k-Clear
  - 1152k-Clear
  - 1215k-Clear
  - 1280k-Clear
  - 1344k-Clear
  - 1408k-Clear
  - 1472k-Clear
- Modem (switched calls only) specifies that the call should be set up as a voice call. When the call is up, it goes to a digital modem.

#### Example: set data-service=voice

**Dependencies:** To ensure data integrity when Data-Service=Voice:

- Use only digital end-to-end connectivity. No analog signals should be present anywhere in the link.
- Make sure that the phone company is not using any intervening loss plans to economize on voice calls.
- Do not use echo cancellation. Analog lines can echo, and the technology to take out the echoes can also scramble data in the link.
- Do not make any modifications that can change the data in the link.

Location: Connection station > Telco-Options

See Also: Call-Type, Telco-Options

# Date

Description: A subprofile that shows the day of the week and the current system date.

Usage: When Timedate is the working profile:

admin> **list date** weekday=Friday month=October day=18 year=1996

You can then use the Set command to modify the settings in the subprofile.

admin> set weekday=Saturday

admin> set day=19

**Note:** You can also use the Date command to set the day of the week and the current system date.

Example: set date day=19

Location: Timedate

See Also: Time

## DCEN392-Val

**Description:** Specifies the total number of errors, during DCE-N39-monitored events, that cause the network side to declare the user side's procedures inactive.

**Usage:** Specify a value from 1 to 10. The value you specify must be less than DCEN393-Val. The default is 3.

Example: set dcen392-val=7

Dependencies: If FR-Type-Val=DTE, DCEN392-Val does not apply.

Location: Frame-Relay fr-name

See Also: DCEN393-Val, FR-Type-Val

## DCEN393-Val

**Description:** Specifies the DCE-monitored event count.

**Usage:** Specify a value from 1 to 10. The value you specify must be greater than DCEN392-Val. The default is 4.

Example: set dcen393-val=8

Dependencies: If FR-Type-Val=DTE, DCEN393-Val does not apply.

Location: Frame-Relay fr-name

See Also: DCEN392-Val, FR-Type-Val

## **D-Channel-Enabled**

Description: Indicates whether the unit enables D-channel (ISDN) signaling.

**Usage:** The D-Channel-Enabled setting is read only. Yes indicates that the unit supports D-channel signaling. No indicates that the unit does not support D-channel signaling.

#### Example: d-channel-enabled=yes

Location: Base

See Also: AIM-Enabled, Countries-Enabled, Data-Call-Enabled, Domestic-Enabled, Frame-Relay-Enabled, MAXLink-Client-Enabled, Modem-Dialout-Enabled, Multi-Rate-Enabled, R2-Signaling-Enabled, Switched-Enabled

## **Dead-Interval**

**Description:** Specifies the number of seconds the OSPF router waits for Hello packets before deciding that its neighbor is down.

**Usage:** Specify a number from 0 to 65535. The default is 40 seconds for a connected route, and 120 seconds for a WAN connection.

#### Example: set dead-interval=40

**Location:** Connection *station* > IP-Options > OSPF-Options, IP-Interface {{shelf-*N* slot-*N N*} *N*} > OSPF

See Also: Hello-Interval, IP-Options, OSPF, OSPF-Options

#### **Decrement-Channel-Count**

**Description:** Specifies the number of channels the MAX TNT removes as a bundle when bandwidth changes, either manually or automatically, during a call.

Usage: Specify an integer from 1 to 32. The default is 1.

Example: set decrement-channel-count=1

Dependencies: You cannot clear a call by decrementing channels.

Location: Answer-Defaults > MPP-Answer, Connection station > MPP-Options

**See Also:** Add-Persistence, Bandwidth-Monitor-Direction, Base-Channel-Count, Dynamic-Algorithm, Increment-Channel-Count, Minimum-Channels, Maximum-Channels, MPP-Answer, MPP-Options, Seconds-History, Sub-Persistence, Target-Utilization

## **Default-Call-Type**

**Description:** Specifies a default call type for calls on non-ISDN T1 lines. The MAX TNT uses the default type for call routing if no explicit routes are found.

Usage: Specify one of the following values:

- Digital (the default) specifies that the MAX TNT treats incoming calls as digital.
- Voice specifies that the MAX TNT treats incoming calls as voice calls from a modem.

Example: set default-call-type=voice

**Location:** T1 {shelf-*N* slot-*N N*} > Line-Interface

	See Also: Line-Interface
Default-Status	<b>Description:</b> Specifies whether the MAX TNT displays the status screen by default on login for the user account
	Usage: Specify Ves or No. The default is No.
	<ul> <li>Ves (the default) specifies that the MAX TNT displays the status screen when it authenti-</li> </ul>
	cates the profile.
	• No specifies that the MAX TNT does not display the status screen when it authenticates the profile.
	Example: set default-status=yes
	Location: User name
	See Also: Bottom-Status, Left-Status, Top-Status
Delay	
	<b>Description:</b> On an incoming modem, V.110, or V.120 call, specifies the number of seconds the MAX TNT waits for PPP packets before it changes to terminal-server mode. If it detects PPP, the MAX TNT routes the packets to its bridge/router. Otherwise, it displays the Telnet or terminal-server login prompt.
	If the caller's Connection profile specifies PAP or CHAP authentication, and the first data received at the Telnet or terminal-server login prompt is PPP-encapsulated, the MAX TNT transitions to packet-mode processing immediately.
	Usage: Specify an integer from 1 to 60. The default is 5.
	Example: set delay=15
	Dependencies: If terminal services are disabled, Delay does not apply.
	Location: Terminal-Server > PPP-Mode-Configuration
	See Also: PPP-Mode-Configuration
Desired-State	
	<b>Description:</b> Specifies the desired administrative state of a device. The actual state of the device may differ from the desired state, as when a device is powering up, or you change the desired state on a running slot. Changing the desired state does not force a device to the new state. It indicates that the MAX TNT should change the device state in a graceful manner.
	Usage: Specify one of the following values:
	• Admin-State-Down specifies that the addressed device should terminate all operations and enter the down state.
	• Admin-State-Up specifies that the addressed device should come up in normal operations mode.
	Example: set desired-state=admin-state-up

**Location:** Admin-State {shelf-*N* slot-*N N*}

See Also: Device-Address, Modem-Table-Index, Slot-Type, SNMP-Interface

## **Dest-Address**

**Description:** Specifies a destination IP address.

**Usage:** Specify an IP address. The default is 0.0.0.0. In an IP-Route profile, the null address represents a default route. Packets whose destinations do not match an entry in the routing table are forwarded to the default route. In a Filter profile, the MAX TNT compares Dest-Address to a packet's destination address after applying the Dest-Address-Mask value.

Example: set dest-address=10.2.3.4

Dependencies: In a Filter profile, Dest-Address applies only if Type=IP-Filter.

**Location:** Filter *filter-name* > Input-Filters > IP-Filter, Filter *filter-name* > Output-Filters > IP-Filter, IP-Route *name* 

See Also: Input-Filters, IP-Filter, Output-Filters, Type

### **Dest-Address-Mask**

**Description:** Specifies a mask to apply to the Dest-Address value before comparing the value to the destination address in a packet. You can use the Dest-Address-Mask value to hide the host portion of an address, or its host and subnet portion.

After the mask and address are both translated into binary format, the MAX TNT applies the mask to the address using a logical AND. The mask hides the portion of the address that appears behind each binary 0 (zero) in the mask.

**Usage:** Specify a mask of ones and zeros in dotted decimal notation. The default is 0.0.0.0, which masks all bits. A mask of all ones (255.255.255.255) masks no bits, and specifies the full destination address of a single host.

Example: set dest-address-mask=255.255.255.0

Dependencies: Dest-Address-Mask applies only if Type=IP-Filter.

**Location:** Filter *filter-name* > Input-Filters > IP-Filter, Filter *filter-name* > Output-Filters > IP-Filter

See Also: Input-Filters, IP-Filter, Output-Filters, Type

#### **Dest-Network**

Description: Specifies the unique internal network number for the NetWare server.

Usage: Specify a hexadecimal number of up to eight digits. The default is 00000000.

Example: set dest-network=00000001

Location: IPX-Route name

**See Also:** Active-Route, Hops, Name, Profile-Name, Server-Node, Server-Socket, Server-Type, Ticks

# Dest-Port

Description: Specifies a value to compare with the destination port in a packet.

**Usage:** Specify a number from 0 to 65535. The default is 0 (zero), which matches any port. Port 25 is reserved for SMTP, and is dedicated to receiving mail messages. Port 20 is reserved for FTP data messages, port 21 for FTP control sessions, and port 23 for Telnet.

Example: set dest-port=25

Dependencies: Consider the following:

- Dest-Port applies only if Type=IP-Filter.
- Only TCP and UDP packets contain destination ports.
- The Dst-Port-Cmp setting specifies the type of comparison the MAX TNT makes.

**Location:** Filter *filter-name* > Input-Filters > IP-Filter, Filter *filter-name* > Output-Filters > IP-Filter

See Also: Dst-Port-Cmp, Input-Filters, IP-Filter, Output-Filters, Type

# **Device-Address**

Description: Specifies a device address.

**Usage:** The device address has the format {*shelf slot item*}. Table 3-1 lists each element of the syntax.

Table 3-1.	Device-Address syntax elements
------------	--------------------------------

Syntax element	Description
shelf	Specifies the shelf in which the item resides. If you are using a sin- gle-shelf system, the shelf number is always 1. For call-routing pur- poses, a value of 0 (zero) or any-shelf specifies any shelf.
slot	Specifies the number of the item's expansion slot. Physical expansion slots are numbered from 1 to 16, starting with 1 for the slot just below the shelf-controller. The slot value 17, controller, or c specifies the shelf controller card. For call-routing purposes, a value of 0 (zero) or any-slot specifies any slot.
	For example, to address the first slot on shelf 1:
	{ 1 1 0 }
item	Specifies an item on the slot card, such as a digital modem or T1 line. Items are numbered starting with #1 for the leftmost item on the card. An item number of 0 denotes the entire slot.
	For example, to address modem #48 on a modem card in slot #2 on shelf 1:
	{ 1 2 48 }

In most cases, the Device-Address value is obtained from the system. However, you can clone a profile by reading an existing one and changing its device address. To modify the value:

```
admin> list device
shelf=shelf-1
slot=slot-9
item-number=37
admin> set shelf=shelf-2
```

```
Example: set device shelf=shelf-2
```

Location: Admin-State {shelf-*N* slot-*N N*}, Device-State {{shelf-*N* slot-*N N*} *N*}

See Also: Item-Number, Physical-Address, Shelf, Slot

## **Device-State**

Description: Indicates the current operational state of the device.

Usage: The Device-State value is read only. It can have one of the following values:

- Down-Dev-State indicates that the device is in a non-operational state.
- Up-Dev-State indicates that the device is in normal operations mode.
- None-Dev-State indicates that the device does not currently exist.

Example: device-state=up-dev-state

Location: Device-State {{shelf-*N* slot-*N N*} *N*}

See Also: Reqd-State

#### **Device-State (profile)**

**Description:** A profile that stores the current state of a device.

The MAX TNT does not store the Device-State profile in NVRAM, so the profile's setting are not persistent across system resets or power cycles. The Device-State setting may differ from the Reqd-State setting during state changes, such as when a device is being brought down. State changes are complete when the Device-State and the Reqd-State match.

Usage: To make Device-State the working profile and list its contents:

```
admin> read device {{1 4 2}15}
DEVICE-STATE/{ { shelf-1 slot-4 2 } 15 } read
admin> list
device-address*={ { shelf-1 slot-4 2 } 15 }
device-state=down-dev-state
up-status=idle-up-status
reqd-state=up-reqd-state
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> write DEVICE-STATE/{ { shelf-1 slot-4 2 } 15 } written

Dependencies: An SNMP manager can read the Device-State profile.

See Also: Device-Address, Device-State, Reqd-State, Up-Status

## **Dev-Line-State**

Description: Indicates the status of the RADSL or SDSL interface.

Usage: The Dev-Line-State value is read only.

#### **RADSL** values

For the RADSL card, Dev-Line-State can have one of the following values:

- Port-Up indicates that the RADSL connection is operating normally, and that data can be transferred between nodes.
- Test indicates that the unit is undergoing a Power-On Self Test (POST).
- Startup-Handshake indicates that the RADSL units are trying to establish a connection. The local node is waiting for the remote node's connection request. If this condition persists, the connection between the units could be faulty.
- Startup-Training indicates that the units are negotiating a connection.
- Startup-Download indicates that the unit is downloading firmware code into the RADSL card.
- Idle indicates that the unit has been reset and has not yet been downloaded.
- Down indicates that the RADSL port is down. Data cannot be transmitted between nodes. The link goes down if one of the nodes loses power or if the line quality degrades. The unit determines the line quality from the Line-Quality reading. If the difference between the Line-Quality value and the Connection-SQ value is greater than 6db for 22 seconds, the unit disconnects the line. This situation can occur when a line becomes open or when the remote unit loses power.
- Out-Of-Service indicates that the port has been administratively disabled.

#### **SDSL** values

For the SDSL card, Dev-Line-State can have one of the following values:

- Config indicates that the physical interface is being configured.
- Deactivate indicates that the interface is going to a port-down state.
- Deactive-Lost indicates that the interface is waiting for the Loss of Signal (LOS) timer to expire.
- Inactive indicates that the interface is starting up.
- Activating indicates that the interface is waiting for the remote side to start up.
- Active-RX indicates that the interface is waiting for the remote side to start a 4-level transmission.
- Port-Up indicates that the SDSL connection is operating normally, and that data can be transferred between nodes.
- Port-Up-Pending-Deactive indicates that the interface experienced an LOS or noisemargin error. This condition occurs when the line detects noise about -5db.

**Location:** ADSL-Cap-Status {shelf-*N* slot-*N N*}, SDSL-Status {shelf-*N* slot-*N N*}

**See Also:** Down-Stream-Constellation, Down-Stream-Operational-Baud, Down-Stream-Rate, Hardware-Ver, IF-Group-Index, Major-Firmware-Ver, Minor-Firmware-Ver, Physical-Address, Unit-Type, Up-Stream-Constellation, Up-Stream-Rate

## **Dial-Number**

Description: Specifies the phone number used to dial the connection.

**Usage:** Specify the phone number of the remote station. You can enter up to 24 characters. The default is null.

Example: set dial-number=510-555-1212

Location: Connection station

See Also: CalledNumber

## **Dial-On-Broadcast**

**Description:** Specifies whether the MAX TNT dials the connection when it receives Ethernet broadcast frames.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT dials the connection when it receives Ethernet broadcast frames.
- No specifies that broadcast frames do not bring up the connection.

Example: set dial-on-broadcast=yes

Dependencies: If bridging is disabled, Dial-On-Broadcast does not apply.

Location: Connection *station* > Bridging-Options

See Also: Bridging-Group, Bridging-Options

## **Dialout-Allowed**

**Description:** Specifies whether the connection can use the MAX TNT unit's digital modems to dial out.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the user can dial out on digital modems.
- No specifies that the user cannot dial out on digital modems.

Example: set dialout-allowed=yes

Location: Connection *station* > Telco-Options

See Also: Dialout-Configuration, LAN-Modem, Telco-Options

# **Dialout-Configuration**

**Description:** A subprofile that contains configuration options for modem dialout. If modem dialout is enabled, local users can dial a connection using the MAX TNT unit's digital modems. Each user can issue AT commands to the modem as if connected locally to the modem's asynchronous port.

Usage: When Terminal-Server is the working profile:

admin> **list dialout** enabled=no direct-access=no port-for-direct-access=5000

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Terminal-Server

See Also: Direct-Access, Enabled, Port-For-Direct-Access

## **Dialout-Poison**

**Description:** Specifies whether the MAX TNT should stop advertising ("poison") its IP dialout routes when no trunks are available.

Use Dialout-Poison only when two or more Ascend units on the same network are configured with redundant profiles and routes. The setting solves a problem that occurred when two or more Ascend units on the same network were configured with redundant profiles and routes. If one of the redundant MAX TNT units lost its trunks temporarily, it continued to receive outgoing packets that should have been forwarded to the redundant MAX TNT.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT stops advertising its IP dialout routes if no trunks are available.
- No specifies that the MAX TNT continues advertising its dialout routes, even if no trunks are currently available. No is the appropriate setting unless you have redundant Ascend units or don't use dialout routes.

Example: set dialout-poison=no

Location: IP-Global

See Also: RIP-Policy

## **Dial-Query**

**Description:** Specifies whether the MAX TNT places a call to the location indicated in the Connection profile when a workstation on the local IPX network looks for the nearest IPX server.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT places a call to the location specified in the Connection profile when a workstation looks for the nearest server. A workstation is likely to stop attempting to find a server before the MAX TNT establishes any connections with the Dial-Query mechanism.
- No specifies that the MAX TNT does not place a call to the location specified in the Connection profile when a workstation looks for the nearest server.

#### Example: set dial-query=yes

Dependencies: Consider the following:

- If there is an entry in the MAX TNT unit's routing table for the location specified by the Connection profile, Dial-Query has no effect.
- More than one Connection profile can set Dial-Query=Yes. As a a result, several connections can occur at the same time.

Location: Connection station > IPX-Options

See Also: IPX-Options

#### Direct

**Description:** Specifies whether PPP negotiation is initiated immediately after an interactive user enters the PPP command in the terminal-server interface.

Usage: Specify Yes or No. The default is No.

- Yes enables direct PPP negotiation.
- No specifies that the terminal server waits to receive a PPP packet before beginning PPP negotiation.

Example: set direct=no

Dependencies: If terminal services are disabled, Direct does not apply.

Location: Terminal-Server > PPP-Mode-Configuration

See Also: PPP, PPP-Mode-Configuration

#### **Direct-Access**

Description: Enables or disables direct connection to a modem for dialout.

Usage: Specify Yes or No. The default is No.

- Yes specifies that a user can access a modem by initiating a Telnet session on the port specified by Port-For-Direct-Access.
- No disables direct access.

#### Example: set direct-access=yes

Dependencies: If terminal services are disabled, Direct-Access does not apply.

Location: Terminal-Server > Dialout-Configuration

See Also: Dialout-Configuration, Port-For-Direct-Access

## **Disconnect-On-Auth-Timeout**

**Description:** Instructs the MAX TNT to disconnect a PPP connection if it times out while waiting for RADIUS authentication.

Usage: Specify Yes or No. The default is No.

- Yes causes the MAX TNT to hang up a PPP connection on a RADIUS timeout.
- No causes the MAX TNT to shut down cleanly on a RADIUS timeout.

Example: set disconnect-on-auth-timeout=yes

Location: Answer-Defaults > PPP-Answer

See Also: PPP, PPP-Answer

# DLCI

**Description:** Specifies a Data Link Connection Indicator (DLCI) number for a Frame Relay gateway or circuit connection. A DLCI is not an address, but a local label that identifies a logical link between a device and the Frame Relay switch. The switch uses the DLCI to route frames through the network, and the DLCI may change as frames are passed through multiple switches.

When the MAX TNT receives an incoming PPP call, it examines the destination address, and brings up the appropriate Connection profile to the destination, as usual. If the Connection profile specifies Frame Relay encapsulation, a Frame Relay profile, and a DLCI, the MAX TNT encapsulates the packets in Frame Relay (RFC 1490) and forwards the data stream out to the Frame Relay switch by means of the specified DLCI.

**Usage:** Specify an integer from 16 to 991. The default is 16. Ask your Frame Relay network administrator for the value you should enter.

Example: set dlci=17

**Dependencies:** If FR-Direct-Enabled=Yes, DLCI does not apply. It applies only to gateway or circuit connections in which Encapsulation-Protocol=Frame-Relay.

Location: Connection *station* > FR-Options

See Also: Encapsulation-Protocol, FR-Direct-Enabled, FR-Options

#### **DNS-List-Attempt**

**Description:** Specifies whether the MAX TNT uses the DNS list feature for Telnet and Immediate Telnet logins.

DNS can return multiple addresses for a host name in response to a DNS query. Unfortunately, DNS has no information about the availability of the hosts. A user typically attempts to access the first address in the list. If that host is unavailable, the connection fails and the user must initiate a new DNS query or Telnet attempt. If the login attempt occurs automatically as part of immediate Telnet, the MAX TNT tears down the physical connection when the initial connection attempt fails.

By enabling the user to try each entry in the DNS list of hosts when logging in, the DNS list feature helps the MAX TNT avoid tearing down physical links. If the first connection fails, the user can try each succeeding entry.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT uses the DNS list feature.
- No specifies that the MAX TNT does not use the DNS list feature.

#### Example: set dns-list-attempt=yes

**Dependencies:** If Telnet and immediate Telnet are both disabled, DNS-List-Attempt does not apply.

Location: IP-Global

See Also: DNS-List-Size, Host, Immediate-Mode-Options

#### **DNS-List-Size**

**Description:** Specifies the maximum number of hosts listed in response to a DNS query. Users logging in using Telnet or immediate Telnet see a list containing up to the specified number of hosts.

Usage: Enter a number from 0 to 35. The default is 6.

Example: set dns-list-size=10

Location: IP-Global

See Also: DNS-List-Attempt

#### **DNS-Primary-Server**

**Description:** Specifies the IP address of the primary DNS server for use on connected interfaces.

A client DNS configuration defines DNS server addresses that the MAX TNT makes accessible to WAN connections during IPCP negotiation. This type of configuration provides a way to protect your local DNS information from WAN users. If you do not configure client DNS, you can allow the MAX TNT to make your primary and secondary DNS servers available to both WAN users and users on connected networks.

**Usage:** Specify the IP address of a DNS server. The default is 0.0.0, which specifies that no local primary DNS server is available.

Example: set dns-primary-server=10.1.2.3/24

Location: IP-Global

See Also: Allow-As-Client-DNS-Info, Client-DNS-Addr-Assign, Client-DNS-Primary-Addr, Client-DNS-Secondary-Addr, Client-Primary-DNS-Server, Client-Secondary-DNS-Server, DNS-Secondary-Server

#### **DNS-Secondary-Server**

**Description:** Specifies the IP address of the secondary DNS server for use on connected interfaces. The MAX TNT accesses the secondary server if the primary server is not available.

A client DNS configuration defines DNS server addresses that the MAX TNT makes accessible to WAN connections during IPCP negotiation. This type of configuration provides a way to protect your local DNS information from WAN users. If you do not configure client DNS, you can allow the MAX TNT to make your primary and secondary DNS servers available to both WAN users and users on connected networks.

**Usage:** Specify the IP address of the secondary DNS server. The default is 0.0.0, which indicates no secondary server.

Example: set dns-secondary-server=10.57.23.11/24

Location: IP-Global

See Also: Allow-As-Client-DNS-Info, Client-DNS-Addr-Assign, Client-DNS-Primary-Addr, Client-DNS-Secondary-Addr, Client-Primary-DNS-Server, Client-Secondary-DNS-Server, DNS-Primary-Server

#### **Domain-Name**

Description: Specifies the local domain name for DNS lookups.

Usage: Specify the local domain name. The default is null.

Example: set domain-name=abc.com

Location: IP-Global

See Also: DNS-Primary-Server, DNS-Secondary-Server

#### **Domestic-Enabled**

Description: Indicates whether this MAX TNT can operate domestically.

**Usage:** The Domestic-Enabled value is read only. Yes indicates that the MAX TNT can operate domestically. No indicates that the MAX TNT cannot operate domestically.

Example: domestic-enabled=yes

Location: Base

**See Also:** AIM-Enabled, Countries-Enabled, Data-Call-Enabled, D-Channel-Enabled, Frame-Relay-Enabled, MAXLink-Client-Enabled, Modem-Dialout-Enabled, Multi-Rate-Enabled, R2-Signaling-Enabled, Switched-Enabled

## **Down-Cost**

Description: Specifies the output cost when the OSPF link is physically down but virtually up.

Usage: Specify a number greater than 0 and less than 16777215. The default is 16777215.

Example: set down-cost=1500

**Location:** Connection *station* > IP-Options > OSPF-Options, IP-Interface {shelf-*N* slot-*N N*} > OSPF

See Also: Cost, IP-Options, OSPF, OSPF-Options,

## **Down-Preference**

**Description:** Specifies the preference for an inactive IP route. The MAX TNT uses this value to determine when to bring a route online.

When choosing which route to use, the router first compares the preference values, preferring the lower number. If the preference values are equal, the router compares the metric values, using the route with the lower metric.

**Usage:** Enter a number from 0 to 214748364. The lower the preference, the more likely the MAX TNT will bring the route online.

Example: set down-preference=255

**Location:** Connection *station* > IP-Options

See Also: IP-Options, OSPF-ASE-Pref, OSPF-Pref, Preference, RIP-Pref, Static-Pref

#### **Down-Stream-Constellation**

**Description:** Indicates the operational downstream constellation. A constellation is the number of points within the digital spectrum.

**Usage:** The Down-Stream-Constellation value is read only. A value of 0 (zero) indicates that the downstream constellation is unknown. A value of 1 (one) indicates automatic.

**Location:** ADSL-Cap-Status {shelf-*N* slot-*N N*}

**See Also:** Dev-Line-State, Down-Stream-Operational-Baud, Down-Stream-Rate, Hardware-Ver, IF-Group-Index, Major-Firmware-Ver, Minor-Firmware-Ver, Physical-Address, Unit-Type, Up-Stream-Constellation, Up-Stream-Rate

## **Down-Stream-Operational-Baud**

Description: Indicates the downstream operational baud rate.

Usage: The Down-Stream-Operational-Baud setting is read only.

Location: ADSL-Cap-Status {shelf-N slot-N N}

See Also: Dev-Line-State, Down-Stream-Constellation, Down-Stream-Rate, Hardware-Ver, IF-Group-Index, Major-Firmware-Ver, Minor-Firmware-Ver, Physical-Address, Unit-Type, Up-Stream-Constellation, Up-Stream-Rate

## **Down-Stream-Rate**

Description: Indicates the downstream data rate for the RADSL or SDSL interface.

**Usage:** The Down-Stream-Rate setting is read only. A value of 0 (zero) indicates that the data rate is unknown.

**Dependencies:** RADSL and SDSL ensure maximum throughput for the particular condition of the line. The better the line quality, the higher the data rate.

**Location:** ADSL-Cap-Status {shelf-*N* slot-*N N*}, SDSL-Status {shelf-*N* slot-*N N*}

**See Also:** Dev-Line-State, Down-Stream-Constellation, Down-Stream-Operational-Baud, Hardware-Ver, IF-Group-Index, Major-Firmware-Ver, Minor-Firmware-Ver, Physical-Address, Unit-Type, Up-Stream-Constellation, Up-Stream-Rate

# **Drop-Source-Routed-IP-Packets**

**Description:** Specifies whether the MAX TNT forwards IP packets with the source-route option set.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT drops all packets that have a Loose or a Strict source route among their IP options.
- No specifies that the MAX TNT forwards all source-routed packets, as described in RFC 1812.

Example: set drop-source-routed-ip-packets=no

Location: IP-Global

See Also: IP-Global

## **DS2-State**

**Description:** An array value listing the state of each DS2 line in a DS3 line. The index to each array component is an integer from 1 to 7. The following are the possible values for DS2-State:

- Does-Not-Exist specifies that the line is not installed.
- Disabled specifies that the line is disabled.
- Loss-Of-Sync specifies that the line is in a red-alarm state.
- Yellow-Alarm specifies that the line is in a yellow-alarm state.
- AIS-Receive specifies that the line is receiving a keepalive signal.
- Active specifies that multipoint service is established on the line.

Usage: To display the individual array components when T3-Stat is the working profile:

```
admin> list ds2-state
ds2-state[1]=idle
ds2-state[2]=idle
ds2-state[3]=dialing
...
```

To close the array and return to a higher context in the T3-Stat profile:

admin> list ..

**Location:** T3-Stat {shelf-*N* slot-*N N*}

See Also: Line-State, Physical-Address

## **Dst-Port-Cmp**

**Description:** Specifies the type of comparison to use when comparing the Dest-Port value to the destination port in a packet.

Usage: Specify one of the following values:

- None (the default) specifies that the MAX TNT does not compare the packet's destination port number to the Dest-Port value.
- Less specifies that port numbers with a value less than the value specified by Dest-Port match the filter.
- Eql specifies that port numbers equal to the value specified by Dest-Port match the filter.
- Gtr specifies that port numbers with a value greater than the value specified by Dest-Port match the filter.
- Neq specifies that port numbers not equal to the value specified by Dest-Port match the filter.

#### Example: set dst-port-cmp=less

**Dependencies:** For Dst-Port-Cmp to apply, you must set Type=IP-Filter. In addition, only TCP and UDP packets contain destination ports.

**Location:** Filter *filter-name* > Input-Filters > IP-Filter, Filter *filter-name* > Output-Filters > IP-Filter

See Also: Input-Filters, IP-Filter, Output-Filters, Type

## **DSX-Line-Length**

Description: Specifies the length (in feet) of the physical T1 (DSX) line.

**Usage:** The value you specify should reflect the longest line length you expect to encounter in your installation. Specify one of the following values:

- 1-133 (the default).
- 134-266
- 267-399
- 400-533
- 534-655

#### Example: set dsx-line-length=133

**Dependencies:** If the MAX TNT has an internal Channel Service Unit (CSU) at the interface to the line, DSX-Line-Length does not apply.

**Location:** T1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Front-End-Type, Line-Interface

# **Dynamic-Algorithm**

**Description:** Specifies the algorithm to use to calculate the average link utilization (ALU) over a specified number of seconds (Seconds-History). After calculating the average, the MAX TNT compares it to the Target-Utilization value. If the average exceeds or falls below the target for a specified number of seconds, the MAX TNT adjusts the bandwidth of the connection.

Usage: Specify one of the following values:

- Quadratic (the default) gives more weight to recent samples of bandwidth usage than to older samples. The weighting grows at a quadratic rate.
- Linear gives more weight to recent samples of bandwidth usage than to older samples. The weighting grows at a linear rate.
- Constant gives equal weight to all samples.

#### Example: set dynamic-algorithm=quadratic

Location: Answer-Defaults > MPP-Answer, Connection station > MPP-Options

**See Also:** Add-Persistence, Bandwidth-Monitor-Direction, Base-Channel-Count, Decrement-Channel-Count, Increment-Channel-Count, Minimum-Channels, Maximum-Channels, MPP-Answer, MPP-Options, Seconds-History, Sub-Persistence, Target-Utilization

# Ε

E1

Description: A profile that contains configuration settings for an E1 line and its channels.

**Usage:** To make E1 the working profile and list its contents:

```
admin> read e1 {1 8 2}
E1/{ shelf-1 slot-8 2 } read
admin> list
name=trunk-1
physical-address*={ shelf-1 slot-8 2 }
line-interface={ no g703 eligible middle-priority isdn net5-pri short+
back-to-back=false
t302-timer=6000
t-online-type=te
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> write
E1/{ shelf-1 slot-8 2 } written

See Also: Back-To-Back, Line-Interface, Name, Physical-Address, T302-Timer, T-Online

## Enabled

**Description:** Enables or disables a feature or interface.

**Usage:** Specify Yes or No. The default for the Ethernet profile is Yes. The default for other profiles is No.

- Yes enables a feature or interface.
- No disables a feature or interface. If Enabled=No in the Ethernet profile, packets routed to and received by the interface are discarded.

Example: set enabled=yes

Dependencies: In some instances, features must be configured before being enabled.

**Location:** ADSL-Cap {shelf-*N* slot-*N N*}, Answer-Defaults, Connection *station*, E1 {shelf-*N* slot-*N N*}, Ethernet {shelf-*N* slot-*N N*}, IP-Global, SDSL {shelf-*N* slot-*N N*}, SNMP, Swan {shelf-*N* slot-*N N*}, T1 {shelf-*N* slot-*N N*}, T3 {shelf-*N* slot-*N N*}, Terminal-Server

**See Also:** ADSL-Cap, Answer-Defaults, Connection, E1, Ethernet, IP-Global, SDSL, SNMP, Swan, T1, T3, Terminal-Server

## **Encapsulation-Protocol**

**Description:** Specifies the encapsulation method to use for the connection. Both sides of the connection must support the specified encapsulation method. Usually, encapsulation protocols have their own configuration options within the subprofile of a Connection profile.

Usage: Specify one of the following values:

- PPP (the default) for single-channel PPP connections.
- MP (Multilink Protocol, as specified in RFC 1990) for multichannel connections with MP-compliant devices from other vendors.
- MPP (Multilink Protocol Plus) for multichannel connections with other Ascend units.
- SLIP (Serial Line IP) for asynchronous SLIP connections.
- CSLIP (compressed SLIP) for asynchronous SLIP with VJ header compression.
- Frame-Relay (Frame Relay) for gateway or circuit connections
- TCP-Raw (unencapsulated TCP) for use with a proprietary encapsulation method.
- DTPT for T-Online.

#### Example: set encapsulation-protocol=ppp

Location: Connection station

See Also: FR-Options, MP-Options, MPP-Options, PPP-Options, SLIP-Mode-Configuration, TCP-Clear-Options, V120-Answer

# Encoding

**Description:** Sets the layer-1 line encoding to use for the physical link. The Encoding value refers to the way in which data is represented by the digital signals on the line. Both sender and receiver must agree on the type of encoding in use in order to accurately interpret the value of a signal.

Usage: Specify one of the following values:

- AMI (the default) specifies Alternate Mark Inversion encoding.
- B8ZS specifies Bipolar encoding with 8-Zero Substitution. B8ZS is often required for ISDN lines (for which Signaling-Mode=ISDN).
- None specifies encoding identical to AMI, but without density enforcement.

Example: set encoding=ami

**Location:** T1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Line-Interface, Signaling-Mode

## **Enforce-Address-Security**

**Description:** Specifies whether the MAX TNT should validate the IP address of an SNMP manager attempting to access the unit. If address security is not enforced, any SNMP manager who presents the appropriate community name is allowed in.

Usage: Specify Yes or No. The default is No.

- Yes specifies that, before allowing access, the MAX TNT compares the source IP address of an SNMP manager to the host addresses specified by Read-Access-Hosts and Write-Access-Hosts.
- No specifies that the MAX TNT does not compare IP addresses, but validates SNMP access only by community name.

#### Example: set enforce-address-security=yes

**Dependencies:** You must set Enforce-Address-Security=Yes for the Read-Access-Hosts and Write-Access-Hosts settings to restrict access.

Location: SNMP

See Also: Read-Access-Hosts, Write-Access-Hosts

#### **Entry-Number**

**Description:** Specifies an entry number in the call-routing database. The MAX TNT uses the entry number to discriminate among multiple entries for the same device.

**Usage:** Specify a number greater than 0 (zero). Entry numbers do not have to be sequential, as long as they are unique.

Example: set index entry=1

**Location:** Call-Route  $\{\{ \{ shelf - N \ slot - N \ N \} \ N \} \}$ 

See Also: Index

## **Error-Count**

**Description:** Specifies the number of errors experienced, since the last reset, by a T1 line, a Swan line, an RADSL line, or an SDSL line. For a T1 line, the value is an array that indicates errors for each channel of the line.

Usage: To list the array of error counts for a T1 line:

```
admin> list error
error-count[1]=0
error-count[2]=0
error-count[3]=0
error-count[4]=0
...
```

**Location:** ADSL-Cap-Stat {shelf-*N* slot-*N N*}, BRI-Stat {shelf-*N* slot-*N N*}, SDSL-Stat {shelf-*N* slot-*N N*}, Swan-Stat {shelf-*N* slot-*N N*}, T1-Stat {shelf-*N* slot-*N N*}

See Also: ADSL-Cap-Stat, BRI-Stat, Swan-Stat, SDSL-Stat, T1-Stat

## Ether-IF-Type

Description: Indicates the type of physical Ethernet interface in use.

Usage: The Ether-IF-Type setting is read only. It can specify one of the following values:

- UTP indicates unshielded twisted pair (thin Ethernet) as specified in IEEE 802 (10Base5) Ethernet.
- AUI (Auxiliary Unit Interface) indicates a thick Ethernet transceiver as specified in IEEE 802.3 (10BaseT) Ethernet.
- Coax indicates coaxial cable.

#### Example: set ether-if-type=utp

**Location:** Ethernet {shelf-*N* slot-*N N*}

See Also: Enabled, Filter-Name, Interface-Address, Link-State, Link-State-Enabled, MAC-Address

#### Ethernet

Description: A profile that defines the physical components of a system Ethernet interface.

Usage: To make Ethernet the working profile and list its contents:

```
admin> read ethernet {1 c 1}
ETHERNET/{ shelf-1 controller 1 } read
admin> list
interface-address*={ shelf-1 controller 1 }
mac-address=00:c0:7b:5e:ad:3e
ether-if-type=utp
filter-name=""
enabled=yes
link-state=up
link-state-enabled=no
```

You can then use the Set command to modify the settings in the profile. To close the subprofile and save your changes:

```
admin> write
ETHERNET/{ shelf-1 controller 1 } written
```

**See Also:** Ether-IF-Type, Enabled, Filter-Name, Interface-Address, Link-State, Link-State-Enabled, MAC-Address

#### Expect-Callback

**Description:** Specifies whether the MAX TNT expects outgoing calls to result in a call back from the remote device.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT expects the remote device to hang up and call back. Use this setting if Ping or Telnet is in use and the MAX TNT cannot dial back to the calling device.
- No specifies that the MAX TNT does not expect callback.

Example: set expect-callback=yes

Location: Connection *station* > Telco-Options

See Also: Callback

## **External-Auth**

**Description:** A profile containing configuration options for RADIUS, TACACS, and TACACS+.

Usage: To make External-Auth the working profile and list its contents:

```
admin> read extern
EXTERNAL-AUTH read
```

```
admin> list
auth-type=radius
acct-type=none
rad-serv-enable=no
rad-auth-client={ 192.168.6.153 0.0.0.0 0.0.0.0 1645 0 redwood no 3 +
rad-acct-client={ 0.0.0.0 0.0.0.0 0.0.0.0 0 0 "" 0 0 acct-base=10 }
rad-auth-server={ 0 no rad-serv-attr-any [ 0.0.0.0 0.0.0.0 0.0.0.0 0...
tac-auth-client={ 0.0.0.0 0.0.0.0 0.0.0.0 0 0 "" 0 }
tacplus-auth-client={ 0.0.0.0 0.0.0.0 0.0.0.0 0 0 "" }
tacplus-acct-client={ 0.0.0.0 0.0.0.0 0.0.0.0 0 0 "" }
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> **write** EXTERNAL-AUTH written

See Also: Acct-Type, Auth-Type, Local-Profiles-First, Rad-Acct-Client, Rad-Auth-Client, Rad-Auth-Server, Rad-Serv-Enable, Tac-Auth-Client, TacPlus-Acct-Client, TacPlus-Auth-Client

# F

# Facility

**Description:** Specifies the Syslog daemon facility code for messages logged from the MAX TNT. See the syslog.conf manual page entry on the UNIX Syslog server for details.

Usage: Specify one of the following values:

- Local0 (the default)
- Local1
- Local2
- Local3
- Local4
- Local5
- Local6
- Local7

#### Example: set facility=local0

Dependencies: If Syslog is not enabled, Facility does not apply.

Location: Log

See Also: Host, Syslog-Enabled

## **Far-End-db-Attenuation**

Description: Indicates the attenuation of the signal received from the remote end.

Usage: The Far-End-db-Attenuation setting is read only.

**Location:** SDSL-Statistics {shelf-*N* slot-*N N*}

See Also: Line-Quality, Line-Up-Timer, Physical-Address, RX-Signal-Present, Self-Test, Up-Down-Cntr

## FDL

**Description:** Specifies the Facilities Data Link (FDL) protocol that the telephone company uses to monitor the quality and performance of a T1 line. The protocol provides information at regular intervals to your carrier's maintenance devices.

Usage: Specify one of the following values:

- None (the default) disables FDL signaling.
- AT&T specifies AT&T FDL signaling.
- ANSI specifies ANSI FDL signaling.
- Spring specifies Sprint FDL signaling.

#### Example: set fdl=at&t

**Dependencies:** FDL does not apply to D4-framed T1 lines. However, even if you do not choose an FDL protocol, the MAX TNT accumulates D4 and ESF performance statistics in the FDL Stats windows.

**Location:** T1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Frame-Type, Line-Interface

## Filter

Description: A profile that specifies filter rules for an interface.

When you apply a filter to an interface, the MAX TNT monitors the data stream and takes a specified action when packet contents match the filter rules. Depending on how you define the filter, it might apply to incoming packets, outgoing packets, or both. In addition, filter rules can specify the action to take (such as forward or drop) on packets that match the rules, or on all packets *except* those that match the rules.

Usage: To create a new filter and list its contents:

```
admin> new filter test-name
FILTER/test-name read
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> **write** FILTER/test-name written

See Also: Call-Filter, Data-Filter, Filter-Name, Filter-Persistence, Input-Filters, Output-Filters

# **Filter-Name**

**Description:** Specifies the name of a Filter profile. In a Filter profile, the name you assign becomes the Filter profile's index. In an Ethernet profile, the name specifies the data filter that the MAX TNT applies to the Ethernet interface.

Usage: Specify a filter name of up to 16 characters. The default is null.

Example: set filter-name=ip-spoof

Location: Ethernet {shelf-N slot-N N}, Filter filter-name

See Also: Call-Filter, Data-Filter, Filter-Persistence

## **Filter-Persistence**

**Description:** Specifies whether filters persist across state changes. A state change occurs when a connection temporarily goes down because of inactivity on the line.

Usage: Specify Yes or No. The default is No.

- Yes specifies that filters persist across state changes.
- No specifies that filters do not persist across state changes.

#### Example: set filter-persistence=yes

Location: Answer-Defaults > Session-Info, Connection station > Session-Options

See Also: Call-Filter, Data-Filter, Filter, Filter-Name, Session-Info, Session-Options

## Firewall

**Description:** A profile created when you upload a firewall by means of the Secure Access Manager.

Usage: To make Firewall the working profile and list its contents:

admin> read firewall foo
Firewall/foo read
admin> list
name\*=foo
version=2
data=[ ACAfiwgAAAAAAADE2RmZDTiz0zOLeDkBAAFTVl4DAAAAA== ]

See Also: Data, Name, Version

## **Flow-Control**

Description: Specifies the flow control method used on the serial port.

Usage: Specify one of the following values:

- None (the default)
- Xon-Xoff
- Hardware-Handshake

Example: set flow-control=xon-xoff

**Location:** Serial {shelf-*N* slot-*N N*}

See Also: Serial

## Force-56kbps

**Description:** Specifies whether the MAX TNT uses only the 56-kbps portion of a channel, even when all 64 kbps appear to be available.

Use Force-56kbps when you place calls to European or Pacific Rim countries from within North America, and the complete path cannot distinguish between the Switched-56 and Switched-64 data services. You need not set this value for calls within North America.

Usage: Specify Yes or No. The default is No.

- Yes causes the MAX TNT to use only the 56-kbps portion of a channel.
- No specifies that the MAX TNT uses the full 64kbps, if it is available.

Example: set force-56kbps=no

Location: Answer-Defaults, Connection station > Telco-Options

See Also: Data-Service, Telco-Options

## Forward

**Description:** Specifies the forwarding action for a filter. For a data filter, the Forward value specifies whether the MAX TNT forwards or drops packets that match the filter rules. For a call filter, the Forward value specifies whether matching packets reset the session timer or bring up a connection.

**Usage:** Specify Yes or No. When no filters are in use, the MAX TNT forwards all packets by default. When a filter is in use, the MAX TNT discards all packets by default.

- Yes specifies that the MAX TNT forwards packets that match the filter rules.
- No specifies that the MAX TNT does not forward packets that match the filter rules.

Example: set forward=yes

Location: Filter *filter-name* > Input-Filters, Filter *filter-name* > Output-Filters

See Also: Input-Filters, Input-Filters N, Output-Filters, Output-Filters N

# **Framed-Only**

Description: Specifies whether an incoming call must use a framed protocol.

Usage: Specify Yes or No. The default is No.

- Yes specifies that an incoming call must use a framed protocol.
- No specifies that an incoming need not use a framed protocol.

#### Example: set framed-only=yes

Location: Answer-Defaults, Connection station

See Also: Encapsulation-Protocol, Frame-Length, Frame-Type, Protocol

# Frame-Length Description: Specifies the frame length to use for incoming V.120 calls. Usage: Specify an integer from 30 to 260. The default is 256, which enables the MAX TNT to operate with an AT&T ISDN phone without reconfiguration. Example: set frame-length=260 Location: Answer-Defaults > V120-Answer See Also: Encapsulation-Protocol, Framed-Only, Frame-Type, V120-Answer Frame-Relay Description: A profile that specifies the datalink to a Frame Relay switch or Customer Premises Equipment (CPE). Usage: To create a new Frame-Relay profile and list its contents: admin> new frame-relay pacbell FRAME-RELAY/pacbell read admin> list fr-name\*=pacbell active=no nailed-up-group=32769 nailed-mode=ft1 called-number-type=national switched-call-type=56k-restricted phone-number="" billing-number="" transit-number="" link-mgmt=none call-by-call-id=0 n391-val=6 n392-val=3 n393-val=4 t391-val=10 t392-val=15 mru=1532 fr-type-val=dte dceN392-val=3 dceN393-val=4 You can then use the Set command to modify the settings in the profile. To close the profile and save your changes: admin> write FRAME-RELAY/pacbell written See Also: Active, Billing-Number, Call-By-Call-ID, Called-Number-Type, DCEN392-Val,

See Also: Active, Billing-Number, Call-By-Call-ID, Called-Number-Type, DCEN392-Val, DCEN393-Val, FR-Name, FR-Type-Val, Link-Mgmt, MRU, N391-Val, N392-Val, N393-Val, Nailed-Mode, Nailed-Up-Group, Phone-Number, Switched-Call-Type, T391-Val, T392-Val, Transit-Number

### Frame-Relay-Enabled

Description: Indicates whether Frame Relay is enabled on this MAX TNT unit.

**Usage:** The Frame-Relay-Enabled setting is read only. Yes indicates that Frame Relay is enabled. No indicates that Frame Relay is not enabled.

#### Example: frame-relay-enabled=no

Location: Base

See Also: Frame-Relay

#### Frame-Relay-Profile

**Description:** Specifies the name of the Frame-Relay profile to use for a gateway or circuit connection to the Frame Relay network.

**Usage:** Specify the name of a Frame-Relay profile, exactly as specified by the FR-Name value, including case changes.

Example: set frame-relay-profile=att-dce

**Dependencies:** If FR-Direct-Enabled=Yes, Frame-Relay-Profile does not apply. The Frame-Relay-Profile setting applies only to gateway or circuit connections in which Encapsulation-Protocol=Frame-Relay.

Location: Connection station > FR-Options

See Also: Encapsulation-Protocol, FR-Direct-Enabled, FR-Name, FR-Options

#### Frame-Type

**Description:** Specifies the framing mode in use on the physical links of a T1, E1, or DS3 line. Your carrier can tell you which framing mode to choose.

Usage: For a T1 or E1 line, specify one of the following values:

- D4 specifies the superframe format, which consists of 12 consecutive frames, separated by framing bits. Do not use this setting with ISDN D-channel signaling (when Signal-ing-Mode=ISDN). False framing and yellow-alarm emulation can result.
- ESF specifies the Extended Superframe Format, which consists of 24 consecutive frames, separated by framing bits. The ISDN specification advises that you use ESF with ISDN D-channel signaling (when Signaling-Mode=ISDN).

An E1 line supports the following additional Frame-Type values:

- G703 specifies the standard framing mode used by most E1 ISDN providers.
- 2DS specifies a variant of G.703 required by most E1 DPNSS providers in the U.K.

A DS3 line supports only the following values:

- M13 specifies an M23 application.
- C-Bit-Parity specifies a C-bit parity application.

#### Example: set frame-type=esf

**Location:** E1 {shelf-N slot-N N} > Line-Interface, T1 {shelf-N slot-N N} > Line-Interface, T3 {shelf-N slot-N N}

See Also: Framed-Only, Line-Interface, Signaling-Mode

## **FR-Answer**

**Description:** A subprofile in the Answer-Defaults profile. The FR-Answer subprofile can enable the MAX TNT to answer incoming connections that use Frame Relay encapsulation.

Usage: When Answer-Defaults is the working profile:

admin> **list fr-answer** enabled=yes

You can then use the Set command to modify the setting in the subprofile. To close the subprofile and return to a higher context in the working profile, type:

admin> list ..

Location: Answer-Defaults

See Also: Enabled

## **FR-Direct-Enabled**

Description: Specifies the MAX TNT uses the connection for Frame Relay redirect.

In a redirect connection, the MAX TNT simply "attaches" a Permanent Virtual Circuit (PVC) to multiple Connection profiles. Any packet coming into the MAX TNT on one of the connections gets switched to the Data Link Connection Indicator (DLCI). In this mode, the MAX TNT allows multiple Connection profiles to specify the same DLCI.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT uses the connection for Frame Relay redirect.
- No specifies that the MAX TNT does not use the connection for Frame Relay redirect.

Example: set fr-direct-enabled=yes

Dependencies: If Encapsulation-Protocol=Frame-Relay, FR-Direct-Enabled does not apply.

Location: Connection *station* > FR-Options

See Also: Encapsulation-Protocol, FR-DLCI, FR-Options, FR-Profile

# FR-DLCI

Description: Specifies a Frame Relay DLCI number to use for redirect connections.

**Usage:** Specify the DLCI obtained from the Frame Relay administrator for redirect links. The default is null. More than one redirected PPP connection can share an FR-DLCI number.

Example: set fr-dlci=72

**Dependencies:** If FR-Direct-Enabled=No, FR-DLCI does not apply. In addition, FR-DLCI does not apply to gateway or circuit connections in which Encapsulation-Protocol is set to Frame-Relay.

Location: Connection station > FR-Options

See Also: Encapsulation-Protocol, FR-Direct-Enabled, FR-Options, FR-Profile

## **FR-Name**

Description: Specifies the name of a Frame-Relay profile.

**Usage:** Specify a name for the profile. The name must be unique and cannot exceed 15 characters. The default is null.

Example: set fr-name=att-dce

**Location:** Frame-Relay *fr-name* 

See Also: Frame-Relay-Profile

#### Front-End-Type

Description: Specifies the front-end type of the T1 or E1 transceiver.

Usage: For a T1 line, specify one of the following values:

- CSU specifies a Channel Service Unit, a device that ensures that only clean signals go out on the line,
- DSX specifies Digital Signal Cross-Connect interfaces for connecting DS1 and DS3 signals.

For an E1 line, specify one of the following values:

- Long-Haul (120 Ohm termination only)
- Short-Haul

Example: set front-end-type=csu

Location: E1 {shelf-*N* slot-*N N*} > Line-Interface, T1 {shelf-*N* slot-*N N*} > Line-Interface,

See Also: CSU-Build-Out, DSX-Line-Length, Line-Interface

#### **FR-Options**

Description: A subprofile containing settings for Frame Relay connections.

**Usage:** When Connection is the working profile:

```
admin> list fr-options
frame-relay-profile=""
dlci=16
circuit-name=""
fr-direct-enabled=no
fr-profile=""
fr-dlci=16
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile, type:

admin> list ..

Dependencies: Frame Relay calls must be enabled in the Answer-Defaults profile.

Location: Connection station

See Also: Circuit-Name, DLCI, Frame-Relay-Profile, FR-Direct-Enabled, FR-DLCI, FR-Profile

# **FR-Profile**

**Description:** Specifies the name of the Frame-Relay profile to use for a redirect connection to the Frame Relay network.

**Usage:** Specify the name of a configured Frame-Relay profile, exactly as specified by the FR-Name setting, including case changes.

Example: set fr-profile=att-dce

**Dependencies:** For FR-Profile to apply, you must set FR-Direct-Enabled=Yes. FR-Profile does not apply to gateway or circuit connections in which Encapsulation-Protocol is set to Frame-Relay.

**Location:** Connection *station* > FR-Options

See Also: Encapsulation-Protocol, FR-Direct-Enabled, FR-DLCI, FR-Options

## FR-Type-Val

**Description:** Specifies a UNI-DCE or UNI-DTE interface. The UNI (User to Network Interface) is the interface between an end-user and a network endpoint (a router or a switch) on the Frame Relay network. A DCE (Data Circuit-Terminating Equipment) is a device that connects the DTE (Data Terminal Equipment) to a communications channel, such as a telephone line. A DTE refers to a device that an operator uses, such as a computer or a terminal.

Usage: Specify one of the following values:

- DCE specifies a UNI-DCE connection. The MAX TNT operates as a Frame Relay router communicating with a DTE device. To the DTE device, MAX TNT appears as a Frame Relay network endpoint.
- DTE specifies a UNI-DTE connection. The MAX TNT operates as a DTE communicating with a Frame Relay switch, and performs the DTE functions specified for link management.

#### Example: set fr-type-val=dte

Location: Frame-Relay fr-name

See Also: DCEN392-Val, DCEN393-Val, N391-Val, N392-Val, N393-Val, T391-Val, T392-Val

# FT1-Caller

Description: Specifies whether the MAX TNT initiates fractional T1 calls.

Usage: Specify Yes or No. The default is No.

- Yes enables the MAX TNT to initiate the FT1 call. The MAX TNT dials to bring online any switched circuits that are part of the call.
- No specifies that the MAX TNT cannot originate the FT1 call.

Example: set ft1-caller=yes

**Dependencies:** The FT1-Caller value applies when both nailed-up and switched channels are in use for the connection (that is, when Call-Type=FT1-MPP). Only one side of the connection should have FT1-Caller set to Yes.

Location: Connection station > Telco-Options

See Also: Call-Type, Telco-Options

# G

## **Gateway-Address**

**Description:** Specifies the address of the next-hop router the MAX TNT uses to reach the destination address specified by a static route. A next-hop router is directly connected to the MAX TNT on the Ethernet, or is one hop away on a WAN link.

**Usage:** Specify the IP address of the router the MAX TNT uses to reach the target host for the route. The default is 0.0.0.0.

Example: set gateway-address=10.207.23.1

Location: IP-Route name

See Also: Dest-Address

# **Gen-Filter**

Description: A subprofile containing a generic filter specification.

Usage: When Filter is the working profile:

```
admin> list input 1 gen-filter

offset=2

len=8

more=no

comp-neq=no

mask=0f:ff:ff:ff:00:00:00:f0:00:00:00:00

value=07:fe:45:70:00:00:00:90:00:00:00:00
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Filter *filter-name* > Input-Filters, Filter *filter-name* > Output-Filters

See Also: Comp-Neq, Input-Filters, Input-Filters N, Len, Mask, More, Offset, Output-Filters, Output-Filters N, Value

## **GMT-Offset**

**Description:** Specifies your time zone as an offset from the Universal Time Configuration (UTC). The GMT-Offset setting enables the MAX TNT to update its system time from an SNTP server.

UTC is in the same time zone as Greenwich Mean Time (GMT), and the offset is specified in hours, using a 24-hour clock. Because some time zones, such as Newfoundland, cannot use an even-hour boundary, the offset includes four digits and is specified in half-hour increments. For example, in Newfoundland the time is 1.5 hours ahead of UTC, so GMT-Offset is represented as follows:

UTC+0130

For San Francisco, which is eight hours ahead of UTC:

UTC+0800
For Frankfurt, which is one hour behind UTC:

UTC-0100

Usage: Specify one of the following values to represent your time zone:

UTC-1130 UTC-1100 UTC-1030 UTC-1000 UTC-0930 UTC-0900 UTC-0830 UTC-0800 UTC-0730 UTC-0700 UTC-0630 UTC-0600 UTC-0530 UTC-0500 UTC-0430 UTC-0400UTC-0330 UTC-0300 UTC-0230 UTC-0200 UTC-0130 UTC-0100 UTC-0030 UTC+0000 UTC+0030 UTC+0100 UTC+0130 UTC+0200 UTC+0230 UTC+0300 UTC+0330 UTC+0400 UTC+0430 UTC+0500 UTC+0530 UTC+0600 UTC+0630 UTC+0700 UTC+0730 UTC+0800 UTC+0830 UTC+0900 UTC+0930 UTC+1000 UTC+1030 UTC+1100 UTC+1130 UTC+1200

Example: set gmt-offset=utc+0800

Location: IP-Global > SNTP-Info

See Also: Enabled, Host, SNTP-Info

# **Group-II-Signal**

**Description:** Specifies the group-II signal that the MAX TNT sends after sending all address digits.

**Usage:** Specify Signal-II-1, Signal-II-2, and so on, up to Signal-II-15. The default is Signal-II-2.

Example: set group-ii-signal=signal-ii-2

**Location:** E1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Group-B-Signal, Line-Interface

# **Group-B-Signal**

Description: Specifies the group-B signal that the MAX TNT sends before answering a call.

**Usage:** Specify Signal-B-1, Signal-B-2, and so on, up to Signal-B-15. The default is Signal-B-6.

Example: set group-b-signal=signal-b-6

**Location:** E1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Group-II-Signal, Line-Interface

# Η

Hardware-Ver									
	Description: Indicates the hardware version of the RADSL or SDSL card.								
	Usage: The Hardware-Ver setting is read only.								
	Location: ADSL-Cap-Status {shelf-N slot-N N}, SDSL-Status {shelf-N slot-N N}								
	See Also: Dev-Line-State, Down-Stream-Constellation, Down-Stream-Operational-Baud, Down-Stream-Rate, IF-Group-Index, Major-Firmware-Ver, Minor-Firmware-Ver, Physical-Address, Unit-Type, Up-Stream-Constellation, Up-Stream-Rate								
HDLC-RX-CRC	-Error-Cnt Description: Indicates the number of HDLC-receive CRC errors.								
	Usage: The HDLC-RX-CRC-Error-Cnt setting is read only.								
	<b>Location:</b> ADSL-Cap-Statistics {shelf- <i>N</i> slot- <i>N N</i> }								
	See Also: Connection-SQ, Line-Quality, Line-Up-Timer, Physical-Address, RS-Corrected-Errors, RS-Errors, RX-Attenuation, RX-Signal-Present, Self-Test, Transmit-Power, Up-Down-Cntr								
Hello-Interval									
	<b>Description:</b> Specifies the number of seconds between the Hello packets that the OSPF router sends on the interface.								
	<b>Usage:</b> Specify an integer. The default is 10 seconds for connected routes, and 30 seconds for WAN connections.								
	Example: set hello-interval=30								
	<b>Location:</b> Connection <i>station</i> > IP-Options > OSPF-Options, IP-Interface {{shelf- <i>N</i> slot- <i>N N</i> } <i>N</i> } > OSPF								
	See Also: Dead-Interval, IP-Options, OSPF, OSPF-Options								
Hops									
	<b>Description:</b> Specifies the distance to the destination network, in hops.								
	Usage: Specify a value from 1 to 8. The default is 8.								
	Location: IPX-Route name								
	See Also: Active-Route, Dest-Network, Name, Profile-Name, Server-Node, Server-Socket, Server-Type, Ticks								

# Host

Description: Specifies the DNS host name or address of a host on the network:

- In a Connection profile, the Host value specifies the name of a login host to use for TCP-Clear connections. When the MAX TNT authenticates a connection, it immediately directs the data stream to the specified host.
- In the IP-Global profile, the Host value is an array of IP addresses for up to three SNTP servers.
- In the Log profile, the Host value specifies the IP address of a UNIX Syslog server.
- In the Terminal-Server profile, the Host value specifies the name, IP address, or X.121 address of the host to use for immediate service. When the MAX TNT authenticates a connection, it immediately directs the data stream to the specified host.

Usage: Your usage varies depending on the profile>

- For a Connection profile, specify the name of a login host to use for TCP-Clear connections. You can enter up to 32 characters. The default is null.
- For the IP-Global profile, specify up to three IP addresses of SNTP servers. The default is 0.0.0.0.
- For the Log profile, specify the IP address of a UNIX Syslog server. The default is 0.0.0.0.
- For the Terminal-Server profile, specify the name, IP address, or X.121 address of the host to use for immediate service. The default is a null string or null address.

```
Example: set host=10.2.3.4/24
```

**Location:** Connection *station* > TCP-Clear-Options, Log, IP-Global > SNTP-Info Terminal-Server > Immediate-Mode-Options,

**See Also:** Facility, Immediate-Mode-Options, Port, Service, SNTP-Info, Syslog-Enabled, TCP-Clear-Options, Telnet-Host-Auth

# Host-N(N=1-4)

**Description:** Specifies the IP addresses of the Telnet hosts the MAX TNT displays in the terminal-server menu. You can specify up to four host addresses. If the user cannot use the terminal-server command-line interface, the hosts you specify are the only ones to which the user has access.

**Usage:** Specify an IP address in dotted decimal notation. Separate the optional subnet mask from the address by using a forward slash. The default is 0.0.0.

Example: set host-1=10.1.2.3/29

**Dependencies:** If terminal services are disabled, Host-*N* does not apply. In addition, the MAX TNT ignores the host addresses if Remote-Configuration=Yes. If you want to specify more than four addresses, you must do so in RADIUS.

Location: Terminal-Server > Menu-Mode-Options

See Also: Menu-Mode-Options, Remote-Configuration

# **Host-Address**

Description: Specifies the address to which the MAX TNT sends trap-PDUs.

**Usage:** Specify an IP address in dotted decimal notation. The default is 0.0.0.0. If Host-Address is set to the 0.0.0.0 and DNS (or YP/NIS) is supported, the MAX TNT looks up the host address and sends trap-PDUs. If Host-Address is set to 0.0.0.0 and Community-Name is null, traps are disabled

Example: set host-address=10.2.3.4/24

Location: Trap host-name

See Also: Alarm-Enabled, Community-Name, Host-Name, Port-Enabled, Security-Mode

# Host-Name

**Description:** Specifies the host name of a station running SNMP manager utilities. The MAX TNT sends SNMP traps to the host you specify.

**Usage:** Specify a host name of up to 16 characters. The default is null. When DNS or YP/NIS is supported, but Host-Address is not specified, the MAX TNT uses the host name to look up the LAN address of the SNMP manager.

Example: set host-name=sparky

Dependencies: If Host-Address is set, the MAX TNT does not use the Host-Name value.

Location: Trap host-name

See Also: Alarm-Enabled, Community-Name, Host-Address, Port-Enabled, Security-Mode

# 

Idle-Loaout											
	<b>Description:</b> Specifies the number of seconds a Telnet session can remain logged in with no keyboard activity.										
	<b>Usage:</b> Specify a number of seconds. The default is 0 (zero), which specifies that the station can remain logged in indefinitely.										
	Example: set idle-logout=60										
	Location: System, User name										
	See Also: Auto-Logout, Idle-Mode, Idle-Timer										
ldle-Mode											
	<b>Description:</b> Specifies whether the D channel looks for a flag pattern (01111110) or a mark pattern (11111111) as the idle indicator.										
	<ul><li>Usage: Specify one of the following values:</li><li>Flag-Idle (the default) specifies that the D channel looks for a flag pattern.</li></ul>										
	<ul> <li>Flag-Idle (the default) specifies that the D channel looks for a flag pattern.</li> <li>Mark Idle specifies that the D channel looks for a mark pattern.</li> </ul>										
	• Mark-Idle specifies that the D channel looks for a mark pattern.										
	Example: set idle-mode=flag-idle										
	<b>Location:</b> T1 {shelf- $N$ slot- $N$ N} > Line-Interface										
	See Also: Idle-Logout, Idle-Timer, Line-Interface										
Idle-Timer											
	<b>Description:</b> Specifies the number of seconds the MAX TNT waits before clearing a call when a session is inactive. The Idle-Timer value applies only to sessions in which the MAX TNT transmits data in packets through the bridge/router to the WAN connection.										
	<b>Usage:</b> Specify a number from 0 to 65535. The default setting is 120 seconds. Using a value of 0 (zero) disables the idle timer										
	Example: set idle-timer=30										
	<b>Dependencies:</b> Idle-Timer does not apply to nailed-up or terminal-server connections. For a terminal-server connection, use TS-Idle-Timer.										
	Location: Answer-Defaults > Session-Info, Connection station > Session-Options										
	See Also: Call-Filter, Data-Filter, Filter-Persistence, Session-Info, Session-Options, TS-Idle-Timer										

# **IF-Group-Index**

Description: Indicates the SNMP interface group index assigned to the port.

Usage: The IF-Group-Index setting is read only.

Location: ADSL-Cap-Status {shelf-N slot-N N}, SDSL-Status {shelf-N slot-N N}

See Also: Dev-Line-State, Down-Stream-Constellation, Down-Stream-Operational-Baud, Down-Stream-Rate, Hardware-Ver, Major-Firmware-Ver, Minor-Firmware-Ver, Physical-Address, Unit-Type, Up-Stream-Constellation, Up-Stream-Rate

#### **IF-Remote-Address**

Description: Specifies the IP address of the numbered interface at the remote end of a link.

**Usage:** Specify the IP address of the numbered interface in dotted decimal notation. The default is 0.0.0.0.

**Dependencies:** For IF-Remote-Address to apply, you must enable IP for the Connection profile.

**Location:** Connection *station* > IP-Options

See Also: IP-Options

#### Ignore-Def-Route

**Description:** Specifies whether the MAX TNT ignores the default route when updating its routing table by means of RIP updates.

The default route specifies a static route to another IP router, which is often a local router. When you configure the MAX TNT to ignore the default route, RIP updates do not modify the default route in the MAX TNT routing table.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT ignores advertised default routes. Ascend recommends that you specify Yes.
- No specifies that the MAX TNT can modify its default route based on RIP updates.

Example: set ignore-def-route=yes

Location: IP-Global

See Also: Client-Default-Gateway, RIP

#### Ignore-ICMP-Redirects

Description: Specifies whether the MAX TNT processes incoming ICMP redirect packets.

ICMP redirects are one of the oldest route-discovery mechanisms on the Internet, and one of the least secure, because they can be used to redirect packets dynamically. Most secure sites configure the MAX TNT to ignore redirect packets.

Usage: Specify Yes or No. The default is No.

- Yes causes the MAX TNT to ignore ICMP redirect packets.
- No causes the MAX TNT to process ICMP redirect packets.

Example: set ignore-icmp-redirects=yes

Location: IP-Global

See Also: OSPF-ASE-Pref, OSPF-Pref, Preference, RIP-Pref, Static-Pref

#### Immediate-Mode-Options

**Description:** A subprofile containing terminal-server configuration options for immediate mode. In immediate mode, the MAX TNT makes a connection to an IP host immediately upon login.

Usage: When Terminal-Server is the working profile:

```
admin> list imm
service=none
telnet-host-auth=no
host=""
port=0
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

```
admin> list ..
```

Location: Terminal-Server

See Also: Host, Port, Service, Telnet-Host-Auth

#### Increment-Channel-Count

**Description:** Specifies the number of channels the MAX TNT adds when bandwidth changes manually or automatically during a call.

Usage: Specify an integer from 1 to 32. The default is 1.

Example: set increment-channel-count=3

**Location:** Answer-Defaults > MPP-Answer, Connection *station* > MPP-Options

**See Also:** Add-Persistence, Bandwidth-Monitor-Direction, Base-Channel-Count, Decrement-Channel-Count, Dynamic-Algorithm, Minimum-Channels, Maximum-Channels, MPP-Answer, MPP-Options, Seconds-History, Sub-Persistence, Target-Utilization

## Index

**Description:** Specifies the address of the device that should receive the call. It indicates "if the call information matches this profile, route the call to me."

The Index setting contains an entry number in the following format:

{{{shelf slot port} logical-item } entry }

A zero in any field specifies "any" (that is, it matches any shelf, slot, port, or item). For more information, see "Interface-Address" on page 3-102.

**Usage:** If you have only one Call-Route profile for the specified address, accept the default of 0 (zero) for the entry number. When you specify the same address in more than one Call-Route profile, you must assign a non-zero entry number to distinguish the entries from one another in the database. You can assign any number, as long as it is unique for each entry. The entry numbers do not have to be sequential.

	You can use the Index setting to clone profiles by reading an existing one and changing the device address. You can also create multiple entries for a device by reading an existing profile and setting a new entry number.										
	Example: set index entry=1										
	Location: Call-Route {{{shelf-N slot-N N} N} N}										
	<b>See Also:</b> Call-Route-Type, Entry-Number, Interface-Address, Phone-Number, Preferred-Source, Trunk-Group										
Info											
	<b>Description:</b> Specifies the PPP startup message. If you specify a value, the MAX TNT displays it when an interactive user initiates a PPP session from the terminal-server interface.										
	<ul> <li>Usage: Specify one of the following values:</li> <li>None specifies that no startup message appears.</li> <li>Mode-PPP specifies that the startup message displays PPP Mode.</li> </ul>										
	• Session-PPP (the default) specifies that the startup message displays PPP Session.										
	Example: set info=mode-ppp Dependencies: If terminal services are disabled, Info does not apply. Location: Terminal-Server > PPP-Mode-Configuration										
	See Also: IP-Add-Msg, PPP, PPP-Mode-Configuration										
Input-Filters											
	Description: A subprofile containing 12 input-filter configuration subprofiles.										
	Usage: When Filter is the working profile:										
	<pre>admin&gt; list input input-filters[1]={ no no generic-filter { 0 0 no no 00:00:00:00:00:+ input-filters[2]={ no no generic-filter { 0 0 no no 00:00:00:00:00:+ input-filters[3]={ no no generic-filter { 0 0 no no 00:00:00:00:00:+ input-filters[4]={ no no generic-filter { 0 0 no no 00:00:00:00:00:+ </pre>										
	To close the Input-Filters subprofile and return to a higher context in the profile:										
	admin> list										
	Location: Filter <i>filter-name</i>										
	See Also: Filter-Name, Input-Filters N, Output-Filters, Output-Filters N										

## Input-Filters *N*

Description: A subprofile containing the first level of an input-filter specification.

Usage: When Filter is the working profile:

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

```
admin> list ..
```

Location: Filter filter-name

See Also: Forward, Gen-Filter, IP-Filter, Type, Valid-Entry

# Interface-Address

**Description:** Identifies an interface address using the following format:

{{shelf slot item} logical-item }

This format specifies the physical address and a logical item. For details on the physical address format, see "Physical-Address." The logical item number is 0 (zero), except when the device is further divided, such as for a channelized T1 line. For a T1 line, each channel can have its own logical item number (1-24).

**Usage:** In most cases, the Interface-Address value is obtained from the system. However, you can clone a profile by reading an existing one and changing its device address. To modify the value:

```
admin> list interface
physical-address={ shelf-1 slot-8 5 }
logical-item=0
```

admin> **set logical-item=11** 

```
Example: set interface logical-item=11
```

**Location:** Ethernet {shelf-*N* slot-*N N*}, IP-Interface {{shelf-*N* slot-*N N*}, IPX-Global, IPX-Interface {shelf-*N* slot-*N N*}

See Also: Device-Address, Item-Number, Physical-Address, Shelf, Slot

#### IP-Add-Msg

**Description:** Specifies a string that precedes the IP address when a terminal-server user initiates a PPP session.

Usage: Specify a text string of up to 20 characters. The default is IP address is: .

Example: set ip-add-msg="Your IP address is: "

Dependencies: If terminal services are disabled, IP-Add-Msg does not apply.

Location: Terminal-Server > Terminal-Mode-Configuration

	See Also: Info, Terminal-Mode-Configuration											
IP-Address												
	Description: Assigns an IP address to an Ethernet interface.											
	Usage: Specify an IP address in dotted decimal notation. The default is 0.0.0.0.											
	Example: set ip-address=10.2.3.4/24											
	Location: IP-Interface { { shelf-N slot-N N } N }											
	See Also: IP-Direct, IP-Route, IP-Routing-Enabled											
IP-Answer												
	<b>Description:</b> A subprofile containing default settings for IP calls, regardless of their encapsulation protocol.											
	Usage: When Answer-Defaults is the working profile:											
	<pre>admin&gt; list ip-answer enabled=yes vj-header-prediction=yes assign-address=yes routing-metric=1</pre>											
	You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:											
	subprofile and return to a higher context in the working profile: admin> list											
	Location: Answer-Defaults											
	See Also: Assign-Address, Enabled, Routing-Metric, VJ-Header-Prediction											
IP-Direct												
	<b>Description:</b> Specifies the address to which the MAX TNT immediately directs all incoming IP traffic on the link, without consulting the IP-routing table. If you enable RIP updates in both directions, the MAX TNT keeps all RIP packets locally and forwards them to the IP address you specify.											
	<b>Usage:</b> Specify an IP address in dotted decimal notation. The default is 0.0.0, which disables IP-Direct routing.											
	Example: set ip-direct=10.1.2.3/24											
	<b>Dependencies:</b> When you use IP-Direct routing, a remote user cannot establish a Telnet session directly to the MAX TNT.											
	<b>Location:</b> Connection <i>station</i> > IP-Options											
	See Also: IP-Address, IP-Options, IP-Route, IP-Routing-Enabled											

# **IP-Filter**

Description: A subprofile containing an IP filter specification.

Usage: When Filter is the working profile:

```
admin> list input 1 ip-filter
protocol=0
source-address-mask=255.255.255.192
source-address=192.100.50.128
dest-address=0.0.0.0
dest-address=0.0.0.0
Src-Port-Cmp=none
source-port=0
Dst-Port-Cmp=none
dest-port=0
tcp-estab=no
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Filter *filter-name* > Input-Filters, Filter *filter-name* > Output-Filters

See Also: Dest-Address, Dest-Address-Mask, Dest-Port, Dst-Port-Cmp, Input-Filters N, Output-Filters N, Protocol, Source-Address, Source-Address-Mask, Source-Port, Src-Port-Cmp, TCP-Estab

# **IP-Global**

Description: A profile that contains global settings for TCP/IP.

Usage: To make IP-Global the working profile and list its contents:

```
admin> read ip-g
IP-GLOBAL read
admin> list
domain-name=abc.com
dns-primary-server=10.65.212.178
dns-secondary-server=0.0.0.0
system-ip-addr=0.0.0.0
soft-ip-interface-addr=0.0.0.0
netbios-primary-ns=0.0.0.0
netbios-secondary-ns=0.0.0.0
must-accept-address-assign=no
pool-summary=no
pool-base-address=[ 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0
0.0.0.0 0+
assign-count=[ 0 0 0 0 0 0 0 0 0 0 ]
pool-name=""
rip-policy=Poison-Rvrs
summarize-rip-routes=no
bootp-enabled=no
ignore-icmp-redirects=no
drop-source-routed-ip-packets=no
ignore-def-route=yes
```

```
rarp-enabled=no
udp-cksum=yes
tcp-timeout=0
dialout-poison=no
telnet-password=""
user-profile=""
shared-prof=no
dns-list-attempt=no
static-pref=100
rip-pref=100
ospf-pref=10
ospf-ase-pref=150
rip-tag=c8:00:00:00
rip-ase-type=1
pool-ospf-adv-type=type-1
iproute-cache-enable=yes
iproute-cache-size=0
sntp-info={ no utc+0000 [ 0.0.0.0 0.0.0.0 0.0.0.0 ] }
dns-list-size=6
client-primary-dns-server=0.0.0.0
client-secondary-dns-server=0.0.0.0
allow-as-client-dns-info=true
multicast-forwarding=no
mbone-profile=""
mbone-lan-interface={ { any-shelf any-slot 0 } 0 }
multicast-hbeat-addr=0.0.0.0
multicast-hbeat-port=0
multicast-hbeat-slot-time=0
multicast-hbeat-Number-Slot=0
multicast-hbeat-Alarm-threshold=0
multicast-hbeat-src-addr=0.0.0.0
multicast-hbeat-src-addr-mask=0.0.0.0
sec-domain-name=""
multicast-member-timeout=360
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> **write** IP-GLOBAL written

See Also: Allow-As-Client-DNS-Info, Assign-Count, BOOTP-Enabled, Client-Primary-DNS-Server, Client-Secondary-DNS-Server, Dialout-Poison, DNS-List-Attempt, DNS-List-Size, DNS-Primary-Server, DNS-Secondary-Server, Domain-Name, Drop-Source-Routed-IP-Packets, Ignore-Def-Route, Ignore-ICMP-Redirects, IPRoute-Cache-Enable, IPRoute-Cache-Size, Must-Accept-Address-Assign, NetBIOS-Primary-NS, NetBIOS-Secondary-NS, OSPF-ASE-Pref, OSPF-Pref, Pool-Base-Address, Pool-Summary, RARP-Enabled, RIP-ASE-Type, RIP-Policy, RIP-Pref, RIP-Tag, Sec-Domain-Name, Shared-Prof, SNTP-Info, Soft-IP-Interface-Addr, Static-Pref, Summarize-RIP-Routes, System-IP-Addr, Telnet-Password, UDP-Cksum, User-Profile

# **IP-Interface**

Description: A profile containing configuration options for an IP interface.

Each packet-handling slot card operates as a router subsystem with its own local interface table. The MAX TNT router card (the master shelf-controller in the current release) holds the global interface table. The interface address of an IP-Interface profile is the local address on a slot card. Each interface has its own IP address.

When the MAX TNT generates IP packets, the packets have the source address of the IP interface on which they are forwarded. If the MAX TNT receives IP packets destined for one of its IP addresses, it accepts the packets, even if they arrive on a different interface and the destination-address interface is not active.

**Usage:** You can specify up to 16 IP-Interface profiles for each Ethernet card. Each profile specifies a single IP address.

The MAX TNT creates a default IP-Interface profile when it first detects the presence of an Ethernet card or the shelf-controller Ethernet port. For example, for the first Ethernet port on a card in shelf 1, slot 12, the default IP-Interface profile uses the following index:

 $\{\{1 \ 12 \ 1\} \ 0\}$ 

The index consists of a physical address and a logical-item number in the following format:

```
{{shelf slot item} logical-item}
```

The logical item number addresses a specific logical interface or port. The logical item number is 0 (zero), except when you configure multiple interfaces or the device supports multiple channels. For example, another IP-Interface profile for  $\{1\ 12\ 1\ \}$  might use the following index:

 $\{\{1 \ 12 \ 1\} \ 1\}$ 

The logical-item numbers do not have to be consecutive, but they must be unique.

To configure more than one IP address on a local interface, create an IP-Interface profile for each unique IP address. For example, to assign the IP address 10.5.6.7 to the default IP interface:

```
admin> read ip-int { {1 12 1} 0}
IP-INTERFACE/{ { shelf-1 slot-12 1 } 0 } read
admin> list
interface-address*={ { shelf-1 slot-12 1 } 0 }
ip-address=0.0.0.0/0
proxy-mode=Off
rip-mode=routing-off
rip2-use-multicast=yes
ospf={ no 0.0.0 normal 10 40 5 simple ****** 1 16777215 type-1 c0:+
multicast-allowed=no
multicast-rate-limit=100
admin> set ip-addr=10.5.6.7
admin> write
IP-INTERFACE/{ { shelf-1 slot-12 1 } 0 } written
```

To create a second IP-interface profile for the same physical port and assign it the address 10.9.1.212/24:

```
admin> new ip-int { {1 12 1 } 1}
IP-INTERFACE/{ { shelf-1 slot-12 1 } 1 } read
admin> list
interface-address*={ { shelf-1 slot-12 1 } 1 }
ip-address=0.0.0.0/0
proxy-mode=Off
rip-mode=routing=off
rip2-use=multicast=yes
ospf={ no 0.0.0 normal 10 40 5 simple ****** 1 16777215 type=1 c0:+
multicast=allowed=no
multicast=rate=limit=100
```

```
admin> set ip-addr=10.9.1.212./24
```

admin> write
IP-INTERFACE/{ { shelf-1 slot-12 1 } 1 } written

Dependencies: Consider the following:

- For IP-Interface profiles, the default profile (with the zero logical-item number) must have an IP address configured, or none of the other IP-Interface profiles for the same port will function. For this reason, do not delete the default profile if you want your other configurations to work.
- If Proxy-Mode is enabled in any of the IP-Interface profiles for a given Ethernet port, it is enabled for all ARP requests coming into the physical port.

**See Also:** Interface-Address, IP-Address, Multicast-Allowed, Multicast-Rate-Limit, OSPF, Proxy-Mode, RIP-Mode, RIP2-Use-Multicast

# **IP-Options**

Description: A subprofile containing IP-routing settings.

Usage: When Connection is the working profile:

```
admin> list ip
ip-routing-enabled=yes
vj-header-prediction=yes
remote-address=0.0.0.0/0
local-address=0.0.0.0/0
routing-metric=7
preference=100
down-preference=255
private-route=no
temporary-route=no
multicast-allowed=no
address-pool=0
ip-direct=0.0.0.0
rip=routing-off
ospf-options={ no 0.0.0.0 normal 10 30 120 5 simple ****** 10 1000 +
multicast-rate-limit=100
client-dns-primary-addr=0.0.0.0
client-dns-secondary-addr=0.0.0.0
client-dns-addr-assign=yes
```

```
client-default-gateway=0.0.0.0/0
route-filter=""
if-remote-address=0.0.0.0
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Dependencies: IP-routing calls must be enabled in the Answer-Defaults profile.

Location: Connection station

See Also: Address-Pool, Client-Default-Gateway, Client-DNS-Addr-Assign, Client-DNS-Primary-Addr, Client-DNS-Secondary-Addr, Down-Preference, IP-Direct, IP-Routing-Enabled, Local-Address, Multicast-Allowed, Multicast-Rate-Limit, OSPF-Options, Preference, Private-Route, Remote-Address, RIP, Routing-Metric, Temporary-Route, VJ-Header-Prediction

# **IP-Route**

**Description:** A profile containing the information required by the IP router to set up static routes. The MAX TNT passes the static routes to the router at startup, and updates the routing table whenever a route changes.

Usage: To make IP-Route the working profile and list its contents:

```
admin> read ip-route default
IP-ROUTE/default read
admin> list
name*=default
dest-address=0.0.0.0/0
gateway-address=0.0.0.0
metric=1
cost=1
preference=100
third-party=no
ase-type=type-1
ase-tag=c0:00:00:00
private-route=yes
active-route=no
ase7-adv=advertise
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> **write** IP-ROUTE/default written

**See Also:** Active-Route, ASE7-Adv, ASE-Tag, ASE-Type, Cost, Dest-Address, Gateway-Address, Metric, Nailed-Up-Group, Preference, Private-Route, Third-Party

# **IPRoute-Cache-Enable**

Description: Enables or disables route caches.

A route cache enables a slot card to route IP packets to another slot, reducing the route-processing overhead on the shelf-controller. The shelf-controller is still responsible for managing routing protocols and the route caches themselves, but each slot card is able to check a small IP cache and route packets to a destination slot. When a slot card receives an IP packet for which it has no cache entry, it forwards that packet to the shelf-controller, which routes it to the proper slot. The shelf-controller then writes a cache entry and, using the control bus, downloads it to the route cache of all slot cards.

Usage: Specify Yes or No. The default is Yes, which is the recommended setting.

- Yes enables the router on the shelf-controller to offload some route processing to the slot cards.
- No specifies that all route processing occurs on the shelf-controller.

Example: set iproute-cache-enable=yes

Location: IP-Global

See Also: IPRoute-Cache-Size

### **IPRoute-Cache-Size**

Description: Specifies the limit for the number of cache entries in slot-card route caches.

**Usage:** Specify an integer. The default is 0 (zero), which sets no limit on cache size. In general, no limit is required. However, if you need to control memory usage, you can restrict the cache size.

Example: set iproute-cache-size=16

Location: IP-Global

See Also: IPRoute-Cache-Enable

#### **IP-Routing-Enabled**

**Description:** Enables or disables the routing of IP data packets for the connection. When you enable IP routing, the MAX TNT routes packets. It does not bridge them.

Usage: Specify Yes or No. The default is Yes.

- Yes enables IP routing for the link. For your setting to have any effect, IP routing must be enabled on both the dialing and answering sides of the link.
- No disables IP routing for the link.

#### Example: set ip-routing-enabled=yes

Location: Connection station > IP-Options

See Also: IP-Address, IP-Global, IP-Interface, IP-Options, IP-Route

# **IPX-Dialin-Pool**

**Description:** Specifies a virtual IPX network that the MAX TNT assigns to all dial-in NetWare clients.

Dial-in clients do not belong to an IPX network. Therefore, to establish a routing connection, the MAX TNT must assign each client an IPX network number. The MAX TNT advertises the route to the virtual network and assigns it as the network address for dial-in clients.

The dial-in Netware client must accept the network number, although it can provide its own node number. If the client does not have a unique node address, the MAX TNT assigns the node address as well.

**Usage:** Specify an IPX network number that is unique in the IPX routing domain. The default is 00:00:00:00.

Example: set ipx-dialin-pool=00000001

Dependencies: If IPX routing is globally disabled, IPX-Dialin-Pool does not apply.

Location: IPX-Global

**See Also:** Interface-Address, IPX-Frame, IPX-Net-Number, IPX-Options, IPX-Route, IPX-Routing-Enabled, IPX-SAP-Filter-Name, IPX-Type-20

# **IPX-Frame**

**Description:** Specifies the type of packet frame used by the majority of NetWare servers on the Ethernet connection.

Usage: Specify one of the following values:

- None (the default) disables IPX-specific features. If you choose this setting, the MAX TNT can bridge or route IPX, but without watchdog spoofing or automatic RIP and SAP handling.
- 802.2 (NetWare 3.12 or later) specifies that the IPX clients and servers on the local Ethernet cable follow the IEEE 802.2 protocol for the Media Access Control (MAC) header. The frame contains the Logical Link Control (LLC) header in addition to the MAC header.
- 802.3 (for NetWare 3.11 or earlier) specifies that IPX clients and servers on the local Ethernet cable follow the IEEE 802.3 protocol for the MAC header, also called Raw 802.3. The frame does not contain the LLC header in addition to the MAC header.
- SNAP specifies that the IPX clients and servers on the local Ethernet network follow the SubNetwork Access Protocol (SNAP) for the MAC header. This specification includes the IEEE 802.3 protocol format plus additional information in the MAC header.
- Enet-II specifies that IPX clients and servers on the local Ethernet network follow the Ethernet II protocol for the MAC header.

Example: set ipx-frame=802.2

Dependencies: Consider the following:

- If the MAX TNT does not route IPX on the specified interface, or if IPX routing is globally disabled, IPX-Frame does not apply.
- The MAX TNT routes only the IPX frame type specified by IPX-Frame. If a NetWare server transmits IPX in a different frame type, and bridging is enabled, the MAX TNT bridges the packets. If bridging is not enabled, the MAX TNT drops the packets.

**Location:** IPX-Interface {shelf-*N* slot-*N N*}

See Also: Interface-Address, IPX-Dialin-Pool, IPX-Net-Number, IPX-Options, IPX-Route, IPX-Routing-Enabled, IPX-SAP-Filter-Name, IPX-Type-20

# **IPX-Global**

Description: A profile that contains global settings for IPX.

Usage: To make IPX-Global the working profile and list its contents:

```
admin> read ipx-global
IPX-GLOBAL read
admin> list
interface-address={ { any shelf any slot 0 } }
ipx-routing-enabled=no
ipx-dialin-pool=00:00:00
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> **write** IPX-GLOBAL written

See Also: Interface-Address, IPX-Dialin-Pool, IPX-Routing-Enabled

### **IPX-Interface**

Description: A profile that contains configuration options for an IPX interface.

Usage: To make IPX-Interface the working profile and list its contents:

```
admin> read ipx-interface { { shelf-1 controller 1 } 0}
IPX-INTERFACE read
```

```
admin> list
interface-address*={ { shelf-1 controller 1 } 0 }
ipx-routing-enabled=no
ipx-frame=none
ipx-net-number=00:00:00:00
ipx-type-20=no
ipx-sap-filter-name=""
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> **write** IPX-INTERFACE written

See Also: Interface-Address, IPX-Frame, IPX-Net-Number, IPX-Routing-Enabled, IPX-SAP-Filter-Name, IPX-Type-20

# **IPX-Net-Number**

Description: Specifies the IPX network number of the remote router.

**Usage:** Specify the IPX network number of the remote device only when the router requires that the MAX TNT know its network number before connecting. If you specify a value for IPX-Net-Number, the MAX TNT creates a static route to the device.

The default of 00000000 is appropriate for most installations. If you accept the default, the MAX TNTdoes not advertise the route until it makes a connection to the remote network.

**Dependencies:** If the MAX TNT does not route IPX on the specified interface, or if IPX routing is globally disabled, IPX-Net-Number does not apply.

**Location:** IPX-Interface {shelf-*N* slot-*N N*}

See Also: Interface-Address, IPX-Dialin-Pool, IPX-Frame, IPX-Options, IPX-Route, IPX-Routing-Enabled, IPX-SAP-Filter-Name, IPX-Type-20

# **IPX-Options**

Description: A subprofile containing settings for IPX routing.

Usage: When Connection is the working profile:

```
admin> list ipx
ipx-routing-enabled=no
peer-mode=router-peer
rip=both
sap=both
dial-query=no
net-number=00:00:00:00
net-alias=00:00:00:00
sap-filter=""
ipx-sap-hs-proxy=no
ipx-sap-hs-proxy-net=[000000]
ipx-header-compression=yes
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

**Dependencies:** To globally enable IPX routing, set IPX-Routing-Enabled=Yes in the IPX-Global profile. To enable IPX routing for an interface, set IPX-Routing-Enabled=Yes in the IPX-Interface profile.

Location: Connection station

See Also: Dial-Query, Interface-Address, IPX-Dialin-Pool, IPX-Frame, IPX-Net-Number, IPX-Route, IPX-Routing-Enabled, IPX-SAP-Filter-Name, IPX-Type-20, Peer-Mode, RIP

# **IPX-Route**

**Description:** A profile containing the information required by the IPX router to set up static routes. The MAX TNT passes the static routes to the router at startup, and updates the routing table whenever a route changes.

Usage: To make IPX-Route the working profile and list its contents:

```
admin> read ipx-route default
IPX-ROUTE/default read
```

```
admin> list
name*=default
server-type=00:00
dest-network=00:00:00:00:00
server-node=00:00:00:00:00:00
hops=8
ticks=12
profile-name=""
active-route=yes
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

```
admin> write
IPX-ROUTE/default written
```

See Also: Active-Route, Dest-Network, Hops, Name, Server-Node, Server-Socket, Server-Type

### **IPX-Routing-Enabled**

Description: Enables or disables the routing of IPX data packets:

- In the IPX-Global profile, IPX-Routing-Enabled controls IPX routing for the entire system.
- In the IPX-Interface profile, IPX-Routing-Enabled controls IPX routing for the particular interface.

Usage: Specify Yes or No. The default is No.

- Yes enables IPX routing. When IPX routing is enabled, the MAX TNT always routes IPX packets, and never bridges them.
- No disables IPX routing.

#### Example: set ipx-routing-enabled=yes

Dependencies: Consider the following:

- IPX routing must be enabled on both the dialing and answering sides of the link.
- To enable IPX routing for a particular interface, you must set IPX-Routing-Enabled=Yes in both the IPX-Global and IPX-Interface profiles.

**Location:** IPX-Global, IPX-Interface {shelf-*N* slot-*N N*}

See Also: Interface-Address, IPX-Dialin-Pool, IPX-Frame, IPX-Net-Number, IPX-Options, IPX-Route, IPX-SAP-Filter-Name, IPX-Type-20

# **IPX-SAP-Filter-Name**

Description: Applies a SAP filter to the IPX interface.

**Usage:** Specify the name of an IPX SAP filter. You can enter up to 15 characters. The default is null.

Example: ipx-sap-filter-name=filter1

**Dependencies:** If the MAX TNT does not route IPX on the specified interface, or if IPX routing is globally disabled, IPX-SAP-Filter-Name does not apply.

Location: IPX-Interface { shelf-*N* slot-*N N* }

See Also: Interface-Address, IPX-Dialin-Pool, IPX-Frame, IPX-Net-Number, IPX-Options, IPX-Route, IPX-Routing-Enabled, IPX-Type-20

# IPX-Type-20

**Description:** Specifies whether IPX type 20 (NetBIOS) packets are propagated on the IPX interface.

Usage: Specify Yes or No. The default is No.

- Yes specifies that IPX type 20 packets are propagated on the interface.
- No specifies that IPX type 20 packets are not propagated on the interface.

Example: set ipx-type-20=yes

**Dependencies:** If the MAX TNT does not route IPX on the specified interface, or if IPX routing is globally disabled, IPX-Type-20 does not apply.

**Location:** IPX-Interface {shelf-*N* slot-*N N*}

See Also: Interface-Address, IPX-Dialin-Pool, IPX-Frame, IPX-Net-Number, IPX-Options, IPX-Route, IPX-Routing-Enabled, IPX-SAP-Filter-Name

# **Item-Number**

**Description:** Specifies an item on a slot card. Items are numbered starting with #1 for the leftmost item on the card.

**Description:** Specify a number from 0 to 65535. The default is 0 (zero), which denotes the entire slot.

Example: set item-number=24

Location: Call-Route-Info, Device-Address, Physical-Address

See Also: Call-Route-Info, Device-Address, Physical-Address, Shelf, Slot

# L

# LAN-Modem

Description: A profile created by the system for each installed modem card.

Usage: To make LAN-Modem the working profile and list its contents:

```
admin> read lan {1 6 0}
LAN-MODEM/{ shelf-1 slot-6 0 } read
admin> list
physical-address*={ shelf-1 slot-6 0 }
modem-disable-mode=[ enable enabl
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

```
admin> write
LAN-MODEM/{ shelf-1 slot-6 0 } written
```

**Dependencies:** The LAN-Modem profile exists until a different slot card is detected in the slot. Removing or downing a modem card does not delete the profile or change its contents.

See Also: Modem-Disable-Mode, Physical-Address

## Layer2-End

**Description:** Specifies CCITT Layer 2, which is used to determine the address to send when two PBX devices are connected back-to-back. One side must act as a PBX and the other side must act as an ET.

Usage: Specify one of the following values:

- A-Side specifies that Layer 2 acts as an ET.
- B-Side (the default) specifies that Layer 2 acts as a PBX.

Example: set layer2-end=b-side

**Location:** E1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Layer3-End, Line-Interface, Switch-Type

## Layer3-End

**Description:** Specifies CCITT Layer 3, which must be set to its default when a DPNSS or DASS2 switch type is in use.

Usage: Specify one of the following values:

- X-Side (the default) specifies that Layer 3 favors the outgoing call when a call collision occurs.
- Y-Side specifies that Layer 3 does not favor the outgoing call when a call collision occurs.

Example: set layer3-end=x-side

**Location:** E1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Layer2-End, Line-Interface, Switch-Type

Left-Status	
	Description: Specifies the default content of the left side of the status window.
	Usage: Specify one of the following values:
	• Session-List specifies that the MAX TNT displays current system administration sessions on the left side of the status window.
	• Connection-List specifies that the MAX TNT displays current system WAN sessions on the left side of the status window.
	Example: set left-status=connection-list
	Location: User name
	See Also: Bottom-Status, Default-Status, Top-Status
Len	<ul><li>Description: Specifies the number of bytes to test in a frame. Starting at the specified Offset, the MAX TNT compares the contents of the bytes to the filter's Value setting.</li><li>Usage: Specify a number from 0 to 8. The default is 0 (zero), which specifies that the MAX TNT does not compare packet contents, and that all packets match the filter.</li></ul>
	Example: offset=2 len=8 more=no comp-neq=no mask=0f:ff:ff:00:00:00:f0:00:00:00 value=07:fe:45:70:00:00:90:00:00:00 In this Gen-Filter specification, the filter applies the mask to the eight bytes following the two-byte offset.
	Filter <i>filter-name</i> > Output-Filters > Gen-Filter
	See Also: Gen-Filter, Input-Filters, Output-Filters
Line-Config	<b>Description:</b> A subprofile containing line configuration options for a Serial WAN, RADSL, or SDSL card.
	Usage: When Swan, ADSL-Cap, or SDSL is the working profile:
	admin> <b>list line</b> trunk-group=0 nailed-group=2 activation=static call-route-info={ any-shelf any-slot 0 }
	You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile: admin> list
	<b>Location:</b> ADSL-Cap {shelf- <i>N</i> slot- <i>N N</i> }, SDSL {shelf- <i>N</i> slot- <i>N N</i> }, Swan {shelf- <i>N</i> slot- <i>N N</i> }
	See Also: Activation, Call-Route-Info, Nailed-Group, Trunk-Group

# Line-Enabled

Description: Specifies whether the ISDN BRI line is enabled.

Usage: Specify Yes or No. The default is Yes.

- Yes specifies that the ISDN BRI line is enabled.
- No specifies that the ISDN BRI line is not enabled.

**Location:** BRILT {shelf-*N* slot-*N N*} > Line-Interface

See Also: Answer-N (N=1-2), Line-Interface

## Line-Interface

**Description:** A subprofile containing T1 PRI, E1 PRI, or ISDN BRI line configuration options.

Usage: When T1 is the working profile:

admin> list line enabled=no frame-type=d4 encoding=ami clock-source=eligible clock-priority=middle-priority signaling-mode=inband robbed-bit-mode=wink-start default-call-type=digital switch-type=att-pri nfas-id=0 call-by-call=0 data-sense=normal idle-mode=flag-idle fdl=none front-end-type=dsx DSX-line-length=1-133 CSU-build-out=0-db channel-config=[ { switched-channel 9 "" { any-shelf any-slot 0 } 0 } + maintenance-state=no

When E1 is the working profile:

```
admin> list line
enabled=yes
frame-type=g703
clock-source=eligible
clock-priority=middle-priority
signaling-mode=isdn
switch-type=net5-pri
front-end-type=short-haul
channel-config=[ { unused-channel 9 "" { any-shelf any-slot 0 } 0 } { +
layer3-end=x-side
layer2-end=b-side
nl-value=64
loop-avoidance=7
number-complete=end-of-pulsing
```

```
group-b-signal=signal-b-6
group-ii-signal=signal-ii-2
answer-delay=200
caller-id=no-caller-id
```

When BRILT is the working profile:

```
admin> list line
line-enabled=yes
answer-number-1=""
answer-number-2=""
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: BRILT {shelf-*N* slot-*N N*}, E1 {shelf-*N* slot-*N N*}, T1 {shelf-*N* slot-*N N*}

See Also: Answer-N (N=1–2), Answer-Delay, Call-By-Call, Caller-ID, Channel-Config, Clock-Priority, Clock-Source, CSU-Build-Out, Data-Sense, Default-Call-Type, DSX-Line-Length, Enabled, Encoding, FDL, Frame-Type, Front-End-Type, Group-B-Signal, Group-II-Signal, Idle-Mode, Layer2-End, Layer3-End, Line-Enabled, Loop-Avoidance, Maintenance-State, NFAS-ID, NL-Value, Number-Complete, Robbed-Bit-Mode, Signaling-Mode, Switch-Type

# Line-Length

Description: Specifies the length of the Rx and Tx lines to a DSX-3 Cross Connect.

Usage: Specify either of the following values:

- 0–255 (0 to 255 feet)
- 226–450 (226 to 450 feet)

For a direct connection, double the values.

Location: T3 {shelf-*N* slot-*N N*}

See Also: Enabled, Frame-Type, Name, Physical-Address,

## Line-Quality

**Description:** Indicates the line quality (in decibels). For an SDSL interface, a reading of -5db or greater is required for reliable data transfer.

Usage: The Line-Quality setting is read only.

Location: ADSL-Cap-Statistics {shelf-*N* slot-*N N*}, SDSL-Statistics {shelf-*N* slot-*N N*}

**See Also:** Connection-SQ, Far-End-db-Attenuation, HDLC-RX-CRC-Error-Cnt, Line-Up-Timer, Physical-Address, RS-Corrected-Errors, RS-Errors, RX-Attenuation, RX-Signal-Present, Self-Test, Transmit-Power, Up-Down-Cntr

# Line-State

**Description:** Reports the overall state of a T1 PRI, DS3, ISDN BRI, RADSL, SDSL, or Swan line.

**Usage:** The Line-State setting is read only. You cannot set Line-State directly. For a T1 PRI line, the state can have one of the following values:

- Does-Not-Exist indicates that the line is not installed.
- Disabled indicates that the line is disabled.
- Loss-Of-Sync indicates a red-alarm state.
- Yellow-Alarm indicates a yellow-alarm state.
- AIS-Receive indicates that the line is receiving a keepalive signal.
- No-D-Channel indicates a D-channel failure.
- Active indicates that multipoint is established.

For a DS3 line, the state can have the same values as a T1 PRI line (except No-D-Channel). In addition, a DS3 line can have one of the following values:

- Idle-Receive indicates that the line is receiving an idle signal.
- Wrong-Frame indicates that the remote end is configured for a different DS3 application.

For an ISDN BRI line, the state can have one of the following values:

- Does-Not-Exist indicates that the line is not installed.
- Disabled indicates that the line is disabled.
- No-Physical indicates that no physical link exists.
- No-Logical indicates a logical link failure.
- No-Mgmt indicates that Layer 2 is established, but management entities have not been initialized.
- Point-To-Point indicates that Point-to-Point service has been established.
- Multipoint-1 indicates that Multipoint-1 service has been established.
- Multipoint-2 indicates that Multipoint-2 service has been established.

For a RADSL line, Line-State can have one of the following values:

- Disabled indicates that the line is disabled.
- Active indicates that the line is up and operating normally.

For an SDSL or Swan line, Line-State can have one of the following values:

- Does-Not-Exist indicates that the line is not installed.
- Disabled indicates that the line is disabled.
- Active indicates that the line is up and operating normally.

#### Example: line-state=active

**Location:** ADSL-Cap-Stat {shelf-N slot-NN}, BRI-Stat {shelf-N slot-NN}, SDSL-Stat {shelf-N slot-NN}, Swan-Stat {shelf-N slot-NN}, T1-Stat {shelf-N slot-NN}, T3-Stat {shelf-N slot-NN}

See Also: Channel-State, DS2-State

# Line-Up-Timer

Description: Indicates the period of time the line has been in the up state.

Usage: The Line-Up-Timer value is read only. It has the following format:

 $\{hh mm ss\}$ 

where *hh* is the number of hours, *mm* is the number of minutes, and *ss* is the number of seconds

**Location:** ADSL-Cap-Statistics {shelf-*N* slot-*N N*}, SDSL-Statistics {shelf-*N* slot-*N N*}

See Also: Connection-SQ, Far-End-db-Attenuation, HDLC-RX-CRC-Error-Cnt, Line-Quality, Physical-Address, RS-Corrected-Errors, RS-Errors, RX-Attenuation, RX-Signal-Present, Self-Test, Transmit-Power, Up-Down-Cntr

#### Link-Compression

Description: Specifies the link-compression method for a PPP, MP, and MP+ call.

Usage: Specify one of the following values:

- None (the default) specifies no link compression.
- Stac specifies an Ascend-modified version of draft 0 of the CCP protocol.
- Stac-9 specifies draft 9 of the Stac LZS Compression protocol.
- MS-Stac specifies Microsoft/Stac compression (the method used by Windows95). If the caller does not acknowledge Microsoft/Stac compression, the MAX TNT attempts to use standard Stac compression. If the caller does not acknowledge Stac compression, the link uses no compression.

Example: set link-compression=stac-9

**Dependencies:** Only PPP, MP, and MP+ links support Link-Compression. Both sides of the connection must specify the same type of link compression. Otherwise, your setting has no effect.

Location: Answer-Defaults > PPP-Answer, Connection station > PPP-Options

See Also: PPP-Answer, PPP-Options, VJ-Header-Prediction

## Link-Mgmt

**Description:** Specifies the link management protocol to use between the MAX TNT and the Frame Relay switch. The Frame Relay administrator or service provider can tell you which value to use.

Usage: Specify one of the following values:

- None specifies no link management. The MAX TNT assumes that the physical link is up and that all Data Link Connection Indicators (DLCIs) are active on the physical link. None is the default.
- ANSI-T1.617d specifies the link management protocol defined in ANSI T1.617 Annex D.
- CCITT-Q.933a specifies the link management protocol defined Q.933 Annex A.

Example: set link-mgmt=ansi-t1.617d

Location: Frame-Relay fr-name

See Also: DCEN392-Val, DCEN393-Val, FR-Name, FR-Type-Val, N391-Val, N392-Val, N393-Val, T391-Val, T392-Val

# Link-State

Description: Indicates the physical state of the LAN interface.

**Usage:** The Link-State setting can be Up, Down, or Unknown. The value can only be set by the Ethernet driver.

- Up specifies that the LAN interface can transmit and receive network traffic.
- Down specifies that the LAN interface cannot transmit and receive network traffic (for example, if the Ethernet cable is unplugged or the Ethernet hub on the interface is down).
- Unknown specifies the shelf-controller Ethernet interface.

**Location:** Ethernet {shelf-*N* slot-*N N*}

See Also: Link-State-Enabled

# Link-State-Enabled

Description: Specifies whether the value of Link-State affects the IP routing tables.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT deletes routes to an interface when Link-State is Down, and adds them when the interface comes up again.
- No specifies the MAX TNT routes packets to an interface regardless of the Link-State setting. If the interface is down, the MAX TNT discards the packets. They do not use an alternate route.

#### Example: set link-state-enabled=yes

**Location:** Ethernet {shelf-*N* slot-*N N*}

See Also: Link-State

## Local-Address

Description: Specifies the IP address of the local interface.

**Usage:** Specify an IP address in dotted decimal notation. Separate the optional subnet mask from the address by using a forward slash. The default is 0.0.0.0, which indicates an unnumbered interface.

Example: set local-address=10.2.3.4/24

Location: Connection *station* > IP-Options

See Also: IP-Options, Remote-Address

# Local-Echo

**Description:** Allows you to configure local-echo mode for a terminal-server session.

Local-echo mode is a line-by-line mode. The line appears as the user types it, but is not transmitted until the user enters a carriage return. If local echo is enabled, the line transmitted is echoed on the local MAX TNT terminal screen.

Local echo allows MAX TNT terminal-server users to connect to non-standard Telnet ports and programs. If the remote server turns local echo on or off in its option negotiation for a Telnet session, this setting overrides the value of Local-Echo.

Usage: Specify Yes or No. The default is No.

- Yes turns on local echo.
- No disables local echo.

Example: set local-echo=yes

**Dependencies:** If terminal services are disabled, Local-Echo does not apply. A terminal-server user can override the Local Echo setting from the command line by using the -e option of the Telnet command.

Location: Terminal-Server > Terminal-Mode-Configuration > Telnet-Options

See Also: Telnet-Options, Terminal-Mode-Configuration

#### Local-Profiles-First

**Description:** Specifies whether the MAX TNT should attempt local authentication before remote external authentication.

Usage: Specify Yes or No. The default is Yes.

- Yes specifies that the MAX TNT first attempts to authenticate the connection using a local profile. If it fails, the MAX TNT tries to authenticate the connection using an external authentication server.
- No specifies that the MAX TNT first tries to authenticate the connection using a remote authentication server. If it fails, the MAX TNT attempts to authenticate the connection using a local profile.

#### Example: set local-profiles-first=yes

Dependencies: Consider the following:

- If Auth-Type=None, Local-Profiles-First does not apply.
- PAP-Token authentication does not produce a challenge with a local profile. Using a local profile defeats the security of using PAP-Token.
- When you use a local profile, PAP-Token-CHAP brings up one channel, but all other channels fail.
- If the remote end of the connection has ever been authenticated using a challenge, Cache-Token does not work with a local profile. If the remote end has never been authenticated, no problem occurs when using a local profile.

	• When you set Local-Profiles-First=No, the MAX TNT waits for the remote authentication to time out before attempting to authenticate locally. This timeout may take longer than the timeout specified for the connection and could cause all connection attempts to fail. Therefore, set the authentication timeout value low enough to guard against the line going down, but high enough to permit the unit to respond if it can. The recommended time is 3 seconds.
	Location: External-Auth
	See Also: Auth-Timeout, Auth-Type
Location	
	<b>Description:</b> Specifies the physical location of the MAX TNT. An SNMP manager can both read and set the Location value.
	<b>Usage:</b> Specify text describing where the MAX TNT is located. You can enter up to 80 characters. The default is null.
	Example: set location=building 64
	Location: SNMP
	See Also: Contact
Log	<b>Description:</b> A profile that specifies system-wide event-logging settings.
	Usage: To make Log the working profile and list its contents:
	admin> <b>read log</b> LOG read
	<pre>admin&gt; list save-level=info save-number=100 call-info=none syslog-enabled=no host=0.0.0.0 port=514 facility=local0</pre>
	You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:
	admin> <b>write</b> LOG written
	See Also: Facility, Host, Save-Level, Save-Number, Syslog-Enabled

# Log-Display-Level

**Description:** Specifies the level of the log messages that the MAX TNT displays to a logged-in user.

Usage: Specify one of the following values:

- None (the default) specifies that the MAX TNT does not display log messages.
- Emergency messages indicate that the unit has an error condition and is unlikely to be operating normally.
- Alert messages indicate that the unit has an error condition but is still operating normally.
- Critical messages indicate that an interface has gone down or that a security error has occurred.
- Error messages indicate that an error event has occurred.
- Warning messages indicate that an unusual event has occurred, but that the unit is otherwise operating normally. For example, this type of message appears when a login attempt has failed because the user entered an incorrect user name or password.
- Notice messages indicates events of interest in normal operation, such as a link going up or down.
- Info messages indicates state and status changes that are commonly not of general interest.
- Debug messages provide helpful debugging information.

#### Example: set log-display-level=debug

**Dependencies:** Do not confuse Log-Display-Level with Save-Level in the Log profile. Save-Level determines which messages are displayed in the event-log status window.

Location: User *name* 

See Also: Log, Save-Level

#### Login-Prompt

**Description:** Specifies the string that acts as a prompt for a user name in the terminal-server interface.

**Description:** If Prompt-Format=No, you can specify up to 15 characters, and you cannot include a newline or tab character.

If Prompt-Format=Yes, you can specify up to 80 characters in multiple lines by including the newline ( $\n$ ) and tab ( $\t$ ) characters. To include an actual backslash character, you must escape it with another backslash. For example, you can enter the following string:

Welcome to\n\t\\Ascend Remote Server\\\nEnter your user name:

The terminal server displays the following text as the login prompt:

Welcome to \\Ascend Remote Server\\ Enter your user name:

Regardless of the Prompt-Format setting, the default setting for Login-Prompt is Login:.

Example: set login-prompt=Login Name:

Dependencies: If terminal services are disabled, Login-Prompt does not apply.

Location: Terminal-Server > Terminal-Mode-Configuration

See Also: Password-Prompt, Prompt, Prompt-Format, Terminal-Mode-Configuration, Third-Login-Prompt, Third-Prompt-Sequence

### Loop-Avoidance

**Description:** Specifies the number of transit PBX devices through which the MAX TNT may route a call.

Usage: Specify an integer from 1 to 26. The default is 7.

Example: set loop-avoidance=7

**Location:** E1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Line-Interface, NL-Value

## Loss-Of-Carrier

**Description:** Indicates a loss of carrier on a T1 line.

**Usage:** The Loss-Of-Carrier setting is read only. True indicates a loss of carrier. False indicates that the carrier is maintaining a connection.

Location: T1-Stat {shelf-*N* slot-*N N*}

See Also: AIS-Receive, BER-Receive, Carrier-Established, Loss-Of-Sync, Yellow-Receive

#### Loss-Of-Sync

**Description:** Indicates whether the T1 line has lost synchronization.

**Usage:** The Loss-Of-Sync setting is read only. True indicates that synchronization has been lost. False indicates that synchronization is intact.

**Location:** T1-Stat {shelf-*N* slot-*N N*}

See Also: AIS-Receive, BER-Receive, Carrier-Established, Loss-Of-Carrier, Yellow-Receive

## LQM

**Description:** Specifies whether the MAX TNT requests link-quality monitoring when answering a PPP call. Link-quality monitoring counts the number of packets sent across the link and periodically asks the remote end how many packets it has received. Discrepancies are evidence of packet loss and indicate link-quality problems. Link-quality monitoring also generates periodic link-quality reports that both ends of the link exchange.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT requests link-quality monitoring.
- No specifies that the MAX TNT does not request link-quality monitoring.

#### Example: set lqm=yes

Dependencies: The LQM value applies only to PPP links.

**Location:** Answer-Defaults > PPP-Answer, Connection *station* > PPP-Options

See Also: LQM-Maximum-Period, LQM-Minimum-Period, PPP-Answer, PPP-Options

# LQM-Maximum-Period

**Description:** Specifies the maximum period, in one-hundredths of a second, that the MAX TNT will accept and send link-quality monitoring packets when answering a PPP call.

Usage: Specify a number from 0 to 600. The default is 600.

Example: set lqm-maximum-period=300

Dependencies: If LQM=No, LQM-Maximum-Period does not apply.

Location: Answer-Defaults > PPP-Answer, Connection *station* > PPP-Options

See Also: LQM, LQM-Minimum-Period, PPP-Answer, PPP-Options

### LQM-Minimum-Period

**Description:** Specifies the minimum period, in one-hundredths of a second, that the MAX TNT will accept link-quality monitoring packets when answering a PPP call.

Usage: Specify a number from 0 to 600. The default is 600.

Example: set lqm-minimum-period=200

Dependencies: If LQM=No, LQM-Minimum-Period does not apply.

Location: Answer-Defaults > PPP-Answer, Connection *station* > PPP-Options

See Also: LQM, LQM-Maximum-Period, PPP-Answer, PPP-Options

# Μ

# **MAC-Address**

**Description:** Specifies the Media Access Control (MAC) address of an Ethernet interface. An Ethernet MAC address is a 12-digit hexadecimal number denoting the physical address encoded in the controller.

**Usage:** In most cases, the MAC-Address value is obtained from the system. However, you can clone a profile by reading an existing one and changing its physical address.

Example: set mac-address=00:c0:6c:4e:ac:5a

**Location:** Ethernet { shelf-*N* slot-*N N* }

See Also: Local-Address, Physical-Address, Remote-Address

# **Maintenance-State**

**Description:** Allows you to Busy Out or take Out Of Service (OOS) a T1 PRI line. Doing so is known as "quiescing" the line to make it available for maintenance. Active calls on the line are not torn down. When an active call drops, the MAX TNT takes the channel out of service. When the entire line is out of service, it is available for maintenance.

Usage: Specify Yes or No. The default is No.

- Yes quiesces the line, making it available for maintenance when all active calls have been dropped.
- No specifies that the line is available for active service. If you specify No after the line has been quiesced, it returns to service.

Example: set maintenance-state=yes

**Dependencies:** If the line's Signaling-Mode is not ISDN, Maintenance-State does not apply. When the MAX TNT reboots, all T1 PRI lines come up available for service.

**Location:** T1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Line-Interface, Signaling-Mode

#### **Major-Firmware-Ver**

Description: Indicates the major firmware version of the RADSL or SDSL card.

Usage: The Major-Firmware-Ver setting is read only.

Location: ADSL-Cap-Status {shelf-*N* slot-*N N*}, SDSL-Status {shelf-*N* slot-*N N*}

See Also: Dev-Line-State, Down-Stream-Constellation, Down-Stream-Operational-Baud, Down-Stream-Rate, Hardware-Ver, IF-Group-Index, Minor-Firmware-Ver, Physical-Address, Unit-Type, Up-Stream-Constellation, Up-Stream-Rate

# Mask

**Description:** Specifies a 12-byte mask to apply to the Value setting before comparing the Value to the packet contents at the specified Offset. You can use the mask to finetune exactly which bits you want to compare.

After translating the Mask and Value into binary format, the MAX TNT applies the mask to the specified value using a logical AND. The mask hides the bits that appear behind each binary 0 (zero) in the mask. A mask of all ones (FF:FF:FF:FF:FF:FF:FF:FF) masks no bits, so the full specified value must match the packet contents.

Usage: Specify a hexadecimal number of up to 12 bytes. The default is 00000000000.

```
Example: offset=2
len=8
```

```
more=no
comp-neq=no
mask=0f:ff:ff:ff:00:00:00:f0:00:00:00:00
value=07:fe:45:70:00:00:00:90:00:00:00:00
```

Suppose you want to apply these Gen-Filter settings to the following packet contents:

2A 31 97 FE 45 70 12 22 33 99 B4 80 75

The MAX TNT applies the mask as shown below, resulting in a value that matches the Value.

	2-byte Byte Offset						8-	byte	ison					
		2A	31	97	FE	45	70	12	22	33	99	в4	80	75
Mask · · · · ·				0F	$\mathbf{FF}$	$\mathbf{FF}$	$\mathbf{FF}$	00	00	00	FO			
Result of mask	• • •			07	FE	45	70	00	00	00	90			
Value to test •••				07	FE	45	70	00	00	00	90			

The packet matches the filter. Because Forward=No, the MAX TNT drops the packet. The byte comparison works as follows:

- 2A and 31 are ignored due to the two-byte offset.
- 9 in the lower half of the third byte is ignored, because the mask has a 0 (zero) in its place. The 7 in the third byte matches the Value setting of 7 in the upper half of that byte.
- F and E in the fourth byte match the Value setting for that byte.
- 4 and 5 in the fifth byte match the Value setting for that byte.
- 7 and 0 in the sixth byte match the Value setting for that byte.
- 12 and 22 and 33 in the seventh, eighth and ninth bytes are ignored because the mask has a 0 (zero) in those places.
- 9 in the tenth byte equals the matches the Value setting of 9 in the lower half of that byte. The second 9 in the upper-half of the packet's tenth byte is ignored because the mask has a 0 (zero) in its place.

**Location:** Filter *filter-name* > Input-Filters > Gen-Filter, Filter *filter-name* > Output-Filters > Gen-Filter

See Also: Gen-Filter, Input-Filters, Output-Filters
#### Master-Shelf-Controller

Description: Specifies the number of the master shelf in a multishelf system.

**Usage:** Specify the number you set on the rotary switch. All shelves must agree upon the master shelf.

Example: set master-shelf-controller=1

**Dependencies:** If Shelf-Controller-Type=Master, Master-Shelf-Controller does not apply. You can set Master-Shelf-Controller for a slave shelf only.

Location: System

See Also: Shelf-Controller-Type

#### **Max-Baud-Rate**

**Description:** Specifies the highest baud rate that digital modems should attempt to negotiate. Typically, the digital modems start with the highest possible baud rate (33600) and negotiate down to the rate accepted by the remote modem. You can adjust the maximum rate to bypass some of the negotiation cycles, provided that no incoming calls use a baud rate higher than the value you specify for Max-Baud-Rate.

Usage: Specify one of the following values:

- 33600-Max-Baud (the default)
- 31200-Max-Baud
- 28800-Max-Baud
- 26400-Max-Baud
- 2400-Max-Baud
- 21600-Max-Baud
- 19200-Max-Baud
- 16800-Max-Baud
- 14400-Max-Baud
- 12000-Max-Baud
- 9600-Max-Baud
- 7200-Max-Baud
- 4800-Max-Baud
- 2400-Max-Baud

Example: set max-baud-rate=31200-max-baud

Dependencies: If terminal services are disabled, Max-Baud-Rate does not apply.

Location: Terminal-Server > Modem-Configuration

See Also: Down-Stream-Operational-Baud, Modem-Configuration

# **Max-Call-Duration**

**Description:** Specifies the maximum number of minutes an incoming call can remain connected.

**Usage:** Specify a number from 0 to 1440. The MAX TNT checks the connection once per minute, so the actual time the call is connected is slightly longer than the time you set. The default is 0 (zero), which specifies that the MAX TNT does not set a limit on the duration of an incoming call.

**Location:** Connection *station* > Session-Options

See Also: Session-Options

#### **Maximum-Channels**

Description: Specifies the maximum number of channels in a multichannel call.

Usage: Specify an integer from 1 to 32. The default is 2.

Example: set maximum-channels=5

Location: Answer-Defaults > MP-Answer, Connection station > MP-Options

See Also: Base-Channel-Count, Enabled, Minimum-Channels, MP-Answer, MP-Options

#### **MAXLink-Client-Enabled**

Description: Indicates whether the MAXLink client software is enabled.

**Usage:** The MAXLink-Client-Enabled setting is read only. Yes indicates that the MAXLink client software is enabled. No indicates that the MAXLink client software is not enabled.

Example: maxlink-client-enabled=enabled

Location: Base

**See Also:** AIM-Enabled, Countries-Enabled, Data-Call-Enabled, D-Channel-Enabled, Domestic-Enabled, Frame-Relay-Enabled, Modem-Dialout-Enabled, Multi-Rate-Enabled, R2-Signaling-Enabled, Switched-Enabled

# **MBONE-LAN-Interface**

**Description:** Specifies the interface address of the local Ethernet port on which the MBONE router resides (the MBONE interface). The address can denote a local Ethernet port or a WAN link, but not both.

Usage: Specify the MBONE interface address. The default is null.

Example:mbone-lan-interface={ {shelf-1 slot-6 2} 0 }

**Dependencies:** The MBONE-LAN-Interface and MBONE-Profile settings are mutually exclusive.

Location: IP-Global

See Also: Interface-Address, MBONE-Profile, Multicast-Forwarding

#### **MBONE-Profile**

**Description:** Specifies the name of a Connection profile the MAX TNT uses to reach the MBONE router.

Usage: Specify the name of a Connection profile. The default is null.

Example: mbone-profile=mbone

**Dependencies:** The MBONE-Profile and MBONE-LAN-Interface settings are mutually exclusive.

Location: IP-Global

See Also: MBONE-LAN-Interface, Multicast-Forwarding

#### **Menu-Mode-Options**

Description: A subprofile containing terminal-server configuration options for menu mode.

Usage: When Terminal-Server is the working profile:

```
admin> list menu
start-with-menus=no
toggle-screen=no
remote-configuration=no
text-1=""
host-1=0.0.0.0
text-2=""
host-2=0.0.0.0
text-3=""
host-3=0.0.0.0
text-4=""
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Terminal-Server

**See Also:** Host-N (N=1–4), Remote-Configuration, Start-With-Menus, Text-N (N=1–4), Toggle-Screen

#### Metric

Description: Specifies a RIP-style metric for the route.

**Usage:** Specify an integer from 1 to 15. The default is 1. The higher the metric, the less likely that the MAX TNT uses the route.

Example: set metric=8

Location: IP-Route name

See Also: RIP, RIP-Mode, Routing-Metric

# **Minimum-Channels**

Description: Specifies the minimum number of channels in a multichannel call.

Usage: Specify an integer from 1 to 32. The default is 1.

Example: set minimum-channels=1

Location: Answer-Defaults > MP-Answer, Connection station > MP-Options

See Also: Base-Channel-Count, Enabled, Maximum-Channels, MP-Answer, MP-Options

#### **Minor-Firmware-Ver**

Description: Indicates the minor firmware version of the RADSL or SDSL card.

Usage: The Minor-Firmware-Ver setting is read only.

Location: ADSL-Cap-Status {shelf-*N* slot-*N N*}, SDSL-Status {shelf-*N* slot-*N N*}

See Also: Dev-Line-State, Down-Stream-Constellation, Down-Stream-Operational-Baud, Down-Stream-Rate, Hardware-Ver, IF-Group-Index, Major-Firmware-Ver, Physical-Address, Unit-Type, Up-Stream-Constellation, Up-Stream-Rate

#### **Modem-Configuration**

**Description:** A subprofile containing options for configuring the MAX TNT unit's digital modems.

Usage: When Terminal-Server is the working profile:

```
admin> list modem
v42/mnp=will-v42
max-baud-rate=33600-max-baud
modem-transmit-level=-10-db-mdm-trn-level
cell-mode-first=no
cell-level=-18-db-cell-level
7-even=no
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Terminal-Server

See Also: 7-Even, Cell-Level, Cell-Mode-First, Max-Baud-Rate, Modem-Transmit-Level, V42/MNP

# Modem-Dialout-Enabled

**Description:** Indicates whether modem dialout is enabled for the unit.

**Usage:** The Modem-Dialout-Enabled setting is read only. Yes indicates that modem dialout is enabled. No indicates that modem dialout is disabled.

Example: modem-dialout-enabled=yes

Location: Base

**See Also:** Modem-Configuration, Modem-Disable-Mode, Modem-Table-Index, Modem-Transmit-Level

#### Modem-Disable-Mode

**Description:** Specifies the state of each of the 48 modems in a card. The setting may also affect a B channel of a T1 PRI line.

Usage: Specify one of the following values:

- Enable (the default) enables the modem. When you change the value from Disable or DIS-Channel to Enable, the MAX TNT removes the modem from the Disabled list and places it on the Good or the Suspect list, provided that the Device-State and Admin-State are both enabled.
- Disable disables the modem. The MAX TNT moves the modem to the Disabled list. If the modem has an active call, it is not disabled until the call terminates. For idle modems, changes are effective immediately.
- DIS-Channel temporarily disables the modem and an arbitrary idle B channel of a T1 PRI line. The MAX TNT moves the modem to the Disabled list. If the modem card goes down, the MAX TNT restores a DS0 channel for each modem whose setting is DIS-Channel. Restoring a channel may take a few minutes.

Even if the modem failed POST, the DIS-Channel setting still quiesces a DS0 channel. Although the modem cannot be made available, changing this setting to Enable restores the quiesced DS0 channel. If the unit has no T1 PRI lines enabled, the DIS-Channel setting has the same effect as Disable.

Example: To disable modem 20:

```
admin> read lan {1 6 0}
LAN-MODEM/{ shelf-1 slot-6 0 } read
admin> list
physical-address*={ shelf-1 slot-6 0 }
modem-disable-mode=[ enable enable enable enable enable enable +
```

admin> list modem-dis ...(All 48 modem settings are displayed) admin> list 20 admin> set=disable

Location: LAN-Modem {shelf-*N* slot-*N N*}

**See Also:** Modem-Configuration, Modem-Dialout-Enabled, Modem-Table-Index, Modem-Transmit-Level

#### Modem-Table-Index

**Description:** Indicates the SNMP modem table index number of the device whose state is described by the Admin-State profile.

Usage: The Modem-Table-Index setting is read only.

**Location:** Admin-State {shelf-*N* slot-*N N*}

See Also: Modem-Configuration, Modem-Dialout-Enabled, Modem-Disable-Mode, Modem-Transmit-Level

# **Modem-Transmit-Level**

**Description:** Specifies the transmit attenuate level for a digital modem. When a modem calls the MAX TNT, the unit attempts to connect at the transmit level you specify.

**Usage:** Generally, you do not need to change the transmit level. However, when the carrier is aware of line problems or irregularities, you may need to alter the modem's transmit level by specifying one of the following values:

- -10-db-Mdm-Trn-Level (-10 db, the default)
- -11-db-Mdm-Trn-Level (-11 db)
- -12-db-Mdm-Trn-Level (-12 db)
- -13-db-Mdm-Trn-Level (-13 db)
- -14-db-Mdm-Trn-Level (-14 db)
- -15-db-Mdm-Trn-Level (-15 db)

Example: set modem-transmit-level=-13-db-mdm-trn-level

Dependencies: If terminal services are disabled, Modem-Transmit-Level does not apply.

Location: Terminal-Server > Modem-Configuration

See Also: Modem-Configuration, Modem-Dialout-Enabled, Modem-Disable-Mode, Modem-Table-Index

#### More

**Description:** Specifies whether the MAX TNT includes the next filter rule before determining whether the frame matches the filter.

Usage: Specify Yes or No. The default is No.

- Yes links the current filter rule to the next one so that the filter can examine multiple noncontiguous bytes within a packet. The MAX TNT applies the next filter before deciding whether to forward the packet. The match occurs only if *both* sets of noncontiguous bytes contain the specified values.
- No does not link the current filter rule to the next one. The MAX TNT makes its forwarding decision solely on the basis of the current rule.

Example: set more=no

**Dependencies:** If you set More=Yes, the next filter must be enabled. Otherwise, the MAX TNT ignores the filter.

**Location:** Filter *filter-name* > Input-Filters > Gen-Filter, Filter *filter-name* > Output-Filters > Gen-Filter

See Also: Gen-Filter, Input-Filters, Output-Filters

# **MP-Answer**

**Description:** An Answer-Defaults subprofile containing MP (RFC 1990) encapsulation settings.

Usage: When Answer-Defaults is the working profile:

admin> **list mp-answer** enabled=yes minimum-channels=1 maximum-channels=2

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Answer-Defaults

See Also: Enabled, Minimum-Channels, Maximum-Channels

# **MP-Options**

Description: A Connection subprofile containing MP (RFC 1990) encapsulation settings.

Usage: When Connection is the working profile:

```
admin> list mp-options
enabled=yes
base-channel-count=1
minimum-channels=1
maximum-channels=2
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Dependencies: MP encapsulation must be enabled in the Answer-Defaults profile.

Location: Connection station

See Also: Enabled, Base-Channel-Count, Minimum-Channels, Maximum-Channels

# **MPP-Answer**

Description: An Answer-Defaults subprofile containing MP+ encapsulation settings.

Usage: When Answer-Defaults is the working profile:

```
admin> list mpp-answer
enabled=yes
dynamic-algorithm=quadratic
bandwidth-monitor-direction=transmit
increment-channel-count=1
decrement-channel-count=1
seconds-history=15
add-persistence=5
sub-persistence=10
target-utilization=70
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Answer-Defaults

**See Also:** Add-Persistence, Bandwidth-Monitor-Direction, Decrement-Channel-Count, Dynamic-Algorithm, Enabled, Increment-Channel-Count, Seconds-History, Sub-Persistence, Target-Utilization

#### MPP-Options

Description: A Connection subprofile containing MP+ encapsulation settings.

Usage: When Connection is the working profile:

```
admin> list mpp-options
enabled=yes
aux-send-password=""
dynamic-algorithm=quadratic
bandwidth-monitor-direction=transmit
increment-channel-count=1
decrement-channel-count=1
seconds-history=15
add-persistence=5
sub-persistence=10
target-utilization=70
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Dependencies: MP+ encapsulation must be enabled in the Answer-Defaults profile.

Location: Connection station

**See Also:** Add-Persistence, Aux-Send-Password, Bandwidth-Monitor-Direction, Decrement-Channel-Count, Dynamic-Algorithm, Enabled, Increment-Channel-Count, Seconds-History, Sub-Persistence, Target-Utilization

# MRU

**Description:** Specifies the maximum number of bytes the MAX TNT can receive in a single packet.

**Usage:** In most cases, you should accept the default setting for the connection. If you must change the default, specify a value less than the default value.

- For a PPP connection, the default is 1524. Accept the default unless the device at the remote end of the link cannot support it.
- For a Frame Relay connection, the default is 1532.

#### Example: set mru=1524

**Location:** Answer-Defaults > PPP-Answer, Connection *station* > PPP-Options, Frame-Relay *fr-name* 

See Also: PPP-Answer, PPP-Options

# **Multicast-Allowed**

Description: Enables or disables multicasting on the IP interface.

Usage: Specify Yes or No. The default is No.

- Yes enables the MAX TNT to respond to IGMP client requests and responses.
- No specifies that the MAX TNT does not respond to multicast clients on the interface.

#### Example: set multicast-allowed=yes

**Dependencies:** If you set Multicast-Allowed=Yes and Multicast-Rate-Limit remains at the default of 100, the MAX TNT handles IGMP responses and requests on the interface but does not forward multicast traffic. You must set Multicast-Rate-Limit to a non-default value before the MAX TNT can forward multicast traffic.

**Location:** Connection *station* > IP-Options, IP-Interface {shelf-*N* slot-*N N*}

See Also: IP-Global, IP-Options, Multicast-Forwarding, Multicast-Member-Timeout, Multicast-Rate-Limit

#### **Multicast-Forwarding**

Description: Enables or disables multicast forwarding for the MAX TNT.

Usage: Specify Yes or No. The default is No.

- Yes enables multicast forwarding.
- No disables multicast forwarding.

#### Example: set multicast-forwarding=yes

Dependencies: Consider the following:

- For Multicast-Forwarding to have any effect, you must set MBONE-LAN-Interface or MBONE-Profile to specify the interface on which the MBONE router resides.
- When the value of Multicast-Forwarding changes from No to Yes, the multicast subsystem reads the values in the IP-Global profile and initiates the forwarding function. If you modify a multicast value in the IP-Global profile, you must set Multicast-Forwarding to No and then Yes again to force a read of the new values

Location: IP-Global

See Also: Multicast-Allowed, Multicast-Member-Timeout, MBONE-LAN-Interface, MBONE-Profile

#### Multicast-Hbeat-Addr

**Description:** Specifies a multicast address for heartbeat monitoring. The MAX TNT listens for packets to and from the associated group

When it runs as a multicast forwarder, the MAX TNT continually receives multicast traffic. Using heartbeat monitoring, you can monitor for possible connectivity problems by polling for multicast traffic. The MAX TNT generates an SNMP alarm trap if a traffic breakdown occurs.

Usage: Specify a multicast address in dotted decimal notation. The default is 0.0.0.0.

Example: set multicast-hbeat-addr=224.1.1.4

Dependencies: Consider the following:

- All the Multicast-Hbeat values interact to enable heartbeat monitoring. Heartbeat monitoring is an optional function. It is not required for multicast forwarding.
- Using the Multicast-Hbeat-Port, Multicast-Hbeat-Src-Addr, and Multicast-Hbeat-Src-Addr-Mask settings, you can finetune which packets the MAX TNT monitors.

Location: IP-Global

See Also: Multicast-Hbeat-Alarm-Threshold, Multicast-Hbeat-Number-Slot, Multicast-Hbeat-Port, Multicast-Hbeat-Slot-Time, Multicast-Hbeat-Src-Addr, Multicast-Hbeat-Src-Addr-Mask

# Multicast-Hbeat-Alarm-Threshold

**Description:** Specifies the minimum number of packets the MAX TNT can receive without generating an alarm trap. If the number of monitored packets falls below the Multicast-Hbeat-Alarm-Threshold value, the MAX TNT sends the following SNMP alarm trap:

Trap type: TRAP\_ENTERPRISE Code: TRAP\_MULTICAST\_TREE\_BROKEN (19) Arguments: 1) Multicast group address being monitored (4 bytes), 2) Source address of last heartbeat packet received (4 bytes) 3) Slot time interval configured in seconds (4 bytes), 4) Number of slots configured (4 bytes). 5) Total number of heartbeat packets received before the MAX TNT started sending SNMP Alarms (4 bytes).

Usage: Specify an integer. The default is 0 (zero), which disables heartbeat monitoring.

#### Example: set multicast-hbeat-alarm-threshold=3

**Dependencies:** All the Multicast-Hbeat values interact to enable heartbeat monitoring. Heartbeat monitoring is an optional function. It is not required for multicast forwarding.

Location: IP-Global

**See Also:** Multicast-Hbeat-Addr, Multicast-Hbeat-Number-Slot, Multicast-Hbeat-Port, Multicast-Hbeat-Slot-Time, Multicast-Hbeat-Src-Addr, Multicast-Hbeat-Src-Addr-Mask

#### Multicast-Hbeat-Number-Slot

**Description:** Specifies how many times the MAX TNT polls before comparing the number of multicast packets it received to the Multicast-Hbeat-Alarm-Threshold value.

Usage: Specify the number of times the MAX TNT polls for packets. The default is 0 (zero).

#### Example: set multicast-hbeat-number-slot=5

In this example, if you set Multicast-Hbeat-Slot-Time to 5 seconds and Multicast-Hbeat-Number-Slot to 10, the MAX TNT polls 10 times at 5-second intervals. After 60 seconds of elapsed time, it compares the number of heartbeat packets received to the alarm threshold. **Dependencies:** All the Multicast-Hbeat values interact to enable heartbeat monitoring. Heartbeat monitoring is an optional function. It is not required for multicast forwarding.

Location: IP-Global

**See Also:** Multicast-Hbeat-Addr, Multicast-Hbeat-Alarm-Threshold, Multicast-Hbeat-Port, Multicast-Hbeat-Slot-Time, Multicast-Hbeat-Src-Addr, Multicast-Hbeat-Src-Addr-Mask

# **Multicast-Hbeat-Port**

**Description:** Specifies a UDP port number. If specified, the MAX TNT listens only for packets received on that port.

Usage: Specify a UDP port number. The default is 0 (zero).

Example: set multicast-hbeat-port=16834

**Dependencies:** All the Multicast-Hbeat values interact to enable heartbeat monitoring. Heartbeat monitoring is an optional function. It is not required for multicast forwarding.

Location: IP-Global

See Also: Multicast-Hbeat-Addr, Multicast-Hbeat-Alarm-Threshold, Multicast-Hbeat-Number-Slot, Multicast-Hbeat-Slot-Time, Multicast-Hbeat-Src-Addr, Multicast-Hbeat-Src-Addr-Mask

# **Multicast-Hbeat-Slot-Time**

**Description:** Specifies the interval (in seconds) in which the MAX TNT polls for multicast traffic.

**Usage:** Specify the number of seconds between polling cycles. The default is 0 (zero).

Example: set multicast-hbeat-slot-time=6

**Dependencies:** All the Multicast-Hbeat values interact to enable heartbeat monitoring. Heartbeat monitoring is an optional function. It is not required for multicast forwarding.

Location: IP-Global

See Also: Multicast-Hbeat-Addr, Multicast-Hbeat-Alarm-Threshold, Multicast-Hbeat-Number-Slot, Multicast-Hbeat-Port, Multicast-Hbeat-Src-Addr, Multicast-Hbeat-Src-Addr-Mask

### Multicast-Hbeat-Src-Addr

**Description:** Specifies a multicast address. When it performs heartbeat monitoring, the MAX TNT ignores packets from the IP address you specify.

Usage: Specify an IP address in dotted decimal notation. The default is 0.0.0.0.

Example: set multicast-hbeat-src-addr=10.1.2.3

**Dependencies:** All the Multicast-Hbeat values interact to enable heartbeat monitoring. Heartbeat monitoring is an optional function. It is not required for multicast forwarding.

Location: IP-Global

See Also: Multicast-Hbeat-Addr, Multicast-Hbeat-Alarm-Threshold, Multicast-Hbeat-Number-Slot, Multicast-Hbeat-Port, Multicast-Hbeat-Slot-Time, Multicast-Hbeat-Src-Addr-Mask

# Multicast-Hbeat-Src-Addr-Mask

**Description:** Specifies a subnet mask that the MAX TNT applies to the Multicast-Hbeat-Src-Addr value.

Usage: Specify a subnet mask in dotted decimal notation. The default is 0.0.0.0.

Example: set multicast-hbeat-src-addr-mask=255.255.255.0

**Dependencies:** All the Multicast-Hbeat values interact to enable heartbeat monitoring. Heartbeat monitoring is an optional function. It is not required for multicast forwarding.

Location: IP-Global

**See Also:** Multicast-Hbeat-Addr, Multicast-Hbeat-Alarm-Threshold, Multicast-Hbeat-Number-Slot, Multicast-Hbeat-Port, Multicast-Hbeat-Slot-Time, Multicast-Hbeat-Src-Addr

#### **Multicast-Member-Timeout**

**Description:** Specifies the timeout (in seconds) for client responses to multicast polling messages.

When you configure the MAX TNT as a multicast forwarder, it forwards polling messages generated by the multicast router, and keeps track of active memberships from its client interfaces. If no client responds to the polling messages within the amount of time you specify for Multicast-Member-Timeout, the MAX TNT stops forwarding multicast traffic on that interface.

Usage: Specify an integer from 60 to 65535. The default is 360.

Example: set multicast-member-timeout=60

Dependencies: If Multicast-Forwarding=No, Multicast-Member-Timeout does not apply.

Location: IP-Global

See Also: Multicast-Allowed, Multicast-Forwarding

#### **Multicast-Rate-Limit**

**Description:** Determines the rate at which the MAX TNT accepts multicast responses from clients on the interface, and enables the MAX TNT to forward multicast traffic on the interface (provided that Multicast-Allowed=Yes). The Multicast-Rate-Limit setting helps the forwarder prevent multicast clients from creating response storms to multicast transmissions. It does not affect the MBONE interface.

**Usage:** To begin forwarding multicast traffic on the interface, specify an integer lower than 100. The default is 100, which disables the forwarding of multicast traffic on the interface.

Example: set multicast-rate-limit=5

In this example, the MAX TNT accepts a packet from multicast clients on the interface every five seconds. The MAX TNT discards any subsequent packets received in that five-second window.

**Dependencies:** If you set Multicast-Allowed=Yes and Multicast-Rate-Limit remains at the default of 100, the MAX TNT handles IGMP responses and requests on the interface but does not forward multicast traffic. You must set Multicast-Rate-Limit to a non-default value before the MAX TNT can forward multicast traffic.

**Location:** Connection *station* > IP-Options, IP-Interface {shelf-*N* slot-*N N*}

See Also: Multicast-Allowed

## **Multi-Rate-Enabled**

**Description:** Indicates whether the unit can make DWS calls.

**Usage:** The Multi-Rate-Enabled setting is read only. Yes indicates that the unit can make DWS calls. No indicates that the unit cannot make DWS calls.

Example: multi-rate-enabled=yes

Location: Base

See Also: AIM-Enabled, Countries-Enabled, Data-Call-Enabled, D-Channel-Enabled, Domestic-Enabled, Frame-Relay-Enabled, MAXLink-Client-Enabled, Modem-Dialout-Enabled, R2-Signaling-Enabled, Switched-Enabled

#### Must-Accept-Address-Assign

**Description:** Instructs the MAX TNT to hang up if a caller rejects dynamic IP address assignment.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the caller must accept dynamic IP address assignment.
- No specifies that the MAX TNT allows the caller to reject the IP address offered by the MAX TNT and present its own IP address for consideration.

#### Example: set must-accept-address-assign=yes

Location: IP-Global

See Also: Assign-Address, Assign-Count, Pool-Base-Address, Pool-Summary

# Ν

N391-Val	
	<b>Description:</b> Specifies the interval (in seconds) at which the MAX TNT requests a Full Status Report about a Frame Relay link.
	Usage: Specify an integer from 1 to 255. The default is 6.
	Example: set n391-val=15
	Dependencies: If FR-Type-Val=DCE, N391-Val does not apply.
	Location: Frame-Relay fr-name
	See Also: FR-Type-Val
N392-Val	
	<b>Description:</b> Specifies the number of errors, during DTE-N393-monitored events, that cause the user side to declare the network side's procedures inactive.
	<b>Usage:</b> Specify an integer from 1 to 10. The value you enter should be less than N393-Val. The default is 3.
	Example: set n392-val=5
	Dependencies: If FR-Type-Val=DCE, N392-Val does not apply.
	Location: Frame-Relay fr-name
	See Also: FR-Type-Val, N393-Val
N393-Val	
	Description: Specifies the DTE-monitored event count.
	<b>Usage:</b> Specify an integer from 1 to 10. The value you enter should be greater than N392-Val. The default is 4.
	Example: set n393-val=6
	Dependencies: If FR-Type-Val=DCE, N393-Val does not apply.
	Location: Frame-Relay fr-name
	See Also: FR-Type-Val, N392-Val
Nailed-Group	
	<b>Description:</b> Assigns a group number to a T1 or E1 channel, or to a Swan line. You can then refer to the number in the Connection profile's Nailed-Groups setting to specify the nailed-up channels a connection uses.
	<b>Usage:</b> Specify a number from 0 to 65535. The default is 0 (zero).
	Example: set nailed-group=7

**Dependencies:** Do not associate a group number with more than one active profile. For a T1 or E1 line, channels in a nailed-up group must be contiguous.

**Location:** E1 {shelf-*N* slot-*N N*} > Line-Interface > Channel-Config *N*, Swan {shelf-*N* slot-*N N*} > Line-Config, T1 {shelf-*N* slot-*N N*} > Line-Interface > Channel-Config *N* 

See Also: Channel-Config N, Line-Config, Line-Interface, Nailed-Groups

#### **Nailed-Groups**

**Description:** Specifies one or more nailed-up groups belonging to a session.

**Usage:** Specify a number assigned to a group of nailed-up channels. For an MP+ connection, you can assign more than one group number, separated by commas. The default is 1.

Example: set nailed-groups=1, 3

Dependencies: Only MP+ supports the use of multiple nailed-up groups.

Location: Connection station > Telco-Options

See Also: Call-Type, Nailed-Group, Telco-Options

# **Nailed-Mode**

**Description:** Specifies how the MAX TNT uses the link's nailed-up channels are used, and whether the link uses nailed-up channels alone, or a combination of nailed-up and switched channels.

Usage: Specify one of the following values:

- FT1 (the default) specifies that the link uses only nailed-up channels.
- FT1-MPP specifies that the link uses a combination of nailed-up and switched channels.
- FT1-BO specifies that the link uses a combination of nailed-up and switched channels with backup and overflow.

In providing backup bandwidth, the MAX TNT drops all the nailed-up channels when the quality of a nailed-up channel falls to Marginal or Poor in an FT1-BO call The MAX TNT then attempts to replace dropped nailed-up channels with switched channels. It also monitors dropped nailed-up channels; when the quality of all dropped channels changes to Fair or Good, the MAX TNT reinstates them.

In providing overflow protection, the MAX TNT supplies supplemental dial-up bandwidth during times of peak demand in order to prevent saturation of a nailed-up line. The circuit remains in place until the traffic subsides, and then it is removed.

Example: set nailed-mode=ft1

Location: Frame-Relay fr-name

See Also: Nailed-Up-Group

# Nailed-Up-Group

**Description:** Specifies the group number assigned to the nailed-up channels of a Frame Relay link.

Usage: Specify a number assigned to a group of nailed-up channels. The default is 32769.

Example: set nailed-up-group=5

Location: Frame-Relay *fr-name* 

See Also: Nailed-Mode

#### Name

Description: Assigns a name to a profile, user, route, host, or the MAX TNT system itself.

**Usage:** Specify a descriptive name. For all profiles except the IP-Route, IPX-Route, and Trap profiles, you can specify up to 24 characters. For the IP-Route, IPX-Route, and Trap profiles, you can specify up to 31 characters. The default is null in all except User profiles, where the default is default.

#### Example: set name=newyork

**Dependencies:** If the MAX TNT uses the specified value for authentication, it is case sensitive. In the Swan profile, the Name setting identifies the line for administrative purposes only. The unit uses only the Physical-Address to identify the Swan line.

**Location:** ADSL-Cap {shelf-*N* slot-*N N*}, BRILT {shelf-*N* slot-*N N*}, E1 {shelf-*N* slot-*N N*}, Firewall *name*, IP-Route *name*, IPX-Route *name*, SDSL {shelf-*N* slot-*N N*}, Swan {shelf-*N* slot-*N N*}, System, T1 {shelf-*N* slot-*N N*}, T3 {shelf-*N* slot-*N N*}, Trap *host-name*, User *name*,

See Also: ADSL-Cap, E1, Firewall, IP-Route, IPX-Route, Physical-Address, SDSL, Swan, System, T1, T3, Trap, User

#### **NetBIOS-Primary-NS**

Description: Specifies the IP address of the primary NetBIOS server.

**Usage:** Specify the IP address in dotted decimal notation. The default is 0.0.0, which indicates that no NetBIOS server exists.

Example: set netbios-primary-ns=10.1.2.3/24

Location: IP-Global

See Also: Domain-Name, NetBIOS-Secondary-NS

# **NetBIOS-Secondary-NS**

**Description:** Specifies the IP address of the secondary NetBIOS server. The MAX TNT accesses the secondary server if the primary NetBIOS server is unavailable.

**Usage:** Specify the IP address in dotted decimal notation. The default is 0.0.0, which indicates that no secondary NetBIOS server exists.

Example: set netbios-secondary-ns=10.57.24.11/24

Location: IP-Global

See Also: Domain-Name, NetBIOS-Primary-NS

#### **Network-Loopback**

Description: Indicates whether the T1 line is looped back to the network.

**Usage:** The Network-Loopback setting is read only. True indicates that the T1 line is looped back to the network. False indicates that the T1 line is not looped back to the network.

**Location:** T1-Stat {shelf-*N* slot-*N N*}

**See Also:** AIS-Receive, BER-Receive, Carrier-Established, Channel-State, Error-Count, Line-State, Loss-Of-Carrier, Loss-Of-Sync, Physical-Address, Port-Enabled, Yellow-Receive

## NFAS-ID

**Description:** Specifies a group ID for T1 lines that use Non-Facility Associated Signaling (NFAS). T1 lines on the same card, using the same NFAS ID, can share a D channel.

**Usage:** Specify a number from 0 to 31. You must specify a non-zero value if NFAS signaling is in use. For all signaling modes other than NFAS, you must accept the default setting of 0 (zero).

#### Example: set nfas-id=2

**Dependencies:** Within the NFAS group, you should configure only a single line to provide the primary ISDN D channel, and another line to provide the secondary (backup) D channel.

**Location:** T1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Line-Interface, Signaling-Mode, Switch-Type

# **NL-Value**

Description: Specifies the number of retransmissions the MAX TNT sends on the line.

**Usage:** Specify an integer from 1 to 255. The default is 64. You must accept the default when the line connects to a DPNSS or DASS2 switch.

#### Example: set nl-value=64

**Location:** E1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Line-Interface, Signaling-Mode, Switch-Type

# Number-Complete

**Description:** Specifies the criteria for having received enough digits on an incoming call that uses R2 signaling.

**Usage:** Specify 1-Digits, 2-Digits, up to 10-Digits, to indicate up to ten digits of a phone number. Or, to indicate that the full number has been received, accept the default End-Of-Pulsing setting.

#### Example: set number-complete=end-of-pulsing

**Location:** E1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Line-Interface, Signaling-Mode

# 0

Offset	
	<b>Description:</b> Specifies a byte-offset from the start of a frame to the data the MAX TNT tests against the filter. If the current filter is linked to the previous one (if More=Yes in the previous filter), the offset starts at the endpoint of the previous segment.
	Usage: Specify a number from 0 to 8. The default is 0 (zero), which indicates no offset.
	Example: set offset=2
	<b>Location:</b> Filter <i>filter-name</i> > Input-Filters > Gen-Filter, Filter <i>filter-name</i> > Output-Filters > Gen-Filter
	See Also: Gen-Filter, Input-Filters, Output-Filters
OSPF	
	<b>Description:</b> A subprofile that enables you to configure OSPF routing on an Ethernet interface.
	Usage: When IP-Interface is the working profile:
	<pre>admin&gt; list ospf active=no area=0.0.0.0 area=type=normal hello=interval=10 dead=interval=40 priority=5 authen=type=simple auth=key=ascend0 cost=1 down=cost=16777215 ase=type=type=1 ase=tag=c0:00:00:00 transit=delay=1 retransmit=interval=5 You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile: admin&gt; list</pre>
	admin> list
	<b>Location:</b> IP-Interface { {shelf- $N$ slot- $N$ } $N$ }

**See Also:** Active, ASE-Tag, ASE-Type, Area, Area-Type, Authen-Type, Auth-Key, Cost, Dead-Interval, Down-Cost, Hello-Interval, Priority, Retransmit-Interval, Transit-Delay

# **OSPF-ASE-Pref**

**Description:** Specifies the preference value for OSPF routes that the router learns about by means of RIP, or ICMP, or another non-OSPF protocol.

When choosing the routes to put in the routing table, the router first compares their preference values, preferring the lower number. If the preference values are equal, the router compares the metric values, using the route with the lower metric.

**Usage:** Specify a number from 0 to 255. A value of 255 means "Don't use this route." The following are the default preferences for different types of routes:

- 0 (zero)—Connected routes
- 10—OSPF routes
- 30—Routes learned from ICMP redirects
- 100—Routes learned from RIP
- 100—Static routes

#### Example: set ospf-ase-pref=100

Location: IP-Global

See Also: Down-Preference, OSPF-Pref, Preference, RIP-Pref, Static-Pref

#### **OSPF-Options**

**Description:** A subprofile that contains settings for OSPF routing.

Usage: When Connection is the working profile:

```
admin> list ip ospf
active=no
area=0.0.0.0
area-type=normal
hello-interval=30
dead-interval=120
priority=5
authen-type=simple
auth-key=ascend0
cost=10
down-cost=1000
ase-type=type-1
ase-tag=c0:00:00:00
transit-delay=1
retransmit-interval=5
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Connection *station* > IP-Options

**See Also:** Active, ASE-Tag, ASE-Type, Area, Area-Type, Authen-Type, Auth-Key, Cost, Dead-Interval, Down-Cost, Hello-Interval, IP-Options, Priority, Retransmit-Interval, Transit-Delay

# **OSPF-Pref**

**Description:** Specifies the preference for routes that the router learns about by means of the OSPF protocol.

When choosing the routes to put in the routing table, the router first compares their preference values, preferring the lower number. If the preference values are equal, the router compares the metric values, using the route with the lower metric.

**Usage:** Specify a number from 0 to 255. A value of 255 means "Don't use this route." The following are the default preferences for different types of routes:

- 0 (zero)—Connected routes
- 10—OSPF routes
- 30—Routes learned from ICMP redirects
- 100—Routes learned from RIP
- 100—Static routes

Example: set ospf-pref=10

Location: IP-Global

See Also: Down-Preference, OSPF-ASE-Pref, Preference, RIP-Pref, Static-Pref

#### **Output-Filters**

**Description:** A subprofile containing 12 output-filter configuration subprofiles. The MAX TNT applies output filters to outgoing packets.

Usage: When Filter is the working profile:

```
admin> list output
output-filters[1]={ no no generic-filter { 0 0 no no 00:00:00:00:00:00:+
output-filters[2]={ no no generic-filter { 0 0 no no 00:00:00:00:00:00:+
output-filters[3]={ no no generic-filter { 0 0 no no 00:00:00:00:00:+
output-filters[4]={ no no generic-filter { 0 0 no no 00:00:00:00:00:+
...
```

To close the Output-Filters subprofile and return to a higher context in the profile:

admin> list ..

Location: Filter filter-name

See Also: Filter-Name, Input-Filters, Input-Filters N, Output-Filters N

# Output-Filters N

Description: A subprofile containing the first level of an output-filter specification.

Usage: When Filter is the working profile:

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

```
admin> list ..
```

Location: Filter *filter-name* > Output-Filters

**See Also:** Filter-Name, Forward, Gen-Filter, Input-Filters, Input-Filters, N, IP-Filter, Output-Filters, Type, Valid-Entry

# Ρ

# **Parallel-Dialing**

Description: Specifies the total number of calls that the MAX TNT can place at the same time.

**Usage:** Specify an integer from 1 to 65535. If the MAX TNT has trouble establishing an initial connection at the full bandwidth for calls from the U.S. to another country, reduce Parallel-Dialing to a value of 2 or 1. The default is 5.

Example: set parallel-dialing=12

Location: System

See Also: Dial-Number

# Password

Description: Specifies a password that the user must enter in order to log in.

**Usage:** Specify a text string of up to 20 characters. The default is null. The value you enter is case sensitive.

Example: set password=Ascend

Location: User name

See Also: Aux-Send-Password, Recv-Password, Security-Mode, Send-Password, System-Password, Telnet-Password

# **Password-Prompt**

**Description:** Specifies the string the terminal server uses to prompt for the System-Password when authentication is in use and an interactive user initiates a connection.

Usage: Specify up to 15 characters. The default is Password: .

Example: set password-prompt=Your Password:

Dependencies: If terminal services are disabled, Password-Prompt does not apply.

Location: Terminal-Server > Terminal-Mode-Configuration

See Also: Login-Prompt, Prompt, Prompt-Format, Terminal-Mode-Configuration, Third-Login-Prompt, Third-Prompt-Sequence

# Peer-Mode

Description: Specifies whether the remote IPX caller is a router or a dial-in client.

Usage: Specify one of the following values:

- Router-Peer (the default) specifies that the caller is an IPX router.
- Dialin-Peer specifies a dial-in client.

Dependencies: Consider the following:

- A dial-in NetWare client does not have an IPX network address. To allow the client an IPX
  routing connection to the local network, the MAX TNT must assign it an IPX network
  address from the virtual IPX network specified by IPX-Dialin-Pool.
- For dial-in clients, the MAX TNT does not send RIP and SAP advertisements across the connection and ignores RIP and SAP advertisements received from the remote end. How-ever, it does respond to RIP and SAP queries it receives from dial-in clients
- If IPX routing is disabled, Peer-Mode does not apply.

Location: Connection *station* > IPX-Options

See Also: Atalk-Peer-Mode, IPX-Dialin-Pool, IPX-Options, IPX-Routing-Enabled

#### **Phone-Number**

Description: Specifies a phone number.

- In a Call-Route profile, the Phone-Number setting indicates "route any calls received on this number to me (the index address)."
- In a Frame-Relay profile, the Phone-Number setting indicates the number the MAX TNT dials to reach the switch.
- In a T1 or E1 profile, the Phone-Number setting assigns a channel an add-on number for outgoing calls.

Usage: Specify a phone number of up to 24 characters, limited to the following:

```
1234567890()[]!z-*|
```

The default is null.

#### Example: set phone-number=1212

**Dependencies:** If a nailed-up Frame-Relay datalink connection is in use, Phone-Number does not apply.

**Location:** Call-Route {{{shelf-N slot-N N} N} N}, E1 {shelf-N slot-N N} > Line-Interface > Channel-Config N, Frame-Relay *fr-name* T1 {shelf-N slot-N N} > Line-Interface > Channel-Config N

**See Also:** Call-Route-Type, Channel-Config N, Index, Line-Interface, Preferred-Source, Trunk-Group

# **Physical-Address**

Description: Identifies a physical address.

**Usage:** The physical address has the format {*shelf slot item*}. Table 3-2 lists each element of the syntax.

Table 3-2. Physical-Address syntax elements

Syntax element	Description
shelf	Specifies the shelf in which the item resides. If you are using a sin- gle-shelf system, the shelf number is always 1. For call-routing pur- poses, a value of 0 (zero) or any-shelf specifies any shelf.
slot	Specifies the number of the item's expansion slot. Physical expansion slots are numbered from 1 to 16, starting with 1 for the slot just below the shelf-controller. The slot value 17, controller, or c specifies the shelf controller card. For call-routing purposes, a value of 0 (zero) or any-slot specifies any slot.
	For example, to address the first slot on shelf 1:
	{ 1 1 0 }
item	Specifies an item on the slot card, such as a digital modem or T1 line. Items are numbered starting with #1 for the leftmost item on the card. An item number of 0 denotes the entire slot.
	For example, to address modem #48 on a modem card in slot #2 on shelf 1:
	{ 1 2 48 }

In most cases, the value of Physical-Address is obtained from the system. However, you can clone a profile by reading an existing one and changing its physical address. To modify the value:

```
admin> list physical
shelf=shelf-1
slot=slot-9
item-number=37
admin> set shelf=shelf-2
```

#### Example: set physical shelf=shelf-2

Location: ADSL-Cap {shelf-*N* slot-*N N*}, ADSL-Cap-Stat {shelf-*N* slot-*N N*}, ADSL-Cap-Statistics {shelf-*N* slot-*N N*}, ADSL-Cap-Status {shelf-*N* slot-*N N*}, BRILT {shelf-*N* slot-*N N*}, BRI-Stat {shelf-*N* slot-*N N*}, E1 {shelf-*N* slot-*N N*}, LAN-Modem {shelf-*N* slot-*N N*}, SDSL {shelf-*N* slot-*N N*}, SDSL-Stat {shelf-*N* slot-*N N*}, SDSL-Statistics {shelf-*N* slot-*N N*},

SDSL-Status {shelf- $N$ slot- $NN$ },
Serial {shelf- $N$ slot- $NN$ },
Swan { $shelf-N slot-N N$ },
Swan-Stat {shelf- $N$ slot- $NN$ },
T1 { $shelf-N slot-NN$ },
T1-Stat {shelf- $N$ slot- $NN$ },
T3 {shelf- $N$ slot- $NN$ },
T3-Stat {shelf-N slot-N N}
See Also: Device-Address, Interface-Address, Item-Number, Shelf, Slot
See Also: Device-Address, Interface-Address, Item-Number, Shelf, Slot Description: Enables and disables the terminal-server Ping command.
See Also: Device-Address, Interface-Address, Item-Number, Shelf, Slot Description: Enables and disables the terminal-server Ping command. Usage: Specify Yes or No. The default is No.
<ul> <li>See Also: Device-Address, Interface-Address, Item-Number, Shelf, Slot</li> <li>Description: Enables and disables the terminal-server Ping command.</li> <li>Usage: Specify Yes or No. The default is No.</li> <li>Yes enables terminal-server users to use the Ping command.</li> </ul>

• No disables the Ping command in the terminal-server interface.

#### Example: set ping=yes

Location: Terminal-Server > Terminal-Mode-Configuration

See Also: PPP, Rlogin, SLIP, TCP, Telnet, Terminal-Mode-Configuration, Traceroute

#### **Pool-Base-Address**

Ping

**Description:** Specifies the base addresses of up to 128 IP address pools. A contiguous block of up to 255 free addresses must be available, starting with the address you specify.

**Usage:** For each pool, specify the base IP address of a block of contiguous addresses. The default is 0.0.0.0.

#### Example: set pool-base-address 3=10.207.23.1

Dependencies: Consider the following:

- An address in a pool does not accept a subnet mask modifier, because it is advertised as host routes. If you allocate IP addresses on a separate IP network or subnet, make sure you inform other IP routers about the route to that network or subnet.
- The number of addresses in the pool must be specified by Assign-Count.
- If you are using network summarization (by means of the Pool-Summary setting), the address you specify must be network aligned.

#### Location: IP-Global

See Also: Assign-Address, Assign-Count, Must-Accept-Address-Assign, Pool-Name, Pool-Summary

# **Pool-Name**

**Description:** Assigns a name to an IP address pool for TACACS+ authentication. Each pool configuration consists of a base address (specified by Pool-Base-Address), address count (specified by Assign-Count), and name (specified by Pool-Name).

Usage: Specify a name of up to 11 characters. The default is null.

Example: set pool-name 1=newyork

**Dependencies:** If TACACS+ authentication is not in use, the MAX TNT treats a pool name specification as a comment.

#### Location: IP-Global

See Also: Assign-Address, Assign-Count, Must-Accept-Address-Assign, Pool-Base-Address, Pool-Summary

# Pool-OSPF-Adv-Type

Description: Specifies how to import summarized pool addresses into OSPF.

Usage: Specify one of the following values:

- Type-1 (the default) instructs the MAX TNT to import the pool addresses into OSPF as external Type-1 routes.
- Type-2 instructs the MAX TNT to import the pool addresses into OSPF as external Type-2 routes.
- Internal instructs the MAX TNT to import the pool addresses into OSPF as Intra-Area routes.

#### Example: set pool-ospf-adv-type=type-2

**Dependencies:** For Pool-OSPF-Adv-Type to apply, you must set Pool-Summary=Yes and enable OSPF. For a change in the Pool-OSPF-Adv-Type setting to take effect, you must reset the MAX TNT.

Location: IP-Global

See Also: Active, Pool-Summary

# **Pool-Summary**

Description: Specifies whether pool summarization is in use.

When Pool-Summary=Yes, the MAX TNT adds IP addresses from an address pool to the routing table as individual host routes, and summarizes the series of host routes into a network route advertisement. It advertises the entire pool as a route, and only privately knows which IP addresses in the pool are active. If a remote network sends a packet to an inactive IP address, the MAX TNT either bounces the packet back to the remote network, or silently discards it.

When you use pool summarization, you significantly reduce the size of routing table advertisements.

Usage: Specify Yes or No. The default is No.

- Yes enables pool summarization.
- No disables pool summarization.

Example: set pool-summary=yes

**Dependencies:** If you set Pool-Summary=Yes, you must create a network-aligned pool that adheres to the following rules:

- The value of Assign-Count must be two less than the total number of addresses in the pool. Add two to Assign-Count for the total number of addresses in the subnet, and calculate the subnet mask for the subnet based on the total.
- Pool-Base-Address must be the first host address. Subtract 1 from the Pool-Base-Address to obtain the base address for the subnet.

For example, the following configuration creates a network-aligned address pool and enables pool summarization:

```
admin> set pool-base-address=10.12.253.1
admin> set assign-count=62
admin> set pool-summary=yes
```

#### Note the following:

- When you subtract one from the value of Pool-Base-Address, you get 10.12.253.0, which is a valid base address for the 255.255.255.192 subnet mask. (Note that 10.12.253.64, 10.12.253.128, and 10.12.253.192 are also valid zero addresses for the same subnet mask.) The resulting address pool network is 10.12.253.0/26.
- When you add 2 to Assign-Count, you get 64. The subnet mask for 64 addresses is 255.255.255.192 (256–64=192). The Ascend notation for a 255.255.255.192 subnet mask is /26.

After verifying that every one of the configured address pools is network aligned, you must enter a static route for them. The static route handles all inactive IP address by routing them to the reject interface or the blackhole interface.

Location: IP-Global

See Also: Assign-Count, Pool-Base-Address, Pool-Name

#### Port

Description: Specifies the port number.

- In a Connection profile, the Port setting specifies the port on the login host to which TCP-Clear sessions connect.
- In the Terminal-Server profile, the Port setting specifies the port on the login host to which the user connects in immediate mode.
- In a Log profile, the Port setting specifies the destination port of the Syslog host.

**Usage:** Specify a port number. For a Connection or Terminal-Server profile, the default is 0 (zero). For the Log profile, the default is 514.

#### Example: set port=23

Dependencies: In the Log profile, Port does not apply if Syslog is disabled.

**Location:** Connection *station* > TCP-Clear-Options, Log Terminal-Server > Immediate-Mode-Options

**See Also:** Facility, Host, Immediate-Mode-Options, Save-Level, Save-Number, Service, Syslog-Enabled, TCP-Clear-Options

# **Port-Enabled**

**Description:** Specifies whether the MAX TNT traps serial port state changes and sends trap-PDUs to the SNMP manager.

Port changes are usually generated by a change in the call state at that port. They apply to any serial interface, including V.35/RS-449/X.21 signaling, linkup, and linkdown. Port changes do not include changes to LAN connections, such as Ethernet.

The following traps are effective on a port-by-port basis for each port pointed to by ifIndex. The hostPort objects associate a change with ifIndex objects.

- portInactive (Ascend trap-type 0) indicates that the serial port associated with the passed index has become inactive.
- portDualDelay (Ascend trap-type 1) indicates that the serial port associated with the passed index is delaying the dialing of a second port in order to avoid overloading devices that cannot handle two calls in close succession.
- portWaitSerial (Ascend trap-type 2) indicates that the serial port associated with the passed index has detected DTR and is waiting for an HDLC controller to come online. CTS is off. (This trap applies to V.25 bis dialing only.)
- portHaveSerial (Ascend trap-type 3) indicates that the serial port associated with the passed index is waiting for V.25 bis commands. CTS is on.
- portRinging (Ascend trap-type 4) indicates that the serial port associated with the passed index has been notified of an incoming call.
- portCollectDigits (Ascend trap-type 5) indicates that the serial port associated with the passed index is receiving digits from an RS366 interface. (This trap applies to RS-366 dialing only.)
- portWaiting (Ascend trap-type 6) indicates that the serial port associated with the passed index is waiting for connect notification from the WAN after dialing or answer notification has been issued.
- portConnected (Ascend trap-type 7) indicates that the serial port associated with the passed index has changed state. The change of state can be from connected to unconnected, or vice versa. If the unit is connected to the remote end, end-to-end data can flow but has not yet been enabled. The trap-report sequence portWaiting (6), portConnected (7), portCarrier (8) shows that a link is up. The trap-report sequence portConnected (7), portInactive (0) shows that a link is down.
- portCarrier (Ascend trap-type 8) indicates that the serial port associated with the passed index has end-to-end data flow enabled.
- portLoopback (Ascend trap-type 9) indicates that the serial port associated with the passed index has been placed in local loopback mode.
- portAcrPending (Ascend trap-type 10) indicates that the serial port associated with the passed index has set ACR on the RS366 interface, and is waiting for the host device. (This trap applies to RS-366 dialing only.)
- portDTENotReady (Ascend trap-type 11) indicates that the serial port associated with the passed index is waiting for DTE to signal a ready condition when performing X.21 dialing.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT sends port-change traps to the host specified by Host-Address.
- No specifies that the MAX TNT does not send port-change traps.

#### Example: set port-enabled=yes

Location: Trap host-name

See Also: Alarm-Enabled, Community-Name, Host-Address, Host-Name, Security-Mode

#### **Port-For-Direct-Access**

**Description:** Specifies a Telnet port number to use for direct access to one of the MAX TNT unit's digital modems.

To dial out, a local operator uses Telnet to connect to the specified port. When the connection to the modem is established, the user can issue AT commands to the modem as if connected locally to its asynchronous port.

Usage: Specify a Telnet port number. The default is 0 (zero).

Example: set port-for-direct-access=23

Dependencies: If terminal services are disabled, Port-For-Direct-Access does not apply.

Location: Terminal-Server > Dialout-Configuration

See Also: Dialout-Allowed, Dialout-Configuration, Telnet

# PPP

Description: Enables or disables the use of the PPP command in the terminal-server interface.

Usage: Specify Yes or No. The default is No.

- Yes enables the use of the PPP command in the terminal-server interface.
- No disables the use of the PPP command in the terminal-server interface.

#### Example: set ppp=yes

Dependencies: If terminal services are disabled, PPP does not apply.

**Location:** Terminal-Server > PPP-Mode-Configuration

**See Also:** Ping, PPP-Mode-Configuration, Rlogin, SLIP, TCP, Telnet, Terminal-Mode-Configuration, Traceroute

#### **PPP-Answer**

**Description:** A subprofile containing default settings for PPP calls. The MAX TNT also uses the PPP-Answer settings for the PPP variants, MP and MP+.

Usage: When Answer-Defaults is the working profile:

```
admin> list ppp-answer
enabled=yes
receive-auth-mode=no-ppp-auth
disconnect-on-auth-timeout=yes
bridging-group=0
link-compression=none
mru=1524
lqm=no
lqm-minimum-period=600
lqm-maximum-period=600
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Answer-Defaults

**See Also:** Bridging-Group, Disconnect-On-Auth-Timeout, Enabled, Link-Compression, LQM, LQM-Maximum-Period, LQM-Minimum-Period, MRU, Receive-Auth-Mode

#### **PPP-Mode-Configuration**

Description: A subprofile containing terminal-server options for PPP sessions.

Usage: When Terminal-Server is the working profile:

```
admin> list ppp-mode-configuration
ppp=yes
delay=5
direct=no
info=session-ppp
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Terminal-Server

See Also: Delay, Direct, Info, PPP

# **PPP-Options**

**Description:** A subprofile that contains settings for PPP calls. The MAX TNT also uses the PPP-Options settings for the PPP variants, MP and MP+.

Usage: When Connection is the working profile:

admin> list ppp-options
send-password=""
recv-password=""
enabled=yes
link-compression=stac
mru=1524
lqm=no
disconnect-on-auth-timeout=yes
lqm-minimum-period=600
lqm-maximum-period=600

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Dependencies: PPP calls must be enabled in the Answer-Defaults profile.

Location: Connection station

See Also: Disconnect-On-Auth-Timeout, Enabled, Link-Compression, LQM, LQM-Maximum-Period, LQM-Minimum-Period, MRU, Recv-Password, Send-Password

#### Preference

Description: Specifies the preference for the route

When choosing the routes to put in the routing table, the router first compares their preference values, preferring the lower number. If the preference values are equal, the router compares the metric values, using the route with the lower metric.

**Usage:** Specify a number from 0 to 255. A value of 255 means "Don't use this route," and is valid only for a WAN route specified by a Connection profile. The following are the default preferences for different types of routes:

- 0 (zero)—Connected routes
- 10—OSPF routes
- 30—Routes learned from ICMP redirects
- 100—Routes learned from RIP
- 100—Static routes

Example: set preference=100

Location: Connection *station* > IP-Options, IP-Route *name* 

See Also: Down-Preference, IP-Options, OSPF-ASE-Pref, OSPF-Pref, RIP-Pref, Static-Pref

# **Preferred-Source** Description: Specifies the address of a network port such as a T1 or E1 channel. It indicates "route calls received on this channel to me (the index address)." Usage: Specify the address of a T1 or E1 channel. The default is null. Example: set preferred-source={{1 7 7} 0} Location: Call-Route {{{shelf-*N* slot-*N N*} *N*} See Also: Call-Route-Type, Index, Phone-Number, Trunk-Group Priority **Description:** Specifies the priority of the OSPF router with regard to designated-router (DR) and backup designated-router (BDR) election. The MAX TNT can function as either a DR or a BDR. However, many sites choose to assign LAN-based routers in order to dedicate the MAX TNT to WAN processing. Usage: Specify an integer. Choose the DR- and BDR- election priority on the basis of each device's processing power and reliability. The default is 5. Example: set priority=10 **Location:** IP-Interface { {shelf-N slot-N } N } > OSPF, Connection *station* > IP-Options > OSPF-Options See Also: IP-Options, OSPF, OSPF-Options Private-Route **Description:** Specifies whether the MAX TNT advertises route information by means of routing protocols. Usage: Specify Yes or No. The default is No. Yes makes the route private. The MAX TNT uses the route internally, but does not advertise it. No specifies that the MAX TNT advertises the route by means of routing protocols. Example: set private-route=yes Location: IP-Route name, Connection station > IP-Options See Also: IP-Options, IP-Routing-Enabled, OSPF, RIP, RIP-Mode **Profile-Name Description:** Specifies the name of the Connection profile the MAX TNT uses to reach the IPX network. **Usage:** Specify a text string representing the name of the Connection profile. You can enter up to 24 characters. The default is null. Example: set profile-name=tim Location: IPX-Route name See Also: Active-Route, Dest-Network, Hops, Name, Server-Node, Server-Socket, Server-Type, Ticks

# **Profiles-Required**

	<b>Description:</b> Specifies whether the MAX TNT rejects incoming calls for which it could find no Connection profile and no entry on a remote authentication server. If you do not require a configured profile for all callers, the MAX TNT builds a temporary profile for unknown callers. Many sites consider it a security breach to use a temporary profile, and require that all callers have a configured profile.
	Usage: Specify Yes or No. The default is No.
	• Yes specifies that the MAX TNT requires a configured profile for all callers. The unit rejects calls for which it cannot find a configured profile.
	• No specifies that if the MAX TNT cannot find a configured profile, it creates a temporary profile for the caller.
	Example: set profiles-required=yes
	Dependencies: You cannot set Profiles-Required for terminal-server calls.
	Location: Answer-Defaults
	See Also: Local-Profiles-First, Receive-Auth-Mode
Prompt	
	Description: Specifies a string that the MAX TNT uses as a command-line prompt.
	Description: Specify a string to be used as a prompt. You can specify up to 15 characters.
	• In a User profile, the default is an asterisk, which causes the MAX TNT to substitute the value of the profile's name upon successful login. For example, for the admin profile, the prompt is admin>.
	• In a Terminal-Server profile, the default is ascend%.
	Example: set prompt=*
	Location: Terminal-Server > Terminal-Mode-Configuration, User <i>name</i>
	See Also: Login-Prompt, Password-Prompt, Prompt-Format, Terminal-Mode-Configuration, Third-Login-Prompt, Third-Prompt-Sequence
Prompt-Format	
·	<b>Description:</b> Specifies whether the MAX TNT interprets carriage-return/linefeed and tab characters in the string specified by Login-Prompt.
	Usage: Specify Yes or No. The default is No.
	• Yes causes the MAX TNT to interpret carriage-return/linefeed and tab characters in the string specified by Login-Prompt.
	• No specifies that the MAX TNT does not interpret carriage-return/linefeed or tab charac- ters in the string specified by Login-Prompt.
	Example: set prompt-format=no
	Dependencies: If terminal services are disabled, Prompt-Format does not apply.

 $\label{eq:location:configuration} \textbf{Location: } Terminal-Server > Terminal-Mode-Configuration$ 

See Also: Login-Prompt, Password-Prompt, Prompt, Terminal-Mode-Configuration, Third-Login-Prompt, Third-Prompt-Sequence

#### Protocol

**Description:** Specifies a protocol type by number. The MAX TNT compares the number you specify to the protocol number field in an IP packet. The default protocol number of 0 (zero) matches all protocols.

Usage: Specify one of the following values:

- 0: (Disregard protocol type when applying the filter.)
- 1: ICMP (Internet Control Message protocol)
- 2: IGMP (Internet Group Management protocol)
- 3: GGP (Gateway-to-Gateway Protocol)
- 4: IP (Internet Protocol)
- 5: ST (Stream)
- 6: TCP (Transmission Control Protocol)
- 7: UCL
- 8: EGP (Exterior Gateway Protocol)
- 9: Any private interior gateway Protocol
- 10: BBN-RCC-MON (BBN RCC Monitoring)
- 11: NVP-II (Network Voice Protocol II)
- 12: PUP
- 13: ARGUS
- 14: EMCOM
- 15: XNET (Cross-Net Debugger)
- 16: CHAOS
- 17: UDP (User Datagram Protocol)
- 18: MUX (Multiplexing)
- 19: DCN-MEAS (DCN Measurement Subsystems)
- 20: HMP (Host Monitoring Protocol)
- 21: PRM (Packet Radio Measurement)
- 22: XNS IDP (Xerox Networking System Internetwork Datagram Protocol)
- 23: TRUNK-1
- 24: TRUNK-2
- 25: LEAF-1
- 26: LEAF-2
- 27: RDP (Reliable Data Protocol)
- 28: IRTP (Internet Reliable Transport Protocol)
- 29: ISO-TP4 (International Standards Organization Transport Protocol Class 4)
- 30: NETBLT (Bulk Data Transfer Protocol)
- 31: MFE-NSP (MFE Network Services Protocol)

- 32: MERIT-INP (MERIT Internodal Protocol)
- 33: SEP (Sequential Exchange Protocol)
- 34: 3PC (Third Party Connect Protocol)
- 35: IDPR (Inter-Domain Policy Routing Protocol)
- 36: XTP
- 37: DDP (Datagram Delivery Protocol)
- 38: IDPR-CMTP (IDPR Control Message Transport Protocol)
- 39: TP++ (TP++ Transport Protocol)
- 40: IL (IL Transport Protocol)
- 41: SIP (Simple Internet Protocol)
- 42: SDRP (Source Demand Routing Protocol)
- 43: SIP-SR (SIP Source Route)
- 44: SIP-FRAG (SIP Fragment)
- 45: IDRP (Inter-Domain Routing Protocol)
- 46: RSVP (Reservation Protocol)
- 47: GRE (General Routing Encapsulation)
- 48: MHRP (Mobile Host Routing Protocol)
- 49: BNA
- 50: SIPP-ESP (SIPP Encap Security Payload)
- 51: SIPP-AH (SIPP Authentication Header)
- 52: I-NLSP (Integrated Net Layer Security Protocol)
- 53: SWIPE (IP with Encryption)
- 54: NHRP (Next Hop Resolution Protocol)
- 55-60—Unassigned
- 61: Any Host Internet Protocol
- 62: CFTP
- 63: Any local network
- 64: SAT-EXPAK (SATNET and Backroom EXPAK)
- 65: KRYPTOLAN
- 66: RVD (MIT Remote Virtual Disk Protocol)
- 67: IPPC (Internet Pluribus Packet Core)
- 68: Any distributed file system
- 69: SAT-MON (SATNET Monitoring)
- 70: VISA (VISA Protocol)
- 71: IPCU (Internet Packet Core Utility)
- 72: CPNX (Computer Protocol Network Executive)
- 73: CPHB (Computer Protocol Heart Beat)
- 74: WSN (Wang Span Network)
- 75: PVP (Packet Video Protocol)
- 76: BR-SAT-MON (Backroom SATNET Monitoring)
- 77: SUN-ND PROTOCOL-Temporary
- 78: WB-MON (WIDEBAND Monitoring)
- 79: WB-EXPAK (WIDEBAND EXPAK)
- 80: ISO-IP (International Standards Organization Internet Protocol)
- 81: VMTP
- 82: SECURE-VMTP
- 83: VINES
- 84: TTP
- 85: NSFNET-IGP (National Science Foundation Network Interior Gateway Protocol)
- 86: DGP (Dissimilar Gateway Protocol)
- 87: TCF
- 88: IGRP
- 89: OSPF (Open Shortest Path First)
- 90: Sprite-RPC
- 91: LARP (Locus Address Resolution Protocol)
- 92: MTP (Multicast Transport Protocol)
- 93: AX.25 (AX.25 Frames)
- 94: IPIP (IP-within-IP Protocol)
- 95: MICP (Mobile Internetworking Control Protocol)
- 96: SCC-IP (Semaphore Communications Security Protocol)
- 97: ETHERIP (Ethernet-within-IP Protcol)
- 98: ENCAP (Encapsulation Header)
- 99: Any private encryption scheme
- 100: GMTP
- 101-254: Unassigned
- 255: Reserved

Example: set protocol=94

**Location:** Filter *filter-name* > Input-Filters > IP-Filter, Filter *filter-name* > Output-Filters > IP-Filter

See Also: Input-Filters, IP-Filter, Output-Filters, Type

# Proxy-Mode

**Description:** Specifies how the MAX TNT uses proxy Address Resolution Protocol (ARP) on the interface.

Because devices use ARP for local addresses, Proxy-Mode applies to WAN links only when the remote device is dynamically assigned an IP address that appears to be on the local network. The MAX TNT knows that packets addressed to that host must be routed across the WAN, but to other local routers and hosts, the address appears to be on the local network. Local TCP/IP software sees the IP address as local and sends out ARP requests.

You can turn on proxy mode to enable the MAX TNT to respond to ARP requests for "local" addresses that are actually across the WAN. When proxy mode is on, the MAX TNT responds with the interface's Media Access Control (MAC) address.

Usage: Specify one of the following values:

- Off (the default) specifies that the MAX TNT does not proxy any addresses.
- Active specifies that the MAX TNT uses proxy mode only for active connections.
- Inactive specifies that the MAX TNT uses proxy mode only for inactive connections.
- Always specifies that the MAX TNT uses proxy mode for all addresses.

Example: set proxy-mode=inactive

Location: IP-Interface

See Also: Atalk-Peer-Mode, RARP-Enabled

# Q

# **Queue-Depth**

Description: Specifies the queue depth for SNMP requests.

**Usage:** Specify a number from 0 to 1024. The default is 0 (zero), which means that the MAX TNT does not drop packets, no matter how far behind the SNMP subsystem gets. If the queue were to grow too large in an extremely loaded routing environment, the system could ultimately run out of memory.

Example: set queue-depth=32

Location: SNMP

See Also: RIP-Queue-Depth

# R

# **R2-Signaling-Enabled**

**Description:** Indicates whether R2 signaling is enabled.

**Usage:** The R2-Signaling-Enabled setting is read only. Yes indicates that R2 signaling is enabled. No indicates that R2 signaling is not enabled.

Example: r2-signaling-enabled=no

#### Location: Base

See Also: AIM-Enabled, Countries-Enabled, Data-Call-Enabled, D-Channel-Enabled, Domestic-Enabled, Frame-Relay-Enabled, MAXLink-Client-Enabled, Modem-Dialout-Enabled, Multi-Rate-Enabled, Switched-Enabled

# **Rad-Acct-Client**

**Description:** A subprofile that enables you to define how the MAX TNT interacts as a client to RADIUS accounting servers.

Usage: When External-Auth is the working profile:

```
admin> list rad-acct-client
acct-server-1=0.0.0.0
acct-server-2=0.0.0.0
acct-server-3=0.0.0.0
acct-port=0
acct-src-port=0
acct-key=""
acct-timeout=0
acct-sess-interval=0
acct-id-base=acct-base-10
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

```
admin> list ..
```

Location: External-Auth

See Also: Acct-ID-Base, Acct-Key, Acct-Port, Acct-Server-N (N=1–3), Acct-Sess-Interval, Acct-Src-Port, Acct-Timeout

### **Rad-Auth-Client**

**Description:** A subprofile that enables you to define how the MAX TNT interacts as a client to RADIUS authentication servers.

Usage: When External-Auth is the working profile:

```
admin> list rad-auth-client
auth-server-1=0.0.0.0
auth-server-2=0.0.0.0
auth-server-3=0.0.0.0
auth-port=0
auth-port=0
auth-key=""
auth-pool=no
auth-timeout=0
auth-rsp-required=no
auth-rsp-required=no
auth-sess-interval=0
auth-ts-secure=yes
auth-Send67=yes
auth-frm-adr-start=no
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

```
admin> list ..
```

Location: External-Auth

See Also: Auth-Frm-Adr-Start, Auth-Key, Auth-Pool, Auth-Port, Auth-Rsp-Required, Auth-Send67, Auth-Server-N (N=1–3), Auth-Sess-Interval, Acct-Src-Port, Auth-Timeout, Auth-TS-Secure

#### **Rad-Auth-Server**

**Description:** A subprofile that enables you to define how RADIUS clients interact with the MAX TNT. With the appropriate software, clients can issue RADIUS commands for session termination and filter changes.

Usage: When External-Auth is the working profile:

```
admin> list rad-auth-server
auth-port=0
auth-session-key=no
auth-attribute-type=rad-serv-attr-any
auth-client=[ 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0
+
auth-netmask=[ 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0
+ auth-netmask=[ 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: External-Auth

**See Also:** Auth-Attribute-Type, Auth-Client N (N=1–9), Auth-Key, Auth-Netmask N (N=1–9), Auth-Port, Auth-Session-Key

## **Rad-Serv-Enable**

**Description:** Specifies whether RADIUS clients can send RADIUS commands for session termination and filter changes to the MAX TNT.

Usage: Specify Yes or No. The default is No.

- Yes specifies that RADIUS clients can send RADIUS commands to the MAX TNT.
- No specifies that RADIUS clients cannot send RADIUS commands to the MAX TNT.

Example: set rad-server-enable=no

Location: External-Auth

**See Also:** Auth-Attribute-Type, Auth-Client N (N=1–9), Auth-Key, Auth-Netmask N (N=1–9), Auth-Port, Auth-Session-Key, Rad-Auth-Server

#### **RARP-Enabled**

**Description:** Enables the MAX TNT to use the Reverse Address Resolution Protocol (RARP) to obtain its IP address from a RARP server.

Usage: Specify Yes or No. The default is No.

- Yes enables the MAX TNT to use RARP to obtain its IP address from a RARP server.
- No disables the MAX TNT unit's ability to use RARP.

Example: set rarp-enabled=yes

Location: IP-Global

See Also: Atalk-Peer-Mode, Proxy-Mode

#### **Read-Access-Hosts**

**Description:** Specifies an array containing up to five IP addresses of SNMP managers that have Read permission. If Enforce-Address-Security=Yes, the MAX TNT responds to SNMP Get and Get-Next commands only from the SNMP managers you specify.

**Usage:** Each element in the array can specify an IP address. To list the array elements when SNMP is the working profile:

```
admin> list read-access
read-access-hosts[1]=0.0.0.0
read-access-hosts[2]=0.0.0.0
read-access-hosts[3]=0.0.0.0
read-access-hosts[4]=0.0.0.0
read-access-hosts[5]=0.0.0.0
```

You can then set the value of Read-Access-Hosts by specifying its numeric index:

admin> set 1 10.2.3.4/24

Or, you can set an array element without listing the array:

admin> set read-access-hosts 1 10.2.3.4/24

Example: set read-access 2=10.5.6.7/29

**Dependencies:** You must set Enforce-Address-Security=Yes for Read-Access-Hosts to have any effect.

Location: SNMP

See Also: Enforce-Address-Security, Read-Community, Read-Write-Community, Write-Access-Hosts

### **Read-Community**

**Description:** Specifies an SNMP community name. An SNMP manager must send the correct community name to use the SNMP Get and Get-Next commands.

**Usage:** Specify the community name. You can enter up to 32 characters. The default is public.

Example: set read-community=Ascend

Location: SNMP

See Also: Enforce-Address-Security, Read-Access-Hosts, Read-Write-Community, Write-Access-Hosts

## **Read-Write-Community**

**Description:** Specifies a read/write SNMP community name. An SNMP manager must send the correct community name to access the SNMP Get, Get-Next, and Set commands.

**Usage:** Specify the community name. You can enter up to 32 characters. The default is write.

Example: set read-write-community=secret

Location: SNMP

See Also: Enforce-Address-Security, Read-Access-Hosts, Read-Community, Write-Access-Hosts

#### **Receive-Auth-Mode**

**Description:** Specifies the authentication protocol to use for incoming PPP, MP, and MP+ calls.

Usage: Specify one of the following values:

- No-PPP-Auth (the default) specifies that no authentication is required.
- PAP-PPP-Auth specifies that the connection must use Password Authentication Protocol (PAP). The remote end sends its password in the clear. The password is not encrypted.
- CHAP-PPP-Auth specifies that the connection must use Challenge Handshake Protocol (CHAP). The remote end does not send its password in the clear. Instead, an MD5 digest calculated from the password and a random challenge are sent instead.
- Any-PPP-Auth specifies that the connection must use PAP, CHAP or MS-CHAP (Microsoft's extension of CHAP).
- DES-PAP-PPP-Auth specifies that the connection must use PAP with dynamic passwords.
- Token-PAP-PPP-Auth specifies that the connection must use PAP with dynamic passwords. When you specify this setting, the system uses one-time DES password encryption and sends a challenge in the token.

- Token-CHAP-PPP-Auth specifies that the connection must use PAP-Token for the first call of a multichannel session, and CHAP for additional channels.
- Cache-Token-PPP-Auth specifies that the connection must use CHAP with dynamic passwords. The system uses CHAP with challenges, but caches token responses and uses them for authenticating additional channels.
- MS-CHAP-PPP-Auth specifies that the connection must use MS-CHAP, designed mostly for Windows NT/Lan Manager platforms. (For more information, see ftp://ftp.microsoft.com/DEVELOPR/RFC/chapexts.txt.)

#### Example: set receive-auth-mode=both-ppp-auth

**Dependencies:** You must specify a password for each PPP call if Receive-Auth-Mode is set to any value other than No-PPP-Auth.

Location: Answer-Defaults > PPP-Answer

See Also: PPP-Answer, Recv-Password, Send-Auth-Mode

# **Recv-Password**

Description: Specifies the password that the MAX TNT must receive from the caller.

**Usage:** Specify a text string of up to 20 characters. The password is case sensitive. If the MAX TNT does not require a password from the remote end, accept the default of null.

Example: set recv-password=remote

**Dependencies:** If Receive-Auth-Mode=No-PPP-Auth, Recv-Password does not apply. You must specify a value for Recv-Password if Receive-Auth-Mode specifies an authentication mode.

Location: Connection station > PPP-Options

See Also: PPP-Options, Receive-Auth-Mode, Send-Password

## **Remote-Address**

**Description:** Specifies the IP address of the remote station. The MAX TNT uses the value you specify to match the address presented by an incoming IP connection.

**Usage:** Specify an IP address in dotted decimal notation. Separate the optional subnet mask from the address by using a forward slash. The default is 0.0.0.

Example: set remote-address=10.77.156.4/24

Location: Connection station > IP-Options

See Also: IP-Options, Local-Address

## **Remote-Configuration**

**Description:** Specifies whether a RADIUS server remotely configures a login banner and a list of Telnet hosts.

Usage: Specify Yes or No. The default is No.

- Yes enables the MAX TNT to retrieve the login banner and list of Telnet hosts from RADIUS.
- No specifies that you must specify the banner and list of Telnet hosts in a local Terminal-Server profile.

#### Example: set remote-configuration=no

**Dependencies:** If terminal services are disabled or RADIUS is not in use, Remote-Configuration does not apply.

Location: Terminal-Server > Menu-Mode-Options

See Also: Banner, Host-N (N=1-4), Menu-Mode-Options, Text-N (N=1-4)

## **Reqd-State**

Description: Specifies the required operational state of a slot or device.

Changing the value of Reqd-State initiates a state change. The state change is complete when the Reqd-State value is equal to the Device-State or Current-State value.

Usage: In a Device-State profile, specify one of the following values:

- Down-Reqd-State requires the device to be in a non-operational state.
- Up-Reqd-State requires the device to be in normal operations mode.

In a Slot-State profile, specify one of the following values:

- Reqd-State-Down requires the slot to be in a non-operational state.
- Reqd-State-Up requires the slot to be in normal operations mode.

Example: set reqd-state=down-req-state

Dependencies: You can also set Reqd-State by using the Device or Slot command.

Location: Device-State {{shelf-*N* slot-*N N*}, Slot-State {shelf-*N* slot-*N N*}

See Also: Current-State, Device-State

#### **Retransmit-Interval**

**Description:** Specifies the number of seconds between retransmissions of OSPF protocol packets. OSPF uses the Retransmit-Interval value for Link-State Advertisement (LSA) transmissions, and when retransmitting Database-Description and Link-State-Request packets.

Usage: Specify a number greater than zero. The default is 5.

Example: set retransmit-interval=15

**Location:** IP-Interface {{shelf-*N* slot-*N N*} *N*} > OSPF, Connection *station* > IP-Options > OSPF-Options

See Also: IP-Options, OSPF, OSPF-Options, Transit-Delay

## RIP

**Description:** Specifies whether the link should run RIP version 1 or RIP version 2, and whether it should send updates, receive them, or both.

The IETF has voted to move RIP-v1 into the "historic" category and its use is no longer recommended. You should upgrade all routers and hosts to RIP-v2. If you must maintain RIP-v1, Ascend recommends that you create a separate subnet, and place all RIP-v1 routers and hosts on that subnet.

Usage: Specify one of the following values:

- Routing-Off (the default) specifies that the MAX TNT does not send routing updates, and ignores any routing updates it receives for the connection.
- Routing-Send-Only specifies that the MAX TNT sends RIP-v1 routing updates, but ignores any it receives for the connection.
- Routing-Recv-Only specifies that the MAX TNT does not send RIP-v1 routing updates, but accepts any routing updates it receives for the connection.
- Routing-Send-And-Recv specifies that the MAX TNT both sends RIP-v1 routing updates, and accepts any it receives for the connection.
- Routing-Send-Only-V2 specifies that the MAX TNT sends RIP-v2 routing updates, but ignores any it receives for the connection.
- Routing-Recv-Only-V2 specifies that the MAX TNT does not send RIP-v2 routing updates, but accepts any routing updates it receives for the connection.
- Routing-Send-And-Recv-V2 specifies that the MAX TNT both sends RIP-v2 routing updates, and accepts any it receives for the connection.

Example: set rip=routing-send-only-v2

Location: Connection station > IP-Options, Connection station > IPX-Options

See Also: IP-Options, IPX-Options, RIP2-Use-Multicast, RIP-ASE-Type, RIP-Mode, RIP-Policy, RIP-Pref, RIP-Tag, Summarize-RIP-Routes

#### **RIP2-Use-Multicast**

**Description:** Enables or disables the default RIP-v2 behavior of using the multicast address (224.0.0.9) to send and receive updates.

Usage: Specify Yes or No. The default is Yes.

- Yes enables RIP-v2 to use the multicast address (224.0.0.9) instead of the broadcast address for its updates.
- No disables the use of the multicast address for RIP updates. If you must use the broadcast
  address for backward compatibility with other systems, you can cause RIP updates to use
  the broadcast address by setting RIP2-Use-Multicast=No.

#### Example: set rip2-use-multicast=yes

Dependencies: The RIP2-Use-Multicast setting does not apply to RIP-v1.

Location: IP-Interface

**See Also:** RIP, RIP-ASE-Type, RIP-Mode, RIP-Policy, RIP-Pref, RIP-Tag, Summarize-RIP-Routes

# **RIP-ASE-Type**

Description: Specifies the OSPF ASE type associated with RIP routes.

Usage: Specify one of the following values:

- A value of 1 indicates type-1 metrics. A type-1 external metric is expressed in the same units as the link-state metric (interface cost). Type-1 is the default.
- A value of 2 indicates type-2 metrics. A type-2 external metric is considered larger than any link-state path. Use of type-2 external metrics assumes that routing between autonomous systems is the major cost of routing a packet, and eliminates the need for conversion of external costs to internal link-state metrics.

Example: set rip-ase-type=1

Location: IP-Global

See Also: ASE-Type

# **RIP-Mode**

**Description:** Specifies whether the interface should run RIP version 1 or RIP version 2, and whether it should send updates, receive them, or both.

The IETF has voted to move RIP-v1 into the "historic" category and its use is no longer recommended. You should upgrade all routers and hosts to RIP-v2. If you must maintain RIP-v1, Ascend recommends that you create a separate subnet, and place all RIP-v1 routers and hosts on that subnet.

Usage: Specify one of the following values:

- Routing-Off (the default) specifies that the MAX TNT does not send routing updates, and ignores any routing updates it receives.
- Routing-Send-Only specifies that the MAX TNT sends RIP-v1 routing updates, but ignores any it receives.
- Routing-Recv-Only specifies that the MAX TNT does not send RIP-v1 routing updates, but accepts any routing updates it receives.
- Routing-Send-And-Recv specifies that the MAX TNT both sends RIP-v1 routing updates, and accepts any it receives.
- Routing-Send-Only-V2 specifies that the MAX TNT sends RIP-v2 routing updates, but ignores any it receives.
- Routing-Recv-Only-V2 specifies that the MAX TNT does not send RIP-v2 routing updates, but accepts any routing updates it receives.
- Routing-Send-And-Recv-V2 specifies that the MAX TNT both sends RIP-v2 routing updates, and accepts any it receives

#### Example: set rip-mode=routing-send-only-v2

**Location:** IP-Interface {{shelf-*N* slot-*N* } *N*}

See Also: RIP, RIP2-Use-Multicast, RIP-ASE-Type, RIP-Policy, RIP-Pref, RIP-Tag, Summarize-RIP-Routes

# **RIP-Policy**

**Description:** If the MAX TNT is running RIP-v1, specifies whether the MAX TNT propagates routes back to the subnet from which they were received.

Usage: Specify one of the following values:

- Poison-Rvrs (the default) specifies that the MAX TNT propagates routes back to the subnet from which they were received, but with a metric of 16.
- Split-Horzn specifies that the MAX TNT does not propagate routes back to the subnet from which they were received.

#### Example: set rip-policy=split-horzn

**Dependencies:** The RIP-Policy setting is relevant only to RIP-v1. Ascend recommends that you do not set RIP-Policy when interacting with RIP-v2 routers.

Location: IP-Global

**See Also:** RIP, RIP2-Use-Multicast, RIP-ASE-Type, RIP-Mode, RIP-Pref, RIP-Tag, Summarize-RIP-Routes

## **RIP-Pref**

**Description:** Specifies the default preference for routes the MAX TNT learns from the Routing Information Protocol (RIP).

When choosing the routes to put in the routing table, the router first compares their preference values, preferring the lower number. If the preference values are equal, the router compares the metric values, using the route with the lower metric.

**Usage:** Specify a number from 0 to 255. A value of 255 means "Don't use this route." The following are the default preferences for different types of routes:

- 0 (zero)—Connected routes
- 10—OSPF routes
- 30—Routes learned from ICMP redirects
- 100—Routes learned from RIP
- 100—Static routes

Example: set rip-pref=50

Location: IP-Global

See Also: Down-Preference, OSPF-ASE-Pref, OSPF-Pref, Preference, Static-Pref

#### **RIP-Queue-Depth**

**Description:** Specifies the queue depth for RIP packets.

**Usage:** Specify a number between 0 and 1024. The default is 50. A value of 0 (zero) means that the MAX TNT does not drop the packets, no matter what the state of the routing subsystem or system memory.

Example: set rip-queue-depth=128

Location: IP-Global

See Also: Queue-Depth

## **RIP-Tag**

**Description:** Specifies a tag to associate with RIP routes. A tag is a 32-bit hexadecimal number. OSPF border routers can use the tag to filter a record.

Usage: Specify a 32-bit hexadecimal number. The default is c8:00:00:00.

Example: set rip-tag=cfc80000

Location: IP-Global

See Also: ASE-Tag

## Rlogin

**Description:** Enables or disables the use of the Rlogin command from the terminal-server interface.

Usage: Specify Yes or No. The default is No.

- Yes enables the use of the Rlogin command.
- No disables the use of the Rlogin command.

#### Example: set rlogin=yes

**Dependencies:** If terminal services are disabled, Rlogin does not apply. If Rlogin=No and a user attempts to initiate an Rlogin session in the terminal-server interface, the following message appears:

rlogin: not enabled.

Location: Terminal-Server > Terminal-Mode-Configuration

See Also: Ping, PPP, SLIP, TCP, Telnet, Terminal-Mode-Configuration, Traceroute

# **Robbed-Bit-Mode**

**Description:** Specifies the call-control mechanism for robbed-bit signaling. The mechanisms you can specify are based on the AT&T Special Access Connections specification for ACCUNET T1.5 services (AT&T TR 41458).

Usage: Specify one of the following values:

- Wink-Start (the default) specifies that the switch can seize the trunk by going off hook. The local unit requires the switch to wait for a 200 msec wink when it seizes a trunk.
- Idle-Start specifies that both ends seize a trunk by simply going off hook.
- Inc-W-200 specifies wink-wink signaling with a 200 msec wink time.
- Inc-W-400 specifies wink-wink signaling with a 400 msec wink time. Some switches that
  miss a wink may require the Inc-W-400 setting.
- Loop-Start specifies that the MAX TNT uses loop-start signaling instead of wink signaling. If you specify this setting, only MP+ and PPP provide an indication of call establishment or call termination. Using this setting for other types of calls is strongly discouraged. Specify it only if you cannot get wink signaling on your T1 access line
- Ground-Start specifies that the MAX TNT uses ground-start signaling.

Example: set robbed-bit-mode=wink-start

Dependencies: Consider the following:

- Robbed-Bit-Mode applies only when Signaling-Mode is set to Inband or ISDN-NFAS.
- Regardless of the type of call-control mechanism you choose, the switch should not forward dialed digits to the MAX TNT. Doing so disrupts the handshaking process during multichannel calls.

**Location:** T1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Line-Interface, Signaling-Mode

### **Route-Address**

**Description:** Specifies a route address that the MAX TNT compares to a packet's route address (after applying the mask specified by Route-Mask).

**Usage:** Specify an IP address in dotted decimal notation. The default is 0.0.0, which matches all route addresses in all packets.

Example: set route-address=10.62.201.56

**Location:** Filter *filter-name* > Input-Filters > Route-Filter, Filter *filter-name* > Output-Filters > Route-Filter

Dependencies: Route-Address applies only if Type=Route-Filter.

**See Also:** Action, Add-Persistence, Input-Filters, Output-Filters, Route-Filter, Route-Filter (subprofile), Route-Mask, Source-Address, Source-Address-Mask, Type

## **Route-Filter**

**Description:** Specifies the route filter to apply to a LAN interface (in an IP-Interface profile) or a WAN interface (in a Connection profile).

**Usage:** Specify the name of the Filter profile that contains the route-filter definition. The default is null.

Example: set route-filter=route-test

**Dependencies:** The Route-Filter setting applies only if you have defined a route filter in the Route-Filter subprofile.

**Location:** Connection *station* > IP-Options, IP-Interface {{shelf-*N* slot-*N N*} *N*}

**See Also:** Action, Add-Persistence, Route-Address, Route-Filter (subprofile), Route-Mask, Source-Address, Source-Address-Mask, Type

## **Route-Filter (subprofile)**

Description: A subprofile containing a route-filter specification.

Usage: When Filter is the working profile:

```
admin> list input 1 route-filter
source-address-mask=255.255.255.192
source-address=200.100.50.128
route-mask=0.0.0.0
route-address=0.0.0.0
add-metric=0
action=none
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Filter *filter-name* > Input-Filters, Filter *filter-name* > Output-Filters

**See Also:** Action, Add-Persistence, Input-Filters, Output-Filters, Route-Address, Route-Filter, Route-Mask, Source-Address, Source-Address-Mask, Type

# **Route-Mask**

**Description:** Specifies a mask to apply to the Route-Address before comparing the resulting value to the route address in a packet. You can use Route-Mask to hide the host portion of a route, or the host and subnet portion.

After translating the Mask and Route-Address into binary format, the MAX TNT applies the mask to the specified Route-Address using a logical AND. The mask hides the bits that appear behind each binary 0 (zero) in the mask.

**Usage:** Specify a mask in dotted decimal notation. A mask of all ones (FF:FF:FF:FF:FF:FF:FF:FF:FF) masks no bits, so the Route-Address value must match the full route address for a single host. The default is 0.0.0.0, which matches all route addresses.

Example: set route-mask=255.255.255.0

Dependencies: Route-Mask applies only if Type=Route-Filter.

**Location:** Filter *filter-name* > Input-Filters > Route-Filter, Filter *filter-name* > Output-Filters > Route-Filter

**See Also:** Action, Add-Persistence, Input-Filters, Output-Filters, Route-Address, Route-Filter, Route-Filter (subprofile), Source-Address, Source-Address-Mask, Type

## **Routing-Metric**

Description: Assigns a RIP-style metric to a route.

Usage: Specify an integer from 1 to 15. The default is 7.

Example: set routing-metric=1

Location: Answer-Defaults > IP-Answer, Connection station > IP-Options

See Also: IP-Answer, IP-Options, Private-Route, RIP

# **RS-Corrected-Errors**

Description: Indicates the number of Reed Solomon (RS) errors that have been corrected.

Usage: The RS-Corrected-Errors setting is read only.

**Location:** ADSL-Cap-Statistics {shelf-*N* slot-*N N*}

See Also: Connection-SQ, HDLC-RX-CRC-Error-Cnt, Line-Quality, Line-Up-Timer, Physical-Address, RS-Errors, RX-Attenuation, RX-Signal-Present, Self-Test, Transmit-Power, Up-Down-Cntr

## **RS-Errors**

Description: Indicates the number of Reed Solomon (RS) errors that have not been corrected.

Usage: The RS-Errors setting is read only.

**Dependencies:** Only the Customer Premises Unit (CPE) unit uses the value of RS-Errors. If the CPE unit detects a very high rate of RS errors (255 every 50ms) for eight consecutive seconds, it disconnects the line.

**Location:** ADSL-Cap-Statistics {shelf-*N* slot-*N N*}

**See Also:** Connection-SQ, HDLC-RX-CRC-Error-Cnt, Line-Quality, Line-Up-Timer, Physical-Address, RS-Corrected-Errors, RX-Attenuation, RX-Signal-Present, Self-Test, Transmit-Power, Up-Down-Cntr

## **RX-Attenuation**

Description: Indicates the attenuation level of the signal transmitted by the remote end.

Usage: The RX-Attenuation setting is read only.

**Location:** ADSL-Cap-Statistics {shelf-*N* slot-*N N*}

See Also: Connection-SQ, HDLC-RX-CRC-Error-Cnt, Line-Quality, Line-Up-Timer, Physical-Address, RS-Corrected-Errors, RS-Errors, RX-Signal-Present, Self-Test, Transmit-Power, Up-Down-Cntr

#### **RX-Signal-Present**

Description: Indicates whether the local node is receiving a signal from the remote node.

**Usage:** The RX-Signal-Present setting is read only. Yes indicates that the local node is receiving a signal from the remote node. No indicates that the local node is not receiving a signal from the remote node.

Location: ADSL-Cap-Statistics {shelf-N slot-N N}, SDSL-Statistics {shelf-N slot-N N}

**See Also:** Far-End-db-Attenuation, Line-Quality, Line-Up-Timer, Physical-Address, Self-Test, Up-Down-Cntr, Connection-SQ, HDLC-RX-CRC-Error-Cnt, RS-Corrected-Errors, RS-Errors, RX-Attenuation, Transmit-Power

# S

# Save-Level

**Description:** Indicates the lowest level of log messages the MAX TNT displays in the log status window.

Usage: Specify one of the following values:

- None (the default) specifies that the MAX TNT does not display log messages.
- Emergency messages indicate that the unit has an error condition and is unlikely to be operating normally.
- Alert messages indicate that the unit has an error condition but is still operating normally.
- Critical messages indicate that an interface has gone down or that a security error has occurred.
- Error messages indicate that an error event has occurred.
- Warning messages indicate that an unusual event has occurred, but that the unit is otherwise operating normally. For example, this type of message appears when a login attempt has failed because the user entered an incorrect user name or password.
- Notice messages indicates events of interest in normal operation, such as a link going up or down.
- Info messages indicates state and status changes that are commonly not of general interest.
- Debug messages provide helpful debugging information.

Example: set save-level=error

Dependencies: Log levels are also configurable on a per-user basis in User profiles.

Location: Log

See Also: Facility, Host, Log-Display-Level, Save-Number, Syslog-Enabled

## Save-Number

**Description:** Specifies the maximum number of log messages that the MAX TNT saves for display in the status windows.

Usage: Specify an integer. The default is 100.

Example: set save-number=150

Location: Log

See Also: Facility, Host, Log-Display-Level, Save-Level, Syslog-Enabled

# SDSL

Description: A profile containing configuration settings for an SDSL card.

Usage: To make SDSL the working profile and list its contents:

```
admin> read sdsl {1 1 0}
SDSL/{ shelf-1 slot-1 0 } read
admin> list
name=""
physical-address*={ shelf-1 slot-1 0 }
enabled=no
line-config={ 0 0 static { any-shelf any-slot 0 } }
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> write SDSL/{ shelf-1 slot-1 0 } written

See Also: Enabled, Line-Config, Name, Physical-Address

# SDSL-Stat

Description: A profile indicating the status of the SDSL line.

Usage: To make SDSL-Stat the working profile and list its contents:

```
admin> read sdsl-stat {1 1 0}
SDSL-STAT/{ shelf-1 slot-1 0 } read
admin> list
physical-address*={ shelf-1 slot-1 0 }
line-state=active
error-count=0
```

See Also: Error-Count, Line-State, Physical-Address

#### SDSL-Statistics

Description: A profile that reports statistics about the SDSL interface.

Usage: To make SDSL-Statistics the working profile and list its contents:

```
admin> read sdsl-statistics {1 1 0}
SDSL-STATISTICS/{ shelf-1 slot-1 0 } read
admin> list
physical-address*={ shelf-1 slot-1 0 }
line-up-timer={ 0 0 0 }
rx-signal-present=yes
line-quality=15
up-down-cntr=1
self-test=passed
far-end-db-attenuation=4
```

See Also: Far-End-db-Attenuation, Line-Quality, Line-Up-Timer, Physical-Address, RX-Signal-Present, Self-Test, Up-Down-Cntr

## SDSL-Status

**Description:** A profile that indicates the status of the SDSL interface.

Usage: To make SDSL-Status the working profile and list its contents:

```
admin> read sdsl-status {1 1 0}
SDSL-STATUS/{ shelf-1 slot-1 0 } read
admin> list
physical-address*={ shelf-1 slot-1 0 }
if-group-index=0
unit-type=coe
dev-line-state=startup-handshake
up-stream-rate=784000
down-stream-rate=784000
major-firmware-ver=13
minor-firmware-ver=2
hardware-ver=2
```

See Also: Dev-Line-State, Down-Stream-Rate, Hardware-Ver, IF-Group-Index, Major-Firmware-Ver, Minor-Firmware-Ver, Physical-Address, Unit-Type, Up-Stream-Rate

#### Sec-Domain-Name

**Description:** Specifies a secondary domain name that the MAX TNT searches using Domain Name System (DNS).

Usage: Specify a secondary domain name. The default is null.

Example: set sec-domain-name=xyz.com

Location: IP-Global

See Also: Domain-Name, DNS-Primary-Server, DNS-Secondary-Server

#### Seconds-History

**Description:** Specifies the number of seconds to use as the basis for calculating average line utilization (ALU). When the ALU exceeds or falls below the Target-Utilization percentage for a specified number of seconds, the MAX TNT adds or subtracts bandwidth.

Usage: Specify an integer from 1 to 300. The default is 15 seconds.

Example: set seconds-history=60

**Dependencies:** The number of seconds you specify should be related to traffic patterns. For example, if you want to average spikes with normal traffic flow, you may want the MAX TNT to establish a longer historical time period. If, on the other hand, traffic patterns consist of many spikes that are short in duration, you may want to specify a shorter period of time. Doing so gives less weight to the short spikes.

Location: Answer-Defaults > MPP-Answer, Connection station > MPP-Options

**See Also:** Add-Persistence, Bandwidth-Monitor-Direction, Base-Channel-Count, Decrement-Channel-Count, Dynamic-Algorithm, Increment-Channel-Count, Minimum-Channels, Maximum-Channels, MPP-Answer, MPP-Options, Sub-Persistence, Target-Utilization

## Security-Enabled

**Description:** Specifies whether the MAX TNT traps security events and sends a traps-PDU to the SNMP manager.

Security events notify users of security problems and track access to the unit. See the Ascend Enterprise MIB for the most up-to-date information. The MAX TNT traps the following security events:

- authenticationFailure (RFC-1215 trap-type 4) indicates that the MAX TNT sending the trap is the addressee of a protocol message that is not properly authenticated.
- consoleStateChange (Ascend trap-type 12) indicates that the console associated with the passed console index has changed state. To read the console's state, get ConsoleEntry from the Ascend Enterprise MIB.
- portUseExceeded (Ascend trap-type 13) indicates that the port's use exceeds the maximum number of DS0s associated with the passed index.
- systemUseExceeded (Ascend trap-type 14) indicates that the port's use exceeds the maximum number of DS0s associated with the passed index.
- maxTelnetAttempts (Ascend trap-type 15) indicates that there have been three consecutive failed attempts to login into the MAX TNT via Telnet.

Usage: Specify Yes or No. The default is Yes.

- Yes specifies that the MAX TNT sends security-event traps to the host specified by Host-Address.
- No specifies that the MAX TNT does not send security-event traps.

Example: set security-enabled=yes

Location: Trap *host-name* 

See Also: Alarm-Enabled, Community-Name, Host-Address, Host-Name, Port-Enabled

#### Security-Mode

Description: Specifies the type of terminal-server security in use.

Usage: Specify one of the following values:

- None (the default) specifies that a user name and password are not required for terminal-server access.
- Partial specifies that a user name, password, or both are required in command mode, but not in menu mode. If an interactive user toggles between menu mode and command mode, a password and user name are required only upon entry to command mode.
- Full specifies that a user name, password, or both are required in order to enter the terminal server in both command mode and menu mode.

Example: set security-mode=full

Location: Terminal-Server

See Also: Menu-Mode-Options, System-Password

## Self-Test

Description: Indicates whether the card has passed the Power-On Self Test (POST).

**Usage:** The Self-Test setting is read only. Passed indicates that the card passed the POST. Failed indicates that the card failed the POST.

**Location:** ADSL-Cap-Statistics {shelf-*N* slot-*N N*}, SDSL-Statistics {shelf-*N* slot-*N N*}

See Also: Far-End-db-Attenuation, Line-Quality, Line-Up-Timer, Physical-Address, RX-Signal-Present, Up-Down-Cntr, Connection-SQ, HDLC-RX-CRC-Error-Cnt, RS-Corrected-Errors, RS-Errors, RX-Attenuation, Transmit-Power

#### Send-Auth-Mode

**Description:** Specifies the authentication protocol that the MAX TNT requests when initiating an outgoing call using PPP, MP, or MP+ encapsulation. The answering side of the connection determines which authentication protocol the connection uses (if any).

Usage: Specify one of the following values:

- No-PPP-Auth (the default) specifies that no authentication is requested.
- PAP-PPP-Auth specifies that the connection requests Password Authentication Protocol (PAP). The remote end sends its password in the clear. The password is not encrypted.
- CHAP-PPP-Auth specifies that the connection requests Challenge Handshake Protocol (CHAP). The remote end does not send its password in the clear. Instead, an MD5 digest calculated from the password and a random challenge are sent instead.
- Any-PPP-Auth specifies that the connection requests PAP, CHAP or MS-CHAP (Microsoft's extension of CHAP).
- DES-PAP-PPP-Auth specifies that the connection requests PAP with dynamic passwords.
- Token-PAP-PPP-Auth specifies that the connection requests PAP with dynamic passwords. When you specify this setting, the system uses one-time DES password encryption and sends a challenge in the token.
- Token-CHAP-PPP-Auth specifies that the connection requests PAP-Token for the first call of a multichannel session, and CHAP for additional channels.
- Cache-Token-PPP-Auth specifies that the connection requests CHAP with dynamic passwords. The system uses CHAP with challenges, but caches token responses and uses them for authenticating additional channels.
- MS-CHAP-PPP-Auth specifies that the connection requests MS-CHAP, designed mostly for Windows NT/Lan Manager platforms. (For more information, see ftp://ftp.microsoft.com/DEVELOPR/RFC/chapexts.txt.)

#### Example: set send-auth-mode=any-ppp-auth

**Dependencies:** For incoming calls, the Send-Auth-Mode setting has no effect. The MAX TNT uses the Recv-Auth-Mode setting to specify the authentication method for incoming PPP calls.

**Location:** Connection *station* > PPP-Options

See Also: PPP-Options, Receive-Auth-Mode, Send-Password

Send-Password	l de la constante de
	<b>Description:</b> Specifies the password the MAX TNT sends to the remote end during authentication of an outgoing PPP connection.
	<b>Usage:</b> Specify up to 20 characters. The password is case sensitive. If the remote end does not require a password, accept the default of null.
	Example: set send-password=Ascend
	<b>Dependencies:</b> You must specify a value for Send-Password when PAP, CHAP, or Cache-Token authentication is in use. If the Connection profile does not make outgoing calls, do not enter a value for Send-Password.
	Location: Connection <i>station</i> > PPP-Options
	See Also: PPP-Options, Recv-Password, Send-Auth-Mode
Serial	
	<b>Description:</b> A profile that specifies physical interface settings for a system serial interface.
	Usage: To make Serial the working profile and list its contents:
	admin> <b>read serial { 1 c 2 }</b> SERIAL/{ shelf-1 controller 2 } read
	<pre>admin&gt; list physical-address*={ shelf-1 controller 2 } term-rate=9600-bps flow-control=none user-profile=admin auto-logout=no</pre>
	You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:
	admin> <b>write</b> SERIAL/{ shelf-1 controller 2 } written
	See Also: Auto-Logout, Flow-Control, Physical-Address, Term-Rate, User-Profile
Serial-Number	
	Description: Displays the MAX TNT unit's serial number.
	Usage: The Serial-Number setting is read only.
	Example: serial-number=6201732
	Location: Base, Slot-Info {shelf- <i>N</i> slot- <i>N N</i> }
	See Also: Software-Level, Software-Revision, Software-Version

## Server-Node

**Description:** Specifies the node number for the NetWare server.

**Usage:** Specify a hexadecimal number of up to 12 digits. The default is 000000000001 (the typical node number for a NetWare file server).

Example: set server-node=00:00:00:00:00:01

Location: IPX-Route name

**See Also:** Active-Route, Dest-Network, Hops, Name, Profile-Name, Server-Socket, Server-Type, Ticks

#### Server-Socket

**Description:** Specifies the socket number for the NetWare server.

**Usage:** Enter a hexadecimal number of up to four digits. Typically, the NetWare file server uses socket 0451. The default is 0000.

Example: set server-socket=04:51

**Dependencies:** The number you specify must be a well-known socket number. Services that use dynamic socket numbers might use a different socket each time they load. To bring up a connection to a remote service that uses a dynamic socket number, specify a master server that uses a well-known socket number.

Location: IPX-Route name

**See Also:** Active-Route, Dest-Network, Hops, Name, Profile-Name, Server-Node, Server-Type, Ticks

## Server-Type

**Description:** Specifies the Service Advertising Protocol (SAP) service type of the NetWare server.

**Usage:** Specify a hexadecimal number of up to four digits. A NetWare file server has SAP service type 0004. The default is 0000.

#### Example: set server-type=0004

Location: IPX-Route *name* 

**See Also:** Active-Route, Dest-Network, Hops, Name, Profile-Name, Server-Node, Server-Socket, Ticks

# Service

**Description:** Enables or disables immediate mode, and specifies the immediate service type. In immediate mode, an interactive user immediately connects to a host by means of a specified service.

Usage: Specify one of the following values:

- None (the default) specifies no immediate service.
- Telnet specifies immediate Telnet service.
- Raw-TCP specifies an immediate TCP connection.
- Rlogin specifies immediate Rlogin service.

Example: set service=rlogin

Dependencies: If terminal services are disabled, Service does not apply.

Location: Terminal-Server > Immediate-Mode-Options

See Also: Host, Immediate-Mode-Options, Port, Service, Telnet-Host-Auth

#### **SessionID-Base**

**Description:** Specifies the base number the MAX TNT uses for generating a unique ID for each session.

The MAX TNT can pass a session ID to SNMP, RADIUS, or other external entities. If the value of SessionID-Base is nonzero, the MAX TNT uses it as the initial base for calculating session IDs following a system reset. The ID for each subsequent session is incremented by 1.

If SessionID-Base is zero, the MAX TNT sets the initial base for session IDs to the absolute clock. For example, if the clock is 0x11cf4959, the subsequent session IDs uses 0x11cf4959 as a base. However, if the clock is changed and the system reboots or clears NVRAM, session IDs may be duplicated.

**Usage:** Specify an integer from 1 to 2147483647. The default is 0 (zero), which causes the MAX TNT to generate a session ID base using the absolute clock.

#### Example: set sessionid-base=5

**Dependencies:** You can also set a session ID base by using the Set Sessid command in the terminal-server interface. The terminal server provides a Show Sessid command to display the next session ID the unit will use.

#### Location: System

See Also: Analog-Encoding, Call-Routing-Sort-Method, Idle-Logout, Name, Master-Shelf-Controller, Parallel-Dialing, Shelf-Controller-Type, Single-File-Incoming, System-Rmt-Mgmt, Use-Trunk-Groups

## Session-Info

**Description:** A subprofile containing default settings for incoming connections. The settings in the Session-Info subprofile are not specific to any encapsulation method or network protocol.

Usage: When Answer-Defaults is the working profile:

```
admin> list session-info
call-filter=""
data-filter=""
filter-persistence=no
idle-timer=120
ts-idle-mode=no-idle
ts-idle-timer=120
max-call-duration=0
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Answer-Defaults

**See Also:** Call-Filter, Data-Filter, Filter-Persistence, Idle-Timer, Max-Call-Duration, TS-Idle-Mode, TS-Idle-Timer

#### **Session-Options**

**Description:** A subprofile that specifies session settings not specific to any encapsulation method or network protocol.

Usage: When Connection is the working profile:

```
admin> list session
call-filter=""
data-filter=""
filter-persistence=no
idle-timer=120
ts-idle-mode=no-idle
ts-idle-timer=120
backup=""
max-call-duration=0
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Connection station

**See Also:** Backup, Call-Filter, Data-Filter, Filter-Persistence, Idle-Timer, Max-Call-Duration, TS-Idle-Mode, TS-Idle-Timer

Shared-Prof		
	<b>Description:</b> Specifies whether multiple incoming calls can share a Connection profile.	
	Usage: Specify Yes or No. The default is No.	
	• Yes specifies that the MAX TNT allows more than one caller to share the same profile, provided that no IP address conflicts result.	
	• No specifies that the MAX TNT does not allow shared profiles.	
	Example: set shared-prof=no	
	<b>Dependencies:</b> Use the Shared-Prof setting only when the MAX TNT dynamically assigns each caller an IP address. A shared profile cannot contain a hard-coded remote IP address.	
	Location: IP-Global	
	See Also: Assign-Count, Address-Pool, Must-Accept-Address-Assign, Pool-Base-Address	
Shelf		
	<b>Description:</b> Specifies the shelf in which the item resides. If you are using a single-shelf system, the shelf number is always 1. For call-routing purposes, a value of 0 (zero) or any-shelf specifies any shelf.	
	Usage: Specify an integer from 1 to 6.	
	Example: set shelf=1	
	Location: Device-Address, Physical-Address, Call-Route-Info	
	See Also: Call-Route-Info, Device-Address, Item-Number, Physical-Address, Slot	
Shelf-Controller-Type		
	<b>Description:</b> Specifies the type of controller on the shelf.	
	Usage: Specify one of the following values:	
	• Standalone (the default) specifies a single-shelf system.	
	• Master specifies the master shelf. In a multishelf system, you can set only one shelf to Master.	
	• Slave specifies any shelf other than the master shelf.	
	Example: set shelf-controller-type=master	
	Location: System	
	See Also: Master-Shelf-Controller	
Shelf-Number		
	Description: Indicates the shelf number of the MAX TNT unit.	
	Usage: The Shelf-Number setting is read only.	
	Example: shelf-number=1	
	Location: Base	
	See Also: Master-Shelf-Controller, Shelf, Shelf-Controller-Type	

## Signaling-Mode

Description: Specifies the type of signaling used on a T1 or E1 line.

Usage: For a T1 line, specify one of the following values:

- Inband (the default) specifies inband, robbed-bit signaling. When you specify Inband, the MAX TNT reads Robbed-Bit-Mode for the call-control mechanism.
- ISDN specifies ISDN signaling using the D channel.
- ISDN-NFAS specifies Non-Facility Associated Signaling (NFAS). NFAS enables a group of T1 lines on the same card to share a D channel. All NFAS lines that share a D channel must use the same NFAS group ID. You must configure one of the lines to provide the primary D channel and secondary (backup) D channel.

For an E1 line, specify one of the following values:

- ISDN specifies ISDN signaling using the D channel.
- E1-R2-Signaling specifies R2 signaling.
- E1-Korean-Signaling specifies a version of the R2 signaling protocol for use in Korea.
- E1-P7-Signaling specifies P7 signaling.
- E1-Chinese-Signaling specifies a version of the R2 signaling protocol for use in China.
- E1-Metered-Signaling specifies the metered R2 signaling protocol, used in Brazil and South Africa.
- E1-No-Signaling specifies a nailed-up line.
- E1-DPNSS-Signaling specifies DPNSS or DASS 2 signaling.

Example: set signaling-mode=isdn

Location: T1 {shelf-N slot-N N} > Line-Interface, E1 {shelf-N slot-N N} > Line-Interface

**See Also:** Call-By-Call, Caller-ID, Channel-Usage, Data-Service, D-Channel-Enabled, Encoding, FDL, Frame-Type, Line-Interface, NFAS-ID, Number-Complete, R2-Signaling-Enabled, Robbed-Bit-Mode, Switch-Type

## Silent-Mode

**Description:** Specifies whether the MAX TNT suppresses status messages upon establishment of an interactive terminal-server connection.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the MAX TNT suppresses status messages upon establishment of an interactive terminal-server connection.
- No specifies that the MAX TNT sends all status messages upon establishment of an interactive terminal-server connection.

Example: set silent-mode=yes

Dependencies: If terminal services are disabled, Silent-Mode does not apply.

Location: Terminal-Server > Terminal-Mode-Configuration

See Also: Terminal-Mode-Configuration

## Single-File-Incoming

**Description:** Specifies whether the MAX TNT treats incoming calls as a single-file list, or handles them in parallel.

Usage: Specify Yes or No. The default is Yes.

- Yes specifies that the MAX TNT answers and routes one call before answering and routing the next call.
- No specifies that the MAX TNT answers and routes an incoming call immediately.

Example: set single-file-incoming=yes

Location: System

See Also: Parallel-Dialing

## SLIP

Description: Enables or disables the use of the terminal-server SLIP command.

Usage: Specify Yes or No. The default is No.

- Yes enables a user to begin SLIP sessions from the terminal-server interface.
- No disables a user from beginning SLIP from the terminal-server interface.

#### Example: set slip=yes

Dependencies: If terminal services are disabled, SLIP does not apply.

**Location:** Terminal-Server > SLIP-Mode-Configuration

**See Also:** Ping, PPP, Rlogin, SLIP-Mode-Configuration, TCP, Telnet, Terminal-Mode-Configuration, Traceroute

## **SLIP-BOOTP**

Description: Specifies whether the MAX TNT responds to BOOTP within SLIP sessions.

Usage: Specify Yes or No. The default is No.

- Yes enables the MAX TNT to respond to a BOOTP request from the calling unit during a SLIP session. An interactive user who initiates a SLIP session can get an IP address from the designated IP address pool by means of BOOTP.
- No disables BOOTP for a SLIP session. The user is prompted to accept an IP address at the start of the SLIP session.

Example: set slip-bootp=yes

Dependencies: If terminal services are disabled, SLIP-BOOTP does not apply.

Location: Terminal-Server > SLIP-Mode-Configuration

See Also: Assign-Count, Address-Pool, Pool-Base-Address, SLIP, SLIP-Mode-Configuration

## **SLIP-Mode-Configuration**

**Description:** A subprofile with terminal-server configuration options for asynchronous Serial Line IP (SLIP) users.

Usage: When Terminal-Server is the working profile:

admin> **list slip** slip=no slip-bootp=no

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Terminal-Server

See Also: SLIP, SLIP-BOOTP

### Slot

Description: Specifies the number of the item's expansion slot.

Physical expansion slots are numbered from 1 to 16, starting with 1 for the slot just below the shelf-controller. The slot value 17, controller, or c specifies the shelf controller card. For call-routing purposes, a value of 0 (zero) or any-slot specifies any slot. For example, to address the first slot on shelf 1:

{ 1 1 0 }

For a 48-modem card, which uses two slots, the slot number is always the lower of the two slots. For example, if the card uses slots 2 and 3, the following specification addresses the entire slot card:

 $\{ 1 2 0 \}$ 

Usage: Specify an integer from 1 to 17.

Example: set slot=10

Location: Device-Address, Physical-Address, Call-Route-Info

See Also: Call-Route-Info, Device-Address, Item-Number, Physical-Address, Shelf

#### **Slot-Address**

Description: Indicates the physical address of the slot.

**Usage:** In most cases, the value of Slot-Address is obtained from the system. However, you can clone a profile by reading an existing one and changing its physical address. To modify the value:

```
admin> list slot
shelf=shelf-1
slot=slot-9
item-number=37
admin> set shelf=shelf-2
```

Example: set slot shelf=shelf-2

**Location:** Slot-Info {shelf-*N* slot-*N N*}, Slot-State {shelf-*N* slot-*N N*}, Slot-Type {shelf-*N* slot-*N N*}

See Also: Physical-Address

## Slot-Info

**Description:** A profile that displays the software version, serial number, and other system information about the MAX TNT.

Usage: The Slot-Info profile is read only. To display its contents:

```
admin> get slot-info
slot-address={ shelf-1 slot-7 0 }
serial-number=7777777
software-version=1
software-revision=2
software-level=E
```

**See Also:** Serial-Number, Slot-Address, Software-Level, Software-Revision, Software-Version

# Slot-State

**Description:** A profile that stores the current state of a slot card. The Slot-State profile does not reside in NVRAM, so it is not persistent across system resets or power cycles. SNMP managers can read the Slot-State profile.

Usage: To make Slot-State the working profile and list its contents:

```
admin> read slot-state {1 2 0}
SLOT-STATE/{ shelf-1 slot-2 0 } read
admin> list
slot-address*={ shelf-1 slot-2 0 }
current-state=oper-state-none
reqd-state=reqd-state-up
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

```
admin> write
SLOT-STATE/{ shelf-1 slot-2 0 } written
```

See Also: Current-State, Reqd-State, Slot-Address

# Slot-Type

**Description:** Specifies the type of device in the slot. If the actual type of device discerned by the system at startup differs from the type specified by Slot-Type, the MAX TNT assumes that you have changed slot cards. The unit deletes the old SNMP interface numbers.

Usage: Specify one of the following values:

- None specifies that no card is installed.
- Unknown specifies that the software does not recognize the card.
- Shelf-Controller specifies the MAX TNT shelf controller.
- Router-Card specifies a standalone router card.
- 8T1-Card specifies an eight-line T1 card.
- 8E1-Card specifies an eight-line E1 card.
- 48Modem-Card specifies a 48-modem card.
- 192HDLC-Card specifies a 192-channel HDLC card.
- 4Ether-Card specifies a four-interface Ethernet card.
- 4Swan-Card specifies a four-interface serial WAN card.
- 4HSSI-card specifies a four-interface high-speed serial card.
- 10FT1-Card specifies a ten-interface unchannelized T1 card.
- Analog-Modem-Card a 36-analog-modem card.
- T3-Card specifies a single-interface channelized DS3.

Example: set slot-type=8t1-card

**Location:** Admin-State {shelf-*N* slot-*N N*}, Slot-Type {shelf-*N* slot-*N N*}

**Dependencies:** You can also display the slot type for a particular device by using the terminal-server Show command.

See Also: Slot, Slot-Address, Slot-Info, Slot-State, Slot-Type (profile)

## Slot-Type (profile)

**Description:** A profile that stores the type of slot card installed in each shelf/slot location. The Slot-Type profile resides in NVRAM and persists over system resets.

**Usage:** To make Slot-Type the working profile and list its contents:

```
admin> read slot-type {1 8 0}
SLOT-TYPE/{ shelf-1 slot-8 0 } read
admin> list
slot-address*={ shelf-1 slot-8 0 }
slot-type=8e1-card
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

```
admin> write
SLOT-TYPE/{ shelf-1 slot-8 0 } written
```

See Also: Slot, Slot-Address, Slot-Info, Slot-State, Slot-Type

### SNMP

**Description:** A profile containing settings that determine SNMP security, specify a contact and location, and control which hosts can access the MAX TNT by means of the SNMP manager utilities.

Usage: To make SNMP the working profile and list its contents:

```
admin> read snmp
SNMP read
admin> list
enabled=no
read-community=public
read-write-community=write
enforce-address-security=no
read-access-hosts=[ 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0]
write-access-hosts=[ 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0]
contact=""
location=""
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> **write** SNMP written

**See Also:** Contact, Enabled, Enforce-Address-Security, Location, Read-Access-Hosts, Read-Community, Read-Write-Community, Write-Access-Hosts

## **SNMP-Interface**

Description: Indicates the SNMP interface number assigned to the device by the system.

Usage: The SNMP-Interface setting is read only.

Example: snmp-interface=65

**Dependencies:** At system startup, the MAX TNT reads the Admin-State profiles. If the addressed device is not present in the system and has been replaced by a device of another type, the MAX TNT deletes the profile associated with the device. The next time the system is reset or power cycles, the old device's SNMP interface number is made available for reassignment. Therefore, removing a slot card and leaving the slot empty does not free up interface numbers. When you reinstall the slot card, the MAX TNT reassigns the same interface number.

In addition, removing a slot card and replacing it with a slot card of another type does not immediately free up the old interface numbers. New numbers are assigned to the new slot card, and the old numbers are made available at the next power cycle or system reset.

**Location:** Admin-State {shelf-*N* slot-*N N*}

See Also: SNMP

## SNTP-Info

**Description:** A subprofile containing settings required to maintain the system time from a Simple Network Time Protocol (SNTP) server.

Usage: When IP-Global is the working profile:

admin> **list sntp** enabled=no GMT-offset=utc+0000 host=[ 0.0.0.0 0.0.0.0 0.0.0.0 ]

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

```
admin> list ..
```

Location: IP-Global

See Also: Enabled, GMT-Offset, Host

#### Soft-IP-Interface-Addr

Description: Specifies an IP address that is not associated with a physical interface.

A soft interface is just like any other interface on the MAX TNT, except that it is never down. In general, the soft IP address is used for packets destined for the MAX TNT. You can specify the soft interface address as the system IP address, in which case it becomes the source address for the traffic generated by the MAX TNT.

**Usage:** Specify an IP address in dotted decimal notation. The default is 0.0.0.0. The address you specify for the soft interface has the same requirements as an address assigned to a physical interface. The address is advertised by routing protocols as a host route with a mask of 32, using the loopback interface.

#### Example: set soft-ip-interface-addr=10.1.2.3

**Dependencies:** Other hosts on the network must be able to reach the address you assign as the soft interface address, so you must either enable routing protocols (RIP, OSPF) or configure static routes in routers one hop away from the MAX TNT. To verify that other hosts in your network have a route to the soft address, use Ping and Traceroute from the other hosts to the MAX TNT.

Location: IP-Global

See Also: OSPF, RIP, RIP-Mode, System-IP-Addr

#### Software-Level

Description: Indicates the software-version level of the shelf-controller code.

Usage: The Software-Level setting is read only.

Example: software-level=H

**Location:** Base, Slot-Info {shelf-*N* slot-*N N*}

See Also: Software-Revision, Software-Version

## Software-Revision

Description: Indicates the software revision number of the MAX TNT unit.

Usage: The Software-Revision setting is read only.

Example: software-revision=1

Location: Base, Slot-Info {shelf-*N* slot-*N N*}

See Also: Software-Level, Software-Version

#### Software-Version

**Description:** Indicates the software version of the MAX TNT unit.

Usage: The Software-Version setting is read only.

Example: software-version=1.0

**Dependencies:** You can also use the Version command to view the current system software version.

Location: Base, Slot-Info {shelf-*N* slot-*N N*}

See Also: Software-Level, Software-Revision

#### Source-Address

**Description:** Specifies a source IP address that the MAX TNT compares to a packet's source IP address (after applying the mask specified by Source-Address-Mask).

**Usage:** Specify an IP address in dotted decimal notation. The default is 0.0.0, which matches all packets.

Example: set source-address=10.62.201.56

Dependencies: Source-Address applies only if Type=IP-Filter.

**Location:** Filter *filter-name* > Input-Filters > IP-Filter, Filter *filter-name* > Output-Filters > IP-Filter

See Also: Input-Filters, IP-Filter, Output-Filters, Source-Address-Mask

#### Source-Address-Mask

**Description:** Specifies a mask to apply to the Source-Address value before comparing the value to the source address in a packet. You can use the Source-Address-Mask value to hide the host portion of an address, or its host and subnet portion.

After the mask and address are both translated into binary format, the MAX TNT applies the mask to the address using a logical AND. The mask hides the portion of the address that appears behind each binary 0 (zero) in the mask.

**Usage:** Specify a mask of ones and zeros in dotted decimal notation. The default is 0.0.0.0, which masks all bits. A mask of all ones (255.255.255.255) masks no bits, and specifies the full source address of a single host.

Example: set source-address-mask=255.255.255.0

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Dependencies: Source-Address-Mask applies only if Type=Filter.

**Location:** Filter *filter-name* > Input-Filters > IP-Filter, Filter *filter-name* > Output-Filters > IP-Filter

See Also: Input-Filters, IP-Filter, Output-Filters, Source-Address

## Source-Port

**Description:** Specifies a value to compare with the source port in a packet.

Usage: Specify a number from 0 to 65535. The default is 0 (zero), which matches any port.

Example: set source-port=25

Dependencies: Consider the following:

- Source-Port applies only if Type=IP-Filter.
- Only TCP and UDP packets contain source ports.
- The Src-Port-Cmp setting specifies the type of comparison the MAX TNT makes.

**Location:** Filter *filter-name* > Input-Filters > IP-Filter, Filter *filter-name* > Output-Filters > IP-Filter

See Also: Input-Filters, IP-Filter, Output-Filters, Src-Port-Cmp

#### Src-Port-Cmp

**Description:** Specifies the type of comparison to use when comparing the value of Source-Port to the source port in a packet.

Usage: Specify one of the following values:

- None (the default) specifies that the MAX TNT does not compare the packet's source port number to the Source-Port value.
- Less specifies that port numbers with a value less than the value specified by Source-Port match the filter.
- Eql specifies that port numbers equal to the value specified by Source-Port match the filter.
- Gtr specifies that port numbers with a value greater than the value specified by Source-Port match the filter.
- Neq specifies that port numbers not equal to the value specified by Source-Port match the filter.

Example: set src-port-cmp=less

**Dependencies:** For Src-Port-Cmp to apply, you must set Type=IP-Filter. In addition, only TCP and UDP packets contain source ports.

**Location:** Filter *filter-name* > Input-Filters > IP-Filter, Filter *filter-name* > Output-Filters > IP-Filter

See Also: Input-Filters, IP-Filter, Output-Filters, Source-Port

## Start-With-Menus

**Description:** Determines whether the terminal server presents a menu interface for an interactive user initiating a connection.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the terminal server starts user logins in menu mode.
- No specifies that the terminal server starts user logins in command mode.

#### Example: set start-with-menus=yes

Dependencies: If terminal services are disabled, Start-With-Menus does not apply.

**Location:** Terminal-Server > Menu-Mode-Options

See Also: Menu-Mode-Options

#### Static-Pref

Description: Specifies the default preference given to static IP routes.

When choosing the routes to put in the routing table, the router first compares their preference values, preferring the lower number. If the preference values are equal, the router compares the metric values, using the route with the lower metric.

**Usage:** Specify a number from 0 to 255. A value of 255 means "Don't use this route." The following are the default preferences for different types of routes:

- 0 (zero)—Connected routes
- 10—OSPF routes
- 30—Routes learned from ICMP redirects
- 100—Routes learned from RIP
- 100—Static routes

Example: set static-pref=50

Location: IP-Global

See Also: Down-Preference, OSPF-ASE-Pref, OSPF-Pref, Preference, RIP-Pref

## Station

**Description:** Specifies the name of the remote device that communicates across the WAN with the MAX TNT.

**Usage:** Specify the name of the remote station. You can enter up to 31 characters. The value you specify is case sensitive, and must exactly match the name of the remote device. If you are not sure about the exact name, contact the administrator of the remote network. The default is null.

Example: set station=brian-gw

**Dependencies:** The name you specify for Station is not necessarily a DNS host name. The MAX TNT does not use the Station name to obtain an IP address

Location: Connection station

See Also: Index, Name
#### Sub-Persistence

**Description:** Specifies the number of seconds that average line utilization (ALU) must persist below the Target-Utilization threshold before the MAX TNT subtracts bandwidth from the connection. When subtracting bandwidth, the MAX TNT removes the number of channels specified by Decrement-Channel-Count. However, it does not clear the base channel of the call, or cause the number of channels to fall below the Minimum-Channels value.

Usage: Specify an integer from 1 to 300. The default is 10.

Example: set sub-persistence=15

**Dependencies:** The Sub-Persistence setting has little effect when the Seconds-History value is high.

Location: Answer-Defaults > MPP-Answer, Connection station > MPP-Options

**See Also:** Add-Persistence, Bandwidth-Monitor-Direction, Base-Channel-Count, Decrement-Channel-Count, Dynamic-Algorithm, Increment-Channel-Count, Minimum-Channels, Maximum-Channels, MPP-Answer, MPP-Options, Seconds-History, Target-Utilization

## Summarize-RIP-Routes

**Description:** Specifies whether the MAX TNT summarizes RIP-v1 subnet information when advertising routes.

If the MAX TNT summarizes RIP routes, it advertises a route to all the subnets in a network of the same class. For example, it advertises the route to 200.5.8.13/28 (a class C address) as a route to 200.5.8.0. When the MAX TNT does not summarize information, it advertises each route in its routing table as it appears. For the route to 200.5.8.13/28, the MAX TNT advertises a route to 200.5.8.13.

Usage: Specify Yes or No. The default is Yes.

- Yes specifies that the MAX TNT summarizes RIP-v1 subnet information.
- No specifies that the MAX TNT advertises each route as it appears in the routing table.

#### Example: set summarize-rip-routes=no

**Dependencies:** The Summarize-RIP-Routes setting is not applicable if RIP-v2 is in use or if RIP is turned off.

Location: IP-Global

See Also: RIP, RIP-Mode, RIP-Policy

## Swan

Description: A profile that contains line-configuration settings for the Serial WAN card.

Usage: To make Swan the working profile and list its contents:

```
admin> read swan {1 15 2}
SWAN/{ shelf-1 slot-15 2 } read
admin> list
name=1:15:2
physical-address*={ shelf-1 slot-15 2 }
enabled=no
line-config={ 0 0 static { any-shelf any-slot 0 } }
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> **write** SWAN/{ shelf-1 slot-15 2 } written

See Also: Enabled, Line-Config, Name, Physical-Address

## Swan-Stat

Description: A profile that displays information about the state of a Serial WAN line.

Usage: To make Swan-Stat the working profile and list its contents:

```
admin> read swan-stat {1 8 1}
SWAN-STAT/{ shelf-1 slot-8 1 } read
admin> list
physical-address*={ shelf-1 slot-8 1 }
line-state=disabled
error-count=0
```

See Also: Error-Count, Line-State, Physical-Address

#### Switch-Type

Description: Specifies the type of network switch that provides ISDN service.

Usage: For a PRI line, you can specify one of the following switch types:

- ATT-PRI specifies AT&T, the default in the U.S.
- NT1-PRI specifies Northern Telecom.
- GlobanD-PRI specifies Q.931W GloBanD.
- Japan-PRI specifies ISDN PRI in Japan.
- VN3-PRI specifies French VN3 ISDN PRI.
- OneTR6 specifies German 1TR6.
- Net3-PRI specifies Euro ISDN services in Belgium, the Netherlands, Switzerland, Sweden, Denmark, and Singapore.
- Austral-PRI specifies PRI service in Australia.
- NAT-ISDN-2-PRI specifies National IDSN-2.

E1 lines support the following additional DPNSS and DASS-2 switch types:

- ISDX-DPNSS
- ISLX-DPNSS
- Mercury-DPNSS
- DASS2 (U.K. only)
- Switch-CAS (CAS, used with R2 signaling in New Zealand)

#### Example: set switch-type=nt1-pri

Dependencies: The Switch-Type setting is required for ISDN NFAS signaling.

Location: T1 {shelf-*N* slot-*N N*} > Line-Interface, E1 {shelf-*N* slot-*N N*} > Line-Interface

See Also: Line-Interface, Signaling-Mode

#### Switched-Call-Type

**Description:** Specifies the type of bearer-channel capability the MAX TNT sets up for each switched call in a session.

Usage: Specify one of the following values:

- Voice specifies that the MAX TNT sets up a voice call, even though the MAX TNT will transmit data over the channel. The Voice setting assumes that only 56 kbps is available.
- 56k-Restricted (the default) specifies that the MAX TNT sets up a data call with an explicit request for 56-kbps restricted data transfer. It guarantees that transmitted data meets the density restrictions of D4-framed TI lines.
- 56k-Clear specifies that the MAX TNT sets up a data call that uses 56-kbps of the data channel. 56k-Clear is a common setting for T1 PRI lines.
- 64k-Restricted specifies that the MAX TNT sets up a data call with an explicit request for 64-kbps restricted data transfer.
- 64k-Clear specifies that the MAX TNT sets up a data call that uses the full 64-kbps bandwidth of the data channel.
- 384k-Restricted specifies that the MAX TNT sets up a data call that connects to Multi-Rate or GlobanD data services at 384 kbps.
- 384k-Clear specifies that the MAX TNT sets up a data call that connects to the Switched-384 data service. This AT&T data service does not require Multi-Rate or GlobanD.
- DWS-384-Clear specifies a 384-kbps call coded as Multi-Rate, not H0.
- 1536k-Clear specifies that the MAX TNT sets up a data call that connects to the Switched-1536 data service at 1536 kbps. NFAS signaling is required for the Switched-1536 data service. (Because all 24 channels of the T1 PRI line carry user data, the D channel must be on another line.)
- 1536k-Restricted specifies the same service as 1536k-Clear, but with a request for restricted data transfer.
- The settings 128k-Clear to 1472k-Clear (in multiples of 64) specify Multi-Rate bit rates.
- Modem specifies that the MAX TNT sets up the call as a voice call. When the call is up, the MAX TNT routes it to a digital modem.

#### Example: set switched-call-type=56k-restricted

Dependencies: To ensure data integrity:

- Use only digital end-to-end connectivity. No analog signals should be present anywhere in the link.
- Make sure that the phone company is not using any intervening loss plans to economize on voice calls.
- Do not use echo cancellation. Analog lines can echo, and the technology to take out the echoes can also scramble data in the link.
- Do not make any modifications that can change the data in the link.

If a nailed-up connection is in use, Switched-Call-Type does not apply.

Location: Frame-Relay fr-name

See Also: Data-Service

#### Switched-Enabled

**Description:** Indicates whether the unit can make switched calls.

**Usage:** The Switched-Enabled setting is read only. Yes indicates that the unit can make switched calls. No indicates that the unit can use only nailed-up links.

Example: switched-enabled=yes

Location: Base

**See Also:** AIM-Enabled, Countries-Enabled, Data-Call-Enabled, D-Channel-Enabled, Domestic-Enabled, Frame-Relay-Enabled, MAXLink-Client-Enabled, Modem-Dialout-Enabled, Multi-Rate-Enabled, R2-Signaling-Enabled

#### Syslog-Enabled

Description: Enables or disables forwarding of log messages to the UNIX Syslog server.

Usage: Specify Yes or No. The default is No.

- Yes enables Syslog updating.
- No disables Syslog updating.

Example: set syslog-enabled=yes

Location: Log

See Also: Facility, Host

#### System

Description: A profile that contains system-wide settings for call management.

Usage: To make System the working profile and list its contents:

```
admin> read sys
SYSTEM read
admin> list
name=test-227
system-rmt-mgmt=yes
use-trunk-groups=yes
call-routing-sort-method=item-first
idle-logout=0
parallel-dialing=2
single-file-incoming=yes
analog-encoding=u-law
sessionid-base=0
shelf-controller-type=standalone
master-shelf-controller=1
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> **write** SYSTEM written

**See Also:** Analog-Encoding, Call-Routing-Sort-Method, Idle-Logout, Master-Shelf-Controller, Name, Parallel-Dialing, SessionID-Base, Shelf-Controller-Type, Single-File-Incoming, System-Rmt-Mgmt, Use-Trunk-Groups

#### System-IP-Addr

**Description:** Designates the source address for IP traffic originating from the MAX TNT. By default, the IP address assigned to the shelf-controller Ethernet interface is considered the system address, and the source address for outgoing IP traffic is address of the interface on which the MAX TNT transmits a packet.

The primary purpose of System-IP-Addr is access control. For example, most RADIUS servers keep a database of known NAS clients and their authentication keys. If you do not specify System-IP-Addr, you should include a complete list of all the system's interface addresses in the database. If you specify a value for System-IP-Addr, your setting controls which address the MAX TNT uses for all RADIUS request packets.

Usage: Specify an IP address. The default is 0.0.0.0.

Example: set system-ip-addr=10.2.3.4

**Dependencies:** If the System-IP-Addr becomes unreachable because of a topology change in the network, you can still use Telnet to reach any of the unit's interface addresses (subject to packet filtering throughout the network).

The following algorithm determines the source address of packets originating from the MAX TNT:

- 1. The source address of IP-routing protocol packets (RIP and OSPF) is always the local address of the transmitting interface.
- 2. For incoming Telnet sessions, the source address of transmitted packets is the destination address of the originating TCP SYN packet.
- 3. If the IP-Global profile setting for System-IP-Addr is non-zero, all other transmitted packets have System-IP-Addr as the source address.
- 4. The source address of all other transmitted packets is the local address of the transmitting interfaces.

Protocols that follow this algorithm include:

- TCP: Defender, PPTP, Rlogin, TACACS+, Telnet
- UDP: Ascend Password Protocol (APP), Ascend Tunnel Management Protocol (ATMP), DNS, MAX TNT Stacking Protocol, RADIUS accounting, RADIUS authentication, SECURID, SNMP, Syslog, TFTP, Traceroute, Virtual Tunnel Protocol (VTP)

Location: IP-Global

See Also: IP-Address, Local-Address, Remote-Address, Soft-IP-Interface-Addr

#### System-Password

Description: Specifies a password for access to the terminal server.

**Usage:** Specify a password of up to 20 characters. The password is case sensitive. The default is null.

Example: set system-password=Ascend

**Dependencies:** If terminal services are disabled, System-Password does not apply. If Security-Mode=None, the terminal server does not require a password.

Location: Terminal-Server > Terminal-Mode-Configuration

**See Also:** Aux-Send-Password, Password, Recv-Password, Security-Mode, Send-Password, Telnet-Password, Terminal-Mode-Configuration

#### System-Rmt-Mgmt

**Description:** Enables or disables remote management across multichannel calls. In remote management, the MAX TNT uses bandwidth between sites over the management subchannel established by the AIM protocol.

Usage: Specify Yes or No. The default is Yes.

- Yes allows remote management of the MAX TNT.
- No prevents remote management of the MAX TNT.

Example: set system-rmt-mgmt=yes

Location: System

See Also: Remote-Configuration

# Т

**T1** 

Description: A profile that contains configuration settings for a T1 line and its channels.

**Usage:** To make T1 the working profile and list its contents:

```
admin> read t1 {1 15 2}
T1/{ shelf-1 slot-15 2 } read
admin> list
name=trunk-1
physical-address*={ shelf-1 slot-15 2 }
line-interface={ no d4 ami eligible middle-priority inband wink-start
+
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> write
T1/{ shelf-1 slot-15 2 } written

See Also: Line-Interface, Name, Physical-Address

## T1-Stat

Description: A profile that displays information about the state of a T1 line and its channels.

Usage: To make T1-Stat the working profile and list its contents:

See Also: AIS-Receive, BER-Receive, Carrier-Established, Channel-State, Error-Count, Line-State, Loss-Of-Carrier, Loss-Of-Sync, Network-Loopback, Physical-Address, Yellow-Receive

## Т3

Description: A profile that contains configuration settings for a DS3 line.

Usage: To make T3 the working profile and list its contents:

```
admin> read t3 {1 15 2}
T3/{ shelf-1 slot-15 2 } read
admin> list
name=trunk-3
physical-address*={ shelf-1 slot-15 2 }
enabled=no
frame-type=m13
line-length=0-255
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> write
T3/{ shelf-1 slot-15 2 } written

See Also: Enabled, Frame-Type, Line-Length, Name, Physical-Address

## T302-Timer

Description: Specifies the timer used to pause for additional information from the switch.

**Usage:** Specify an integer from 100 to 30000. The value you specify represents thousandths of a second. When a subscriber dials in, the MAX TNT receives a layer 3 SETUP message from the switch. Depending on the contents of that message, the MAX TNT can use the T302 timer to pause for additional information.

Example: set t302-timer=6000

**Dependencies:** If the SETUP message contains Sending Completion IE, the MAX TNT does not use the T302-Timer.

Location: E1 {shelf-*N* slot-*N N*}

See Also: T-Online, T-Online-Offset, T-Online-Type

#### T391-Val

Description: Specifies the Link Integrity Verification polling timer.

**Usage:** Specify an integer from 5 to 30 (seconds). The value you enter should be less than the value of T392-Val. The default is 10.

Example: set t391-val=15

Dependencies: If FR-Type-Val=DCE, T391-Val does not apply.

Location: Frame-Relay fr-name

See Also: FR-Type-Val, T392-Val

#### T392-Val

**Description:** Specifies the time for Status Enquiry messages. The MAX TNT records an error if it does not receive a Status Enquiry within T392 seconds.

Usage: Specify an integer from 5 to 30. The default is 15.

Example: set t392-val=20

Dependencies: If FR-Type-Val is DTE, T392-Val does not apply.

Location: Frame-Relay fr-name

See Also: FR-Type-Val, T391-Val

#### T3-Stat

**Description:** A profile that displays information about the state of a DS3 line and its individual multiplexed DS2 lines.

Usage: To make T3-Stat the working profile and list its contents:

```
admin> read t3-stat {1 8 1}
T3-STAT/{ shelf-1 slot-8 1 } read
admin> list
physical-address*={ shelf-1 slot-8 1 }
line-state=active
ds2-state=[active active active active active active]
```

See Also: DS2-State, Line-State, Physical-Address

#### **Tac-Auth-Client**

**Description:** A subprofile that defines how the MAX TNT interacts as a client to TACACS authentication servers.

Usage: When External-Auth is the working profile:

```
admin> list tac-auth-client
auth-server-1=0.0.0.0
auth-server-2=0.0.0.0
auth-server-3=0.0.0.0
auth-port=0
auth-src-port=0
auth-key=""
auth-timeout=0
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: External-Auth

See Also: Auth-Key, Auth-Port, Auth-Server-N (N=1-3), Auth-Src-Port, Auth-Timeout

## TacPlus-Acct-Client

**Description:** A subprofile that defines how the MAX TNT interacts as a client to TACACS+ accounting servers.

Usage: When External-Auth is the working profile:

```
admin> list tacplus-acct-client
acct-server-1=0.0.0.0
acct-server-2=0.0.0.0
acct-server-3=0.0.0.0
acct-port=0
acct-src-port=0
acct-key=""
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: External-Auth

See Also: Acct-Key, Acct-Port, Acct-Server-N (N=1-3), Acct-Src-Port

#### **TacPlus-Auth-Client**

**Description:** A subprofile that defines how the MAX TNT interacts as a client to TACACS+ authentication servers.

Usage: When External-Auth is the working profile:

```
admin> list tacplus-auth-client
auth-server-1=0.0.0.0
auth-server-2=0.0.0.0
auth-server-3=0.0.0.0
auth-port=0
auth-src-port=0
auth-key=""
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

```
admin> list ..
```

Location: External-Auth

See Also: Auth-Key, Auth-Port, Auth-Server-N (N=1-3), Auth-Src-Port

#### **Target-Utilization**

**Description:** Specifies a percentage of line utilization to use as a threshold for determining when to add or subtract bandwidth. The device adds bandwidth when average line utilization (ALU) exceeds the Target-Utilization value, and subtracts bandwidth when it falls below that value.

Usage: Specify a number from 0 to 100. The default is 70.

Example: set target-utilization=70

Location: Answer-Defaults > MPP-Answer, Connection station > MP-Options

**See Also:** Add-Persistence, Bandwidth-Monitor-Direction, Base-Channel-Count, Decrement-Channel-Count, Dynamic-Algorithm, Increment-Channel-Count, Minimum-Channels, Maximum-Channels, MPP-Answer, MPP-Options, Seconds-History, Sub-Persistence

TCP

Description: Enables or disables the TCP command from the terminal-server interface.

Usage: Specify Yes or No. The default is No.

- Yes enables a user to initiate a TCP session from the terminal server.
- No prevents a user from initiating a TCP session from the terminal server.

#### Example: set tcp=yes

Dependencies: If terminal services are disabled, TCP does not apply.

Location: Terminal-Server > Terminal-Mode-Configuration

See Also: Ping, PPP, Rlogin, SLIP, Telnet, Terminal-Mode-Configuration, Traceroute

### **TCP-Clear-Answer**

Description: A subprofile containing default settings for TCP-Clear connections.

Usage: When Answer-Defaults is the working profile:

admin> list tcp-clear-answer

enabled=yes

You can then use the Set command to modify the setting in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Answer-Defaults

See Also: Enabled

#### **TCP-Clear-Options**

Description: A subprofile with default settings for TCP-Clear connections.

Usage: When Connection is the working profile:

admin> **list tcp** host="" port=0

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

**Dependencies:** For TCP-Clear-Options to apply, you must set Enabled=Yes in the TCP-Clear-Answer subprofile.

Location: Connection station

See Also: Host, Port, TCP-Clear-Answer

## TCP-Estab

Description: Specifies whether a filter should match only established TCP connections.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the filter matches only packets that are part of established TCP connections.
- No specifies that the filter can match packets that are not part of an established TCP connection.

Example: set tcp-estab=yes

**Dependencies:** TCP-Estab applies only if Protocol=6 (TCP).

**Location:** Filter *filter-name* > Input-Filters > IP-Filter, Filter *filter-name* > Output-Filters > IP-Filter

See Also: Input-Filters, IP-Filter, Output-Filters, Protocol

## **TCP-Timeout**

**Description:** Specifies a timeout period for Telnet or other TCP connections that use the DNS-List-Attempt feature

DNS-List-Attempt has a default timeout of 170 seconds. The MAX TNT attempts to connect to the first host on the list for that length of time. Some client software times out in less than 170 seconds, which causes them to drop the connection before attempting the second host if the first host does not respond. In that case, you can set TCP-Timeout to a smaller timeout period, such as 30 or 60 seconds.

Usage: Specify an integer indicating the number of seconds for a TCP timeout.

Example: set tcp-timeout=30

Location: IP-Global

See Also: DNS-List-Attempt

### **Telco-Options**

Description: A subprofile that enables you to set telephone-company options for a connection.

Usage: When Connection is the working profile:

```
admin> list telco-options
answer-originate=ans-and-orig
callback=no
call-type=nailed-mode-off
nailed-groups=1
ft1-caller=no
force-56kbps=no
data-service=56k-restricted
call-by-call=0
billing-number=""
transit-number=""
expect-callback=no
dialout-allowed=no
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Connection station

See Also: Answer-Originate, Billing-Number, Callback, Call-By-Call, Call-Type, Data-Service, Dialout-Allowed, Expect-Callback, Force-56kbps, FT1-Caller, Nailed-Groups, Transit-Number

#### Telnet

Description: Enables or disables the Telnet command from the terminal-server interface.

Usage: Specify Yes or No. The default is No.

- Yes specifies that operators can invoke Telnet sessions from the terminal-server interface.
- No disables the use of Telnet in the terminal server.

Example: set telnet=yes

Dependencies: If terminal services are disabled, Telnet does not apply.

Location: Terminal-Server > Terminal-Mode-Configuration > Telnet-Options

See Also: Ping, PPP, Rlogin, SLIP, TCP, Telnet-Options, Terminal-Mode-Configuration, Traceroute

#### **Telnet-Host-Auth**

**Description:** Determines whether immediate Telnet sessions require local authentication or authentication only by the Telnet host.

Usage: Specify Yes or No. The default is No.

- Yes specifies that the session requires authentication only by the Telnet host.
- No specifies that the session must be locally authenticated before undergoing authentication by the Telnet host.

Example: set telnet-host-auth=yes

Dependencies: If terminal services are disabled, Telnet-Host-Auth does not apply.

Location: Terminal-Server > Immediate-Mode-Options

See Also: Immediate-Mode-Options, Telnet

## Telnet-Mode

Description: Specifies the default Telnet mode.

Usage: Specify one of the following values:

- ASCII (the default) specifies standard 7-bit mode. In 7-bit mode, bit 8 is set to 0 (zero).
- Binary specifies that the MAX TNT attempts to negotiate the Telnet 8-bit binary option with the server at the remote end. You can run X -Modem and other 8-bit file transfer protocols using this mode.
- Transparent specifies that you can send and receive binary files without having to be in Binary mode. You can run the same file transfer protocols available in Binary mode

#### Example: set telnet-mode=ascii

Dependencies: Consider the following:

- In 8-bit binary mode, the Telnet escape sequence does not operate. The Telnet session can close only if one end of the connection quits the session. If you are a local user not connected through a digital modem, the remote-end user must quit.
- A user can override the Binary setting on the Telnet command line.
- If terminal services are disabled, Telnet-Mode does not apply.

Location: Terminal-Server > Terminal-Mode-Configuration > Telnet-Options

See Also: Telnet, Telnet-Options, Terminal-Mode-Configuration

#### **Telnet-Options**

**Description:** A nested subprofile that contains terminal-server configuration options for interactive users.

Usage: When Terminal-Server is the working profile:

```
admin> list terminal terminal-mode-configuration telnet
telnet=no
telnet-mode=ascii
auto-telnet=no
local-echo=no
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Terminal-Server

See Also: Auto-Telnet, Local-Echo, Telnet, Telnet-Mode

#### **Telnet-Password**

**Description:** Specifies the password users must enter to access the MAX TNT unit via Telnet. If you specify a password, a user is allowed three tries of 60 seconds each to enter the correct password.

**Usage:** Specify a password of up to 20 characters. The default is null. If you accept the default, the MAX TNT does not prompt a user for a password.

Example: set telnet-password=Ascend

Location: IP-Global

See Also: Auto-Telnet, Telnet, Telnet-Host-Auth

#### **Temporary-Route**

**Description:** Specifies that the MAX TNT adds the route to the routing table only when the link is up. Temporary-Route is especially useful for nailed-up IP-routing connections.

Usage: Specify Yes or No. The default is No.

- Yes excludes a route from the routing table when its connection is down.
- No includes the route in the routing table even if its connection is down.

Example: set temporary-route=no

Location: Connection *station* > IP-Options

See Also: IP-Options, IP-Routing-Enabled, Private-Route, RIP

#### **Terminal-Mode-Configuration**

**Description:** A subprofile containing terminal-server configuration options for interactive users.

Usage: When Terminal-Server is the working profile:

```
admin> list terminal
silent-mode=no
clear-screen=yes
system-password=""
banner="** Ascend Terminal Server **"
login-prompt="Login: "
password-prompt="Password: "
third-login-prompt=""
third-prompt-sequence=last
prompt="ascend% "
terminal-type=vt100
clear-call=no
buffer-chars=yes
ping=no
traceroute=no
tcp=no
rlogin=no
telnet-options={ no ascii no no }
ip-add-msg="IP address is "
prompt-format=no
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

Location: Terminal-Server

**See Also:** Banner, Buffer-Chars, Clear-Call, Clear-Screen, IP-Add-Msg, Login-Prompt, Password-Prompt, Ping, Prompt, Prompt-Format, Rlogin, Silent-Mode, System-Password, TCP, Telnet-Options, Terminal-Type, Third-Login-Prompt, Traceroute

#### **Terminal-Server**

Description: A profile that enables you to configure terminal-server features.

Usage: To make Terminal-Server the working profile and list its contents:

```
admin> read term
TERMINAL-SERVER read
admin> list
enabled=no
security-mode=none
modem-configuration={ will-v42 33600-max-baud -10-db-mdm-trn-level no+
terminal-mode-configuration={ no yes "" "** Ascend Terminal Server+
immediate-mode-options={ none no "" 0 }
menu-mode-options={ none no "" 0 }
menu-mode-configuration={ no no no "" 0.0.0.0 "" 0.0.0.0 "" 0.0.0.0 "" 0.0.1.+
ppp-mode-configuration={ no 5 no session-ppp }
slip-mode-configuration={ no no }
dialout-configuration={ no no 5000 }
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> **write** TERMINAL-SERVER written

**See Also:** Dialout-Configuration, Enabled, Immediate-Mode-Options, Menu-Mode-Options, Modem-Configuration, PPP-Mode-Configuration, Security-Mode, SLIP-Mode-Configuration, Terminal-Mode-Configuration,

#### **Terminal-Type**

Description: Specifies the default terminal type for Telnet and Rlogin sessions.

Usage: Specify the a terminal type. You can enter up to 15 characters. The default is vt100.

Example: set terminal-type=vt100

Dependencies: If terminal services are disabled, Terminal-Type does not apply.

Location: Terminal-Server > Terminal-Mode-Configuration

See Also: Terminal-Mode-Configuration

### **Term-Rate**

**Description:** Specifies the bit rate of a MAX TNT serial port. When you modify the bit rate of a serial port, you may also need to change the data-rate setting of the terminal accessing that port.

Usage: Specify one of the following values:

- 57600
- 38400
- 19200
- 9600 (the default)
- 4800
- 2400

Example: set term-rate=9600

Location: Serial {shelf-*N* slot-*N N*}

See Also: Auto-Logout, Flow-Control, Physical-Address, User-Profile

## Text-N (N=1-4)

**Description:** Specifies text that the MAX TNT displays in the terminal-server menu for the Telnet host specified by Host-*N*.

Usage: Specify a text string describing the corresponding Telnet host. The default is null.

Example: set text-1=database-server

**Dependencies:** When terminal services are disabled, Text-*N* does not apply. In addition, Text-*N* is ignored if Remote-Configuration is set to Yes.

Location: Terminal-Server > Menu-Mode-Options

See Also: Menu-Mode-Options, Remote-Configuration

#### **Third-Login-Prompt**

Description: Specifies an optional third prompt for a terminal-server login.

If authentication occurs through a local Connection profile and not through the RADIUS server, the Third-Login-Prompt is not displayed. If the connection is RADIUS-authenticated, the information that the user enters at the third prompt (up to 80 characters) is passed to the RADIUS server.

**Usage:** Specify up to 20 characters. The default is null, which specifies that no third prompt appears.

#### Example: set third-login-prompt=Password2>>

The terminal server displays the following prompts:

Login: Password: Password2>> **Dependencies:** If terminal services are disabled, or if Auth-Type is set to a value other than RADIUS or RADIUS-Logout, Third-Login-Prompt does not apply.

Location: Terminal-Server > Terminal-Mode-Configuration

**See Also:** Auth-Type, Login-Prompt, Password-Prompt, Prompt, Prompt-Format, Terminal-Mode-Configuration, Third-Prompt-Sequence

#### **Third-Party**

**Description:** Enables or disables OSPF third-party routing for a static route. When Third-Party=Yes, the Gateway-Address value is the third-party router for the route.

Usage: Specify Yes or No. The default is No.

- Yes enables third-party routing for the OSPF router.
- No disables third-party routing for the OSPF router.

Example: set third-party=yes

Location: IP-Route name

See Also: Gateway-Address

#### Third-Prompt-Sequence

**Description:** Specifies where the Third-Login-Prompt should appear in the login sequence—before or after the Login-Prompt and Password-Prompt.

Usage: You can specify First, Middle, or Last. The default is Last.

Example: set third-prompt-sequence=last

Location: Terminal-Server > Terminal-Mode-Configuration

**See Also:** Login-Prompt, Password-Prompt, Prompt, Prompt-Format, Terminal-Mode-Configuration, Third-Login-Prompt

## Ticks

**Description:** Specifies the distance to the destination network, in IBM PC clock ticks (one-eighteenth of a second). The Ticks setting is for round-trip timer calculation and for determining the nearest server of a given type.

Usage: Enter an integer. The default is 12.

Example: set ticks=6

Location: IPX-Route name

**See Also:** Active-Route, Dest-Network, Hops, Name, Profile-Name, Server-Node, Server-Socket, Server-Type

#### Time

Description: A subprofile that specifies the current hour, minute, and second.

Usage: When Timedate is the working profile:

```
admin> list time
hour=12
minute=37
second=33
```

You can then use the Set command to modify the settings in the subprofile.

admin> set hour=16

Example: set time hour=16

**Dependencies:** You can also use the Date command to set the current hour, minute, and second.

Location: Timedate

See Also: Date

### Timedate

Description: A profile that shows the current system time and date.

Usage: To make Timedate the working profile and list its contents:

```
admin> read time
TIMEDATE read
```

```
admin> list
time={ 12 37 33 }
date={ Friday October 18 1996 }
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> **write** TIMEDATE written

See Also: Date, Time

#### **Toggle-Screen**

**Description:** Specifies whether an interactive user can switch between terminal-server menu mode and command-mode.

Usage: Specify Yes or No. The default is Yes.

- Yes specifies that terminal-server users can switch between command mode and menu mode.
- No specifies that users have access only to the screen you configure to come up when a user logs in.

Example: set toggle-screen=no

Dependencies: If terminal services are disabled, Toggle-Screen does not apply.

Location: Terminal-Server > Menu-Mode-Options

See Also: Menu-Mode-Options, Start-With-Menus

## **T-Online**

Description: Enables or disables T-Online switching.

Usage: Specify Yes or No. The default is No.

- Yes specifies that calls are switched from the public network to T-Online based on a user-defined match. The match between the incoming call and a RADIUS entry can be successful using one of the following elements:
  - incoming phone number and subaddress
  - incoming phone number only (no incoming subaddress)
  - incoming subaddress only (no incoming phone number)
  - no incoming call phone number or subaddress
- No specifies that T-Online switching is disabled.

Example: set t-online=yes

Location: System

See Also: T302-Timer, T-Online-Offset, T-Online-Type,

#### **T-Online-Offset**

Description: Specifies the offset to the TE line number.

The offset you specify is used to form the TE-NT pair of E1 PRI lines. PRI-to-PRI switching requires two E1 PRI lines. A call is received on one line (the TE line, which communicates with the carrier switch) and internally switched to another (the NT line, which communicates with the ZGR server). The MAX TNT determines which line to use for the NT line by applying the offset to the TE line number.

**Usage:** Specify an integer from 1 to 4. For example, if T-Online-Offset is set to 1 and the MAX TNT receives a call on E1 PRI line 5, the NT line is line 6.

Example: set t-online-offset=1

Dependencies: If T-Online=No, T-Online-Offset does not apply.

Location: System

See Also: T302-Timer, T-Online, T-Online-Type

#### **T-Online-Type**

Description: Specifies the E1 PRI line's switching function.

Usage: You can specify TE or NT.

- TE specifies that the line communicates with the carrier switch.
- NT specifies that the line communicates with the ZGR server.

#### Example: set t-online-type=TE

Dependencies: If T-Online=No, T-Online-Type does not apply.

Location: E1 {shelf-*N* slot-*N N*}

See Also: T302-Timer, T-Online, T-Online-Offset

## **Top-Status**

Description: Specifies the default content of the upper-right portion of the status window.

Usage: Specify one of the following values:

- General-Info (the default) specifies that the MAX TNT displays general information and statistics for the system.
- Log-Window specifies that the MAX TNT displays saved system-event log entries.
- Line-Status specifies that the MAX TNT displays the status of system telephony interfaces.

Example: set top-status=general-info

Location: User name

See Also: User

## Traceroute

**Description:** Enables or disables the use of the Traceroute command in the terminal-server interface.

Usage: Specify Yes or No. The default is No.

- Yes specifies that terminal-server users can use the Traceroute command.
- No disables the Traceroute command.

Example: set traceroute=yes

Dependencies: If terminal services are disabled, Traceroute does not apply.

Location: Terminal-Server > Terminal-Mode-Configuration

**See Also:** Ping, PPP, Rlogin, SLIP, TCP, Telnet, Telnet-Options, Terminal-Mode-Configuration

#### **Transit-Delay**

**Description:** Specifies the estimated number of seconds it takes to transmit a Link State Update (LSU) packet over the interface. Before transmission, Link State Advertisements (LSAs) contained in the LSU packet have their ages incremented by the amount you specify.

**Usage:** Specify a number greater than 0 (zero). The value you specify should take into account transmission and propagation delays. The default is 1.

#### Example: set transit-delay=5

**Location:** IP-Interface {{shelf-*N* slot-*N N*} *N*} > OSPF, Connection *station* > IP-Options > OSPF-Options

See Also: IP-Options, OSPF, OSPF-Options, Retransmit-Interval

## Transit-Number

Description: Specifies an Interexchange Carrier (IEC) for long-distance PRI calls.

Usage: Specify one of the following dialing prefixes:

- 288 (AT&T)
- 222 (MCI)
- 333 (Sprint)

The default is null. If you accept the default, the MAX TNT uses any available IEC for long-distance calls.

Example: set transit-number=222

**Dependencies:** If a nailed-up Frame-Relay datalink connection is in use, Transit-Number does not apply.

Location: Connection station > Telco-Options, Frame-Relay fr-name

See Also: Telco-Options

#### **Transmit-Power**

Description: Indicates the transmission power level in decibels.

Usage: The Transmit-Power setting is read only.

**Location:** ADSL-Cap-Statistics {shelf-*N* slot-*N N*}

See Also: Connection-SQ, HDLC-RX-CRC-Error-Cnt, Line-Quality, Line-Up-Timer, Physical-Address, RS-Corrected-Errors, RS-Errors, RX-Attenuation, RX-Signal-Present, Self-Test, Up-Down-Cntr

#### Trap

Description: A profile containing settings that determine how the MAX TNT traps events.

A trap is a mechanism in SNMP for reporting system change in real time. To report system change, the MAX TNT sends a traps-PDU (Protocol Data Unit) to the SNMP manager. For the most up-to-date information on events, see the Ascend Enterprise MIB.

Usage: To make Trap the working profile and list its contents:

admin> read trap host-231 TRAP/host-231 read

admin> list
host-name\*=host-231
community-name=Ascend
host-address=10.2.3.4/24
alarm-enabled=yes
security-enabled=yes
port-enabled=no

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> write TRAP/host-231 written See Also: Alarm-Enabled, Community-Name, Host-Address, Host-Name, Port-Enabled, Security-Enabled

#### **Trunk-Group**

Description: Specifies a trunk group number.

- In a T1, E1, or Swan profile, Trunk-Group assigns a channel to a trunk group.
- In a Call-Route profile, Trunk-Group indicates "route calls received on this trunk group of channels to me (the address in the index field)."

**Usage:** Specify a trunk group number. In a T1 or E1 profile, the default is 9. In a Call-Route profile, the default is 0 (zero), which matches any trunk group number.

Example: set trunk-group=4

Dependencies: Use-Trunk-Groups must be set to Yes for Trunk-Group to have an effect.

**Location:** Call-Route {{{shelf-N slot-N N} N} N}, E1 {shelf-N slot-N N} > Line-Interface > Channel-Config N, Swan {shelf-N slot-N N} > Line-Config T1 {shelf-N slot-N N} > Line-Interface > Channel-Config N,

See Also: Call-Route, Channel-Config N, Line-Config, Use-Trunk-Groups

## **TS-Idle-Mode**

Description: Specifies when the MAX TNT resets the terminal-server idle-session timer.

Usage: Specify one of the following values:

- No-Idle (the default) disables the idle timer.
- Input-Only-Idle specifies that the MAX TNT resets the timer when an input character is received.
- Input-Output-Idle specifies that the MAX TNT resets the timer when either input or output characters are processed.

#### Example: set ts-idle-mode=input-only-idle

Location: Answer-Defaults > Session-Info, Connection station > Session-Options

See Also: Session-Info, Session-Options, TS-Idle-Timer

## **TS-Idle-Timer**

**Description:** Specifies the number of seconds a terminal-server session can remain idle before being terminated.

Usage: Specify a number from 0 to 65535. The default is 120.

Example: set ts-idle-timer=360

Dependencies: The TS-Idle-Timer setting has no effect if TS-Idle-Mode=No-Idle.

Location: Answer-Defaults > Session-Info, Connection *station* > Session-Options

See Also: Session-Info, Session-Options, TS-Idle-Mode

## Туре

**Description:** Specifies whether the current filter is a generic filter, an IP filter, or a route filter.

- A generic filter focuses on certain bytes or bits in a packet, and compares the contents of that location with a value defined in the filter. To use generic filters effectively, you need to know the contents of certain bytes in the packets you wish to filter.
- An IP filter focuses on known fields in IP packets, such as source or destination address, and protocol.
- Route filters can forward or drop packets based on the specified route.

Usage: Specify one of the following values:

- Generic-Filter (the default) specifies a generic filter.
- IP-Filter specifies an IP filter.
- Route-Filter specifies a route filter.

#### Example: set type=generic-filter

Location: Filter *filter-name* > Input-Filters, Filter *filter-name* > Output-Filters

See Also: Input-Filters, Output-Filters

## U

## **UDP-Cksum**

**Description:** Enables or disables the use of UDP checksums on the interface. If you enable UDP checksums, the MAX TNT generates a checksum whenever it sends out a UDP packet. It sends out UDP packets for queries and responses related to the following protocols:

- ATMP
- DNS
- ECHOSERV
- RADIUS
- RIP
- SNTP
- SYSLOG
- TACACS
- TFTP

Usage: Specify Yes or No. The default is Yes.

- Yes generates UDP checksums for queries and responses related to protocols that use UDP.
- No disables UDP checksums.

Example: set udp-cksum=yes

**Dependencies:** You may want to enable UDP-Cksum if data integrity is of the highest concern for your environment, and having redundant checks is important. This setting is also appropriate if your UDP-based servers are located on the remote side of a WAN link that is prone to errors.

Location: IP-Global

See Also: Protocol

## **Unit-Type**

Description: Indicates the operating mode of the RADSL or SDSL card.

Usage: The Unit-Type setting is read only. It can have one of the following values:

- COE (Central Office Equipment)
- CPE (Customer Premises Equipment)

Example: unit-type=coe

**Location:** ADSL-Cap-Status {shelf-*N* slot-*N N*}, SDSL-Status {shelf-*N* slot-*N N*}

See Also: Dev-Line-State, Down-Stream-Constellation, Down-Stream-Operational-Baud, Down-Stream-Rate, Hardware-Ver, IF-Group-Index, Major-Firmware-Ver, Minor-Firmware-Ver, Physical-Address, Up-Stream-Constellation, Up-Stream-Rate

## **Up-Down-Cntr**

**Description:** Indicates the number of times the link has gone from an Up state to a Down state since the card was last reset.

Usage: The Up-Down-Cntr setting is read only.

Example: up-down-cntr=0

**Location:** ADSL-Cap-Statistics {shelf-*N* slot-*N N*}, SDSL-Statistics {shelf-*N* slot-*N N*},

**See Also:** Far-End-db-Attenuation, Line-Quality, Line-Up-Timer, Physical-Address, RX-Signal-Present, Self-Test, Connection-SQ, HDLC-RX-CRC-Error-Cnt, RS-Corrected-Errors, RS-Errors, RX-Attenuation, Transmit-Power

#### **Up-Status**

**Description:** Indicates the status of a device.

Usage: The Up-Status setting is read only. It can have one of the following values:

- Idle-Up-Status indicates that the device is not currently in use.
- Reserved-Up-Status indicates that the device is not currently in use and should not be used until all idle devices of the same type are in use.
- Assigned-Up-Status indicates that the device is in use.

Example: up-status=idle-up-status

**Location:** Device-State {{shelf-*N* slot-*N* } *N*}

See Also: Device-Address, Device-State, Reqd-State

#### **Up-Stream-Constellation**

**Description:** Indicates the operational upstream constellation. A constellation is the number of points within the digital spectrum.

**Usage:** The Up-Stream-Constellation setting is read only. A value of 0 (zero) indicates that the upstream constellation is unknown. A value of 1 (one) indicates automatic.

Example: up-stream-constellation=0

**Location:** ADSL-Cap-Status {shelf-*N* slot-*N N*}

See Also: Dev-Line-State, Down-Stream-Constellation, Down-Stream-Operational-Baud, Down-Stream-Rate, Hardware-Ver, IF-Group-Index, Major-Firmware-Ver, Minor-Firmware-Ver, Physical-Address, Unit-Type, Up-Stream-Rate

#### **Up-Stream-Rate**

Description: Indicates the upstream data rate for the RADSL or SDSL interface.

**Usage:** The Up-Stream-Rate setting is read only. A value of 0 (zero) indicates that the data rate is unknown.

Example: up-stream-rate=0

**Dependencies:** RADSL and SDSL ensure maximum throughput for the particular condition of the line. The better the line quality, the higher the data rate.

Location: ADSL-Cap-Status {shelf-*N* slot-*N N*}, SDSL-Status {shelf-*N* slot-*N N*}

See Also: Dev-Line-State, Down-Stream-Constellation, Down-Stream-Operational-Baud, Down-Stream-Rate, Hardware-Ver, IF-Group-Index, Major-Firmware-Ver, Minor-Firmware-Ver, Physical-Address, Unit-Type, Up-Stream-Constellation

#### **Use-Answer-For-All-Defaults**

**Usage:** Indicates whether values in the Answer-Defaults profile should override values in the default Internet profile when the MAX TNT validates an incoming call using RADIUS or TACACS.

Usage: Specify Yes or No. The default is No.

- Yes instructs the MAX TNT to use the Answer-Defaults profile for defaults. When you specify Yes, the MAX TNT falls back to the values specified in the Answer-Defaults profile for options that are not specified in a given external authentication profile.
- No specifies that the MAX TNT uses the default Internet profile for defaults. When you
  specify No, the MAX TNT uses defaults for options not specified in a external authentication profile.

#### Example: set use-answer-for-all-defaults=yes

Location: Answer-Defaults

See Also: Profiles-Required

User

**Description:** A profile that defines a name, password, privileges, and default displays for user login accounts.

Usage: To make User the working profile and list its contents:

admin> **read user default** USER/default read

```
admin> list
name*=default
password=""
active-enabled=yes
allow-termserv=no
allow-system=no
allow-diagnostic=no
allow-update=no
allow-password=no
allow-code=no
```

```
idle-logout=0
prompt="admin> "
default-status=no
top-status=general-info
bottom-status=log-window
left-status=connection-list
use-scroll-regions=yes
log-display-level=none
```

You can then use the Set command to modify the settings in the profile. To close the profile and save your changes:

admin> **write** USER/default written

**See Also:** Active-Enabled, Allow-Code, Allow-Diagnostic, Allow-Password, Allow-System, Allow-Termserv, Allow-Update, Bottom-Status, Default-Status, Idle-Logout, Left-Status, Log-Display-Level, Nailed-Up-Group, Password, Prompt, Top-Status, Use-Scroll-Regions

## **User-Profile**

**Description:** Specifies the name of the default User profile associated with Telnet sessions or serial access to the MAX TNT command interface.

**Usage:** Specify the name of a User profile. For the IP-Global profile, the default is null. For the Serial profile, the default is admin. A null value specifies that the user must log in explicitly.

Example: set user-profile=default

**Location:** IP-Global, Serial {shelf-*N* slot-*N N*}

See Also: User

#### **Use-Scroll-Regions**

**Description:** Specifies whether the vt100 scroll-region commands are used to reduce screen redraws when the status screen is displayed.

Usage: Specify Yes or No. The default is Yes.

- Yes specifies that the vt100 scroll-region commands are used to reduce screen redraws.
- No disables the vt100 commands. If the status screen is not redrawing properly, try setting Use-Scroll-Regions to No.

Example: set use-scroll-regions=yes

Location: User name

See Also: Bottom-Status, Default-Status, Left-Status, Top-Status

#### **Use-Trunk-Groups**

**Description:** Enables or disables the use of trunk groups for all network lines. When trunk groups are enabled, channels must be assigned trunk group numbers.

Usage: Specify Yes or No. The default is No.

- Yes specifies that all channels must be assigned a trunk group number for outgoing calls.
- No disables trunk groups.

#### Example: set use-trunk-groups=yes

**Dependencies:** When Use-Trunk-Groups=Yes, the T1 or E1 channel configuration must specify Trunk-Group assignments.

Location: System

See Also: Call-Type, Channel-Config N, Dial-Number, Trunk-Group

#### **UsrRad-Options**

Description: A subprofile that defines connection-specific RADIUS accounting options.

**Usage:** When Connection is the working profile:

```
admin> list usr
acct-type=global
acct-host=0.0.0.0
acct-port=1646
acct-key=""
acct-timeout=1
acct-id-base=acct-base-10
```

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

```
admin> list ..
```

**Dependencies:** RADIUS accounting must be configured in Rad-Acct-Client subprofile of the External-Auth profile.

Location: Connection station

See Also: Acct-Host, Acct-ID-Base, Acct-Key, Acct-Port, Acct-Timeout, Acct-Type, Rad-Acct-Client

## V

## V42/MNP

**Description:** Specifies how the digital modems negotiate LAPM/MNP error control with the analog modem at the other end of the connection.

Usage: Specify one of the following values:

- Will-V42 (the default) specifies that the modems request LAPM/MNP, but accept the call if it is not provided.
- Wont-V42 specifies that the modems do not use LAPM/MNP at all.
- Must-V42 specifies that the modems request LAPM/MNP, and drop the call if it is not provided.

Example: set v42/mnp=will-v42

Dependencies: If terminal services are disabled, V42/MNP does not apply.

Location: Terminal-Server > Modem-Configuration

See Also: Modem-Configuration

### V120-Answer

Description: A subprofile containing default settings for v.120 calls.

Usage: When the Answer-Defaults profile is the working profile:

admin> **list v120-answer** enabled=yes frame-length=256

You can then use the Set command to modify the settings in the subprofile. To close the subprofile and return to a higher context in the working profile:

admin> list ..

**Location:** Answer-Defaults

See Also: Enabled, Frame-Length

#### Valid-Entry

Description: Enables or disables the current input or output filter.

Usage: Specify Yes or No. The default is No.

- Yes activates the filter and enables its configuration.
- No disables the filter, causing the MAX TNT to skip it when filtering the data stream.

Example: set valid-entry=yes

Location: Filter *filter-name* > Input-Filters, Filter *filter-name* > Output-Filters

See Also: Input-Filters, Output-Filters

Value	
	<b>Description:</b> Specifies a hexadecimal number to be compared to specific bits contained in packets after the Offset, Len, and Mask calculations have been performed.
	Usage: Specify a hexadecimal number up to 12 bytes.
	Example: set value=aaaa030000080f3
	<b>Location:</b> Filter <i>filter-name</i> > Input-Filters > Gen-Filter, Filter <i>filter-name</i> > Output-Filters > Gen-Filter
	See Also: Gen-Filter, Input-Filters, Output-Filters
Version	
	Description: Specifies the firewall version.
	<b>Usage:</b> Only the Secure Access Manager should set the Version value. If you change its value in the Firewall profile, one of the following messages appears:
	error: Base 64 decode failed error: Firewall does not load properly (corrupted?)
	Location: Firewall name
	See Also: Data
VJ-Header-Pre	diction
	<b>Description:</b> Specifies whether Van Jacobson IP header prediction should be negotiated on incoming calls.
	Usage: Specify Yes or No. The default is Yes.
	• Yes enables VJ compression for TCP packets.

• No disables VJ compression for TCP packets.

Example: set vj-header-prediction=no

Location: Answer-Defaults > IP-Answer, Connection station > IP-Options

See Also: IP-Answer, IP-Options, IP-Routing-Enabled

## W

## Write-Access-Hosts

**Description:** Specifies up to five IP addresses of SNMP managers that have SNMP write permission. The MAX TNT responds to SNMP Set, Get, and Get-Next commands only from the SNMP managers you specify.

**Usage:** Each element in the array can specify an IP address. To list the array elements when SNMP is the working profile:

```
admin> list write-access
write-access-hosts[1]=0.0.0.0
write-access-hosts[2]=0.0.0.0
write-access-hosts[3]=0.0.0.0
write-access-hosts[4]=0.0.0.0
write-access-hosts[5]=0.0.0.0
```

You can then set the value of Write-Access-Hosts by specifying its numeric index:

admin> set 1 10.2.3.4/24

Or, you can set an array element without first listing the array:

```
admin> set write-access-hosts 1 10.2.3.4/24
```

Example: set write-access 2=10.5.6.7/29

**Dependencies:** For Write-Access-Hosts to restrict read-write access to the MAX TNT, you must set Enforce-Address-Security=Yes.

Location: SNMP

See Also: Enabled, Enforce-Address-Security, Read-Access-Hosts, Read-Community, Read-Write-Community

## Υ

## **Yellow-Receive**

**Description:** Specifies whether the local device has received a loss-of-frame (Yellow Alarm) indication.

**Usage:** The Yellow-Receive setting is read only. True specifies that the local device has received a Yellow Alarm indication. False specifies that the local device has not received a Yellow Alarm indication.

Location: T1-Stat {shelf-*N* slot-*N N*}

See Also: AIS-Receive

# **Ascend Progress and Disconnect Codes**

This chapter contains the following sections:

Ascend progress codes	4-2
Ascend disconnect cause codes	4-4

## Ascend progress codes

Code	Explanation
0	No progress.
1	Not applicable.
2	The progress of the call is unknown.
10	The call is up.
30	The modem is up.
31	The modem is waiting for DCD.
32	The modem is waiting for result codes.
40	The terminal server session has started up.
41	The MAX TNT is establishing the TCP connection.
42	The MAX TNT is establishing the immediate Telnet connection.
43	The MAX TNT has established a raw TCP session with the host. This code does not imply that the user has logged into the host.
44	The MAX TNT has established an immediate Telnet connection with the host. This code does not imply that the user has logged into the host.
45	The MAX TNT is establishing an Rlogin session.
46	The MAX TNT has established an Rlogin session with the host. This code does not imply that the user has logged into the host.
50	Active modem outdial call.
60	The LAN session is up.
61	LCP negotiations are allowed.
62	CCP negotiations are allowed.
63	IPNCP negotiations are allowed.
64	Bridging NCP negotiations are allowed.
65	LCP is in the Open state.
66	CCP is in the Open state.
67	IPNCP is in the Open state.
68	Bridging NCP is in the Open state.
Codes 69 throu	igh 77 are LCP progress codes. Refer to the RFC 1331 state transition table.

 Table 4-1.
 Ascend progress codes
Code	Explanation
69	LCP is in the Initial state.
70	LCP is in the Starting state.
71	LCP is in the Closed state.
72	LCP is in the Stopped state.
73	LCP is in the Closing state.
74	LCP is in the Stopping state.
75	LCP is in the Request Sent state.
76	LCP is in the ACK Received state.
77	LCP is in the ACK Sent state.
80	IPXNCP is in the Open state.
81	AT NCP is in the Open state.
82	BACP session is being opened.
83	BACP is opened.
90	V.110 is up.
91	V.110 is in the Open state.
92	V.110 is in the Carrier state.
93	V.110 is in the Reset state.
94	V.110 is in the Closed state.
100	ID Authentication is successful and the MAX TNT is configured for call- back.
101	ID Authentication failed.
102	During ID Authentication the RADIUS server did not respond.
120	Frame Relay LMI negotiations in progress.
121	Frame Relay link has end-to-end connectivity and PVCs can pass data.

 Table 4-1.
 Ascend progress codes(Continued)

# Ascend disconnect cause codes

Code	Description	
0	No reason.	
1	The event was not a disconnect.	
2	The reason for the disconnect is unknown. This code can appear when the remote connection goes down.	
3	The call has disconnected.	
4	ID authentication has failed.	
5	RADIUS timeout during ID authentication.	
6	The MAX TNT disconnected because callback is configured.	
7	The Send Disconnect timer in the Line profile has been triggered.	
These codes can appear if a disconnect occurs during the initial modem connection.		
9	No modems available.	
10	The modem never detected DCD.	
11	The modem detected DCD, but became inactive.	
12	The result codes could not be parsed.	
These codes are related to immediate Telnet and raw TCP disconnects during a terminal server session.		
20	The user exited normally from the terminal server.	
21	The user exited from the terminal server because the idle timer expired.	
22	The user exited normally from a Telnet session.	
23	The user could not switch to SLIP or PPP because the remote host had no IP address or because the dynamic pool could not assign one.	
24	The user exited normally from a raw TCP session.	
25	The login process ended because the user failed to enter a correct pass- word after three attempts.	
26	The raw TCP option is not enabled.	
27	The login process ended because the user typed Ctrl-C.	
28	The terminal server session has ended.	
29	The user closed the virtual connection	

Table 4-2. Ascend disconnect cause codes

Code	Description	
30	The modem outdial virtual connection has ended.	
31	The user exited normally from an Rlogin session	
32	The user selected an invalid Rlogin option.	
33	The MAX TNT has insufficient resources for the terminal server session.	
35	The MAX TNT did not receive an MPP keepalive packet and closed down the session.	
These codes concern PPP connections.		
40	PPP LCP negotiation timed out while waiting for a response from a peer.	
41	There was a failure to converge on PPP LCP negotiations.	
42	PPP PAP authentication failed.	
43	PPP CHAP authentication failed.	
44	Authentication failed from the remote server.	
45	The peer sent a PPP Terminate Request.	
46	LCP got a close request from the upper layer while LCP was in an open state. This is a normal, graceful LCP closure.	
47	LCP closed because no NCPs were open.	
48	LCP closed because it could not determine to which MP bundle it should add the user.	
49	LCP closed because the MAX TNT could not add any more channels to an MP session.	
These codes are related to immediate Telnet and raw TCP disconnects, and contain more specific information that the Telnet and TCP codes listed earlier in this table.		
50	The Raw TCP or Telnet internal session tables are full.	
51	Internal resources are full.	
52	The IP address for the Telnet host is invalid.	
53	The MAX TNT could not resolve the hostname.	
54	The MAX TNT detected a bad or missing port number.	
The TCP stack can return these disconnect codes during an immediate Telnet or raw TCP session.		
60	The host reset the TCP connection.	

 Table 4-2.
 Ascend disconnect cause codes(Continued)

Code	Description	
61	The host refused the TCP connection.	
62	The TCP connection timed out.	
63	A foreign host closed the TCP connection.	
64	The TCP network was unreachable.	
65	The TCP host was unreachable.	
66	The TCP network was administratively unreachable.	
67	The TCP host was administratively unreachable.	
68	The TCP port was unreachable.	
These are additional disconnect codes.		
100	The session timed out because there was no activity on a PPP link.	
101	The session failed for security reasons, such as an invalid incoming user.	
102	The session ended for callback.	
115	Far-end device has hung up.	
120	One end refused the call because the protocol was disabled or unsupported.	
150	RADIUS requested the disconnect.	
151	Call disconnected by local administrator.	
152	Call disconnected by local SNMP command.	
160	The maximum allowed retries for V.110 synchronization have been exceeded.	
170	PPP authentication has timed out.	
180	The call disconnected as the result of a local hangup.	
185	The call disconnected because the remote end hung up.	
190	The call disconnected because the T1 line that carried it was quiesced.	
195	The call disconnected because the call duration exceeded the maxi- mum amount of time allowed by the Max Call Mins or Max DS0 Mins parameter on the MAX TNT.	

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