Lucent Technologies
Bell Labs Innovations



MAX TNT®

TAOS 9.0.6 Cumulative Release Note

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Table of Contents

Customer Service 3

Upgrade and downgrade procedures 1

Requirements and recommendations 1
- Obtaining the TAOS 9.0.6 software 1
- Local access to the unit recommended 1
- Restoring DNIS and CLID passwords for a TAOS 8.x upgrade 1
- Saving the system configuration 1

Upgrade instructions 2
- Before you begin upgrading 2
- Upgrading a standalone MAX TNT unit 2
- Upgrading a multishelf MAX TNT unit 3

Downgrade instructions 4
- Downgrading a standalone MAX TNT unit 4
- Downgrading a multishelf MAX TNT unit 5

TAOS 9.0.6 enhancement 7

- Firmware versions for digital modems 7
- Firmware versions for MultiDSP cards 7

TAOS 9.0.4 enhancements and corrections 9

TAOS 9.0.4 enhancements 9
- Firmware versions for MultiDSP cards 9

TAOS 9.0.4 corrections 9

TAOS 9.0.3 enhancements and corrections 13

TAOS 9.0.3 enhancements 13
- Firmware versions for digital modems 13
- Firmware versions for MultiDSP cards 13

Syslog now reports L2TP session up 13
- Command-line interface changes 13
- RADIUS username no longer truncated in syslog messages 14

LAN session information records now consistent 14
- Sample MAX TNT-style **`syslog`** record 15
- Sample RADIUS Accounting Stop record 15

TAOS 9.0.3 corrections 16

TAOS 9.0.2 enhancements and corrections 21

TAOS 9.0.2 enhancements 21
- Firmware versions for digital modems 21

Firmware versions for MultiDSP cards 21
TAOS 9.0.2 corrections 21

TAOS 9.0.0 corrections 23

Notices and known issues in TAOS 9.0.6 27

Notices in TAOS 9.0.6 27
Notice of memory requirement in TAOS 9.0.6 27
Notice of support for universal port on the 96-port MultiDSP slot card 27
Notice of a tunneling configuration requirement 27
Notice of allow-unencrypted-tunnel-password parameter 27
Notice of parameter name changes in the external-auth profile 28
Known issues in TAOS 9.0.6 28

Upgrade and downgrade procedures

This section shows how to upgrade and downgrade the TAOS software for a MAX TNT® unit.

Requirements and recommendations

These recommendations for upgrading MAX TNT units help ensure a smooth upgrade. If you must downgrade from this release to a previous one, please see "Downgrade instructions" on page 4.

Obtaining the TAOS 9.0.6 software

The MAX TNT TAOS 9.0.6 software consists of the following files:

Filename	Descriptions
`tntsrb.bin`	The boot loader. Both T1 and E1 loads use the same boot loader software. Install the appropriate boot loader for your software release when upgrading or downgrading.
`tntrel.tar and tntrel2.tar`	Tar files (T1 load) that contain images for the shelf controller and all T1-compatible slot cards.
`tntrele.tar and tntrele2.tar`	Tar files (E1 load) that contain images for the shelf controller and all E1-compatible slot cards.

If you need further assistance on how to obtain the TAOS 9.0.6 software, see "Customer Service" on page 3.

Local access to the unit recommended

Whenever you install system software, Lucent recommends that you access the unit through the shelf controller serial or LAN port rather than a slot card port.

Restoring DNIS and CLID passwords for a TAOS 8.x upgrade

If you upgrade to TAOS 9.0.6 from a TAOS 8.x release and your unit is configured with Domain Name Information Service (DNIS) or calling line ID (CLID) passwords, the unit will no longer recognize the `dnis-password` and `clid-password` values set in previous releases and dial-in users might experience a busy tone. To restore the passwords, see "Notice of parameter name changes in the external-auth profile," on page 28.

Saving the system configuration

As a general practice, always save the system configuration before upgrading or downgrading system software. If you use TFTP to save the system configuration, the target file must exist on the TFTP server and you must have permission to write it. For example, the following commands executed on a TFTP server create a target file and set its permissions:

```
$ touch /tftpboot/config/testcfg.1
$ chmod a=rw /tftpboot/config/testcfg.1
```

Before you save the system configuration, you must enable permission in the `Allow-Password` parameter in the `user` profile to save the configured passwords. If you do not have permission enabled, you are prompted to confirm that you wish to save the configuration without passwords. If you save the configuration without passwords and then restore the saved configuration, all passwords in the configuration are wiped out.

The following commands executed on the MAX TNT unit save the system's configuration to the target file on the TFTP server and then restore the saved configuration:

```
admin> save network 10.10.10.10 config/testcfg.1
```

```
admin> load config network 10.10.10.10 config/testcfg.1
```

Note: For additional information about the `save` command and its options, see the *APX 8000/MAX TNT Reference*.

Upgrade instructions

These instructions show how to upgrade to TAOS 9.0.6 from TAOS version 8.0.x or later. If you are not sure which version the system is running, enter the `version` command. For example:

```
admin> version
Software version 8.0.3
```

Note: Under certain conditions, the `load tar` command might not recognize any slot cards and load only the shelf controller image during the upgrade procedure. If this occurs, reset the system and load the tar file again. The second load tar command loads the appropriate slot-card images for the system.

Before you begin upgrading

Before upgrading a standalone or multishelf unit, follow these preliminary steps:

1. Log into the system and save its configuration to a TFTP server. This step is optional but strongly recommended. For details, see "Saving the system configuration" on page 1.
2. Verify that the `load-select` owner profile is configured to either automatically load only required binaries or to load only selected binaries.

Upgrading a standalone MAX TNT unit

Note: The following steps are order sensitive. To help ensure a smooth upgrade, first perform the preliminary upgrade steps described in the preceding section, and then perform the following steps in the order in which they are shown.

To upgrade a standalone unit, proceed as follows:

1. Format the flash card (optional). For example:

   ```
   admin> format flash-card-1
   ```

2. Load the boot loader. For example:

```
admin> load boot-sr network 10.10.10.10 tntsrb.bin
```

Note: If you upgrade from TAOS 9.0.x or higher, continue with step 4. Otherwise, continue with step 3 and then skip step 4.

3. Load the tar file. For example:

```
admin> load tar network 10.10.10.10 tntrel.tar
```

4. Load the tar file. For example:

```
admin> load tar network 10.10.10.10 tntrel.tar tntrel2.tar
```

5. Restore the system configuration file (optional). For example:

```
admin> load config network 10.10.10.10 /tftpboot/config/testcfg
```

6. Reset the system as follows:

```
admin> reset
```

Note: In the TAOS 9.0.6 release, the `dnis-password` parameter in the `password-profile` subprofile of the `EXTERNAL-AUTH` profile has been changed to `DNIS`.

Upgrading a multishelf MAX TNT unit

Note: For multishelf systems, the master shelf and each slave shelf must have a 32MB JEDEC DRAM card (model number TNT-SP-DRAM-32).

If you are upgrading a multishelf system, you must load the new boot loader to the slave shelves by using the `loadslave` command. (The version of the `tntsrb.bin` file on the master shelf must match the `tntsrb.bin` version on the slave shelves. Otherwise, the slave shelves cannot load code from the master shelf.) In addition, you must load a link to a redundant image of the tar file located in onboard flash.

Note: The following steps are order sensitive. To help ensure a smooth upgrade, first perform the preliminary steps described in “Before you begin upgrading” on page 2, and then perform the following steps in the order in which they are shown:

1. Format the flash card (optional). For example:

```
admin> format flash-card-1
```

2. Load the boot loader. For example:

```
admin> load boot-sr network 10.10.10.10 tntsrb.bin
```

3. Load the new boot loader to the slave shelves. For example, the following command loads the boot loader to a slave shelf with a rotary-switch setting of `2`:

```
admin> loadslave 2 boot-sr
```

Note: If you are upgrading from TAOS 9.0 or higher continue to step 5.

4. Load the tar file. For example:

```
admin> load tar network 10.10.10.10 tntrel.tar
```

Note: Skip step 5.

5. Load the tar file. For example:

```
admin> load tar network 10.10.10.10 tntrel.tar tntrel2.tar
```

6. Use the `loadslave` command to load a link to the `image2` file, which is a redundant compressed image of the of the binary in the NVRAM. For example, the following command loads the image to a slave shelf with a rotary-switch setting of `2`:

```
admin> loadslave 2 image2
```

7 Restore the system configuration file (optional). For example:

```
admin> load config network 10.10.10.10 /tftpboot/config/testcfg
```

8 Reset the system.

```
admin> reset -a
```

Downgrade instructions

Because releases are not necessarily backward compatible, Lucent recommends that you always restore a backup configuration made from the previously installed version or one of its predecessors.

Note: If you must downgrade, you must have serial access to the MAX TNT. See the *MAX TNT TAOS 9.0 Release Note* at `http://www.lucent.com/support`.

Downgrading a standalone MAX TNT unit

To restore the previous software version (TAOS 9.0.x), proceed as follows:

1 Format the flash card. For example:

```
admin> format flash-card-1
```

2 Load the previous version of the boot loader. For example:

```
admin> load boot-sr network 10.10.10.10 tntsrb.bin
```

Note: If downgrading to a previous software version prior to 9.0, continue with step 3.

3 Load the previous version of the tar file. For example, to load via TFTP from a local host:

```
admin> load tar network 10.10.10.10 tntrel.tar
```

Note: Skip step 4.

4 Load the previous version of the tar file files.

```
admin> load tar network tntrel.tar tntrel2.tar
```

5 Clear all profiles by entering the `nvram` command. For example:

```
admin> nvram
```

6 Log into the system using the serial connection. Open the `ip-interface` profile for the shelf controller and set the address. For example:

```
admin> read ip-interface { { 1 controller 1 } 0}
IP-INTERFACE/{ { shelf-1 controller 1 } 0 } read

admin> set ip-address = 10.10.10.2/24

admin> write
IP-INTERFACE/{ { shelf-1 controller 1 } 0 } written
```

7 Load a backup configuration made under the restored software version or one of its predecessors. For example:

```
admin> load config network 10.10.10.10 config/801-config
```

8 Reset the system. This step is required. For example:

```
admin> reset
```

Downgrading a multishelf MAX TNT unit

If you are downgrading a multishelf system, you must load the restored boot loader to the slave shelves by using the `loadslave` command. (The version of the `tntsrb.bin` file on the master shelf must match the `tntsrb.bin` version on the slave shelves. Otherwise, the slave shelves cannot load code from the master shelf.) In addition, you must load a link to a redundant image of the restored tar file. To downgrade a multishelf unit, proceed as follows:

1. Format the flash card. For example:

   ```
   admin> format flash-card-1
   ```

2. Load the boot loader. For example:

   ```
   admin> load boot-sr network 10.10.10.10 tntsrb.bin
   ```

3. Load the new boot loader to the slave shelves. For example, the following command loads the boot loader to a slave shelf with a rotary-switch setting of 2:

   ```
   admin> loadslave 2 boot-sr
   ```

   Note: If you are downgrading to a TAOS version prior to 9.0, continue with step 4. Otherwise, continue with step 5.

4. Load the tar file. For example:

   ```
   admin> load tar network 10.10.10.10 tntrel.tar
   ```

   Note: Skip step 5.

5. Load the tar files. For example:

   ```
   admin> load tar network 10.10.10.10 tntrel.tar tntrel2.tar
   ```

6. Use the `loadslave` command to load a link to the `image2` file, which is a compressed image of the binary in the NVRAM. For example, the following command loads the image to a slave shelf with a rotary-switch setting of 2:

   ```
   admin> loadslave 2 image2
   ```

7. Clear all profiles by entering the `nvram` command. For example:

   ```
   admin> nvram
   ```

8. Log into the system (master shelf) using the serial connection. Open the `ip-interface` profile for the shelf controller and set the IP address. For example:

   ```
   admin> read ip-interface { { 1 controller 1 } 0}
   IP-INTERFACE/{ { shelf-1 controller 1 } 0 } read

   admin> set ip-address = 10.10.10.2/24

   admin> write
   IP-INTERFACE/{ { shelf-1 controller 1 } 0 } written
   ```

9. Load a backup configuration made under the restored software version or one of its predecessors. For example:

   ```
   admin> load config network 10.10.10.10 /tftpboot/config/801-config
   ```

   Note: Steps 10 and 11 are required and are order sensitive.

10. To enable the shelf controller as master shelf, reset the system as follows:

    ```
    admin> reset
    ```

11. To enable the system as a multishelf system, reset the system as follows:

    ```
    admin> reset -a
    ```

TAOS 9.0.6 enhancement



Note: TAOS 9.0.6 includes improved resistance to Denial of Service attempts.

Firmware versions for digital modems

The Mindspeed (formerly known as Conexant) firmware versions for the APX 8000 Digital Modem cards include support for V.90, K56flex, K56plus, and all slower, standard modem speeds. This release includes the following Mindspeed firmware:

- Series56™ Digital Modem slot cards (also called CSM/1, TNT-SL-48MOD-S56) support V2.0982-K56_2M_DLP_CSM firmware.
- Series56™ II Digital Modem slot cards (also called CSM/3, TNT-SL-48MOD-SGL and TNT-SL-48MOD-S-C) support V5.8177 firmware.
- Series56™ III Digital Modem slot cards (also called CSMV/3, TNT-SL-48MODV3-S-C) support V5.8177 firmware.

Firmware versions for MultiDSP cards

This release includes the following Lucent firmware versions for APX 8000 MultiDSP cards:

- 48-port MultiDSP slot cards (TNTP-SL-ADI-C or TNTV-SL-ADI-C) support Controller
- V0.1.56, Modem DSP V0.1902.0, and VoIP DSP V3.5.10 Lucent firmware.
- 96-port MultiDSP slot cards (APX8-SL-96DSP) support Controller V0.1.56, Modem DSP V0.1902.0, and VoIP DSP V3.5.10 Lucent firmware

TAOS 9.0.4 enhancements and corrections

TAOS 9.0.4 introduced new enhancements and corrected certain problems from the previous release.

TAOS 9.0.4 enhancements

TAOS 9.0.4 includes the following Lucent firmware versions for MultiDSP cards:

Firmware versions for MultiDSP cards

This release includes the following Lucent firmware versions for MultiDSP cards:

- 48-port MultiDSP slot cards (TNTP-SL-ADI-C or TNTV-SL-ADI-C) support Lucent V0.1.53 firmware.
- 96-port MultiDSP slot cards (APX8-SL-96DSP) support Lucent V0.1.53 firmware.

TAOS 9.0.4 corrections

Table 1 lists the trouble report (TR) identification numbers and the problems that have been corrected in TAOS 9.0.4.

Table 1. Trouble report ID numbers and problems corrected in TAOS 9.0.4

TR ID	Problem corrected
6001758	Modem clients experienced slow or intermittent FTP and mail attachment uploads (`Tx`), which eventually timeout and abort. Download FTP and mail transfers worked fine. Upload problem was most noticable with file uploads greater than 10KB.
6001935	A MAX unit did not correctly set bits for the RADIUS `Proxy Authen Type` (`AVP 29`) and `Proxy Authen ID` (`AVP 32`) attributes and attribute-value pairs.
6002013	The refresh -p command did not update routes properly in the routing table.
6002118	A task running on the modem and requesting the packet bus interface generated a warning because the packet bus had not initialized.
6002209	An `invalid mdm con str` message inside the syslog caused a delay in authentication.
6002220	In a situation in which the TNT unit has two different default routes across two different Ethernet links to the same box, and there are some additional routes defined by RADIUS that lead to dialout connections, the routing table becomes corrupt and some packet loss occurs if a cable from one of the two Ethernet links used for the default route is disconnected.

Table 1. Trouble report ID numbers and problems corrected in TAOS 9.0.4 (continued)

TR ID	Problem corrected
6002227	On E1 lines using R2 signaling, the TNT unit did not acknowledge the Telco switch siezure, leaving channels in a seized state rather than returning to idle. Recovery required user intervention at the switch to reset the channels.
6002232	The Microsoft MPPC link compression option was present in the menus when the feature was not supported.
6002261	The TNT unit was unable to lower the bandwidth by dropping a channel using BACP when the ISDN MPPP call was established across two different slot cards. The bandwidth would drop only if the client requested to lower the bandwidth.
6002423	MultiVoice®: The R2 implementation for Brazil used B-3 signal (Group B tone #3) for `User Busy`. Globaltron was connected to switches in Brazil that use B-2 signal (Group B tone #2) for `User Busy`. Thus, when the signaling mode was set for Brazil, the egress gateway did not recognize the B-2 signal and signal CC 17 in the disconnect message. The R2 implementation for Brazil on the egress gateway now recognizes either B2 or B3 to signal user busy.
6002279	The TNT CSMX card reset with FE1 at `pktFreeChain`.
6001020	The TNT unit treated calls that did not progress to the `Session Up` state as `bad modem` calls. When a modem received four such calls in succession, the modem was moved to the `suspect modem` list, shown by the `modem -s` command.
6002539	Taiwan E1 PRI proccesses allowed calls when illegal IE was present in SETUP.
6002395	SNMP agent did not correctly identify the 48-port MultiDSP card or the 96-port MultiDSP card.
6002170	When network traffic was heavy, a TNT unit did not correctly support BACP.
6001986	The `netstat -i` command reported the wrong value for an ATM link on a DS3-ATM2 card, and was reset to 0 after each command execution.
6002412	There were no transparent cause codes when multiple logical gateways were used to achieve single-stage and two-stage dialing.
6002143, 6002233	A MultiVoice® Gateway did not successfully place fax calls to some destinations.
7000063	The Ethernet card was not able to perform a coredump to the flash card.
7006380	A network layer control block (NLCB) leakage caused a message reject (MRJ) on stuck channels.
6002418	TNT unit dial-in users browsing the Internet via a PPTP tunnel could not display some JPEG images.

Table 1. Trouble report ID numbers and problems corrected in TAOS 9.0.4 (continued)

TR ID	Problem corrected
6002167	When a TNT unit was used as a PPTP LAC, connecting with a tunnel-endpoint server from BAYNetworks, the PPTP session sometimes failed to come up, while the Tunnel control connection was correctly brought up. When the PPTP session failed, the message `GRE_PB : No listener for protocol 0x880B` was shown when monitoring the generic routing encapsulation (GRE).
6002458	E1 R2, W179-_networkStateChanged then FE2-_getBuffCommon
6002172	The TNT was not dropping calls properly. Output to the `line` command showed that channels were in use, but entering `users` did not show any active calls on those channels.
6001658	Could not bundle two 64K channels between a TNT unit and a P50 D64s2 line.
6002506	The APX unit's routing table did not reflect RIP updates.
6002369	Two-channel MPP calls failed to connect over two nailed T1 lines.
7000019	A TNT unit incorrectly rejected some RADIUS attributes' formats.
6002261	The APX unit did not alert you when you stacked it with another unit running a different version of TAOS.
7000009	After an administrative reset, SS7 TNT units generated a series of 179 Warnings.
6002416	A TNT unit's incorrect support for RADIUS accounting lead the unit to refer to a secondary RADIUS server.
6002448	When the home router was in gateway mode and the home agent initiated a tunnel connection to it, the mobile client did not drop the connection, even when the home network dropped the connection. The mobile client and the tunnel should drop the connection when the connection between the home agent and the home router is brought down, regardless of whether the home agent or the home router initiates the WAN session.
7000030	MultiDSP card was experiencing increased abnormal disconnect rates.

TAOS 9.0.3 enhancements and corrections

TAOS 9.0.3 includes the following new enhancements and corrected certain problems from the previous release.

TAOS 9.0.3 enhancements

TAOS 9.0.3 includes the following modem manager enhancements:

Firmware versions for digital modems

The Mindspeed (formerly known as Conexant) firmware versions for the MAX TNT® Digital Modem cards include support for V.90, K56flex, K56plus, and all slower, standard modem speeds. This release includes the following Mindspeed firmware:

- Series56™ Digital Modem slot cards (also called CSM/1, TNT-SL-48MOD-S56) support V2.0982-K56_2M_DLP_CSM firmware.
- Series56™ II Digital Modem slot cards (also called CSM/3, TNT-SL-48MOD-SGL and TNT-SL-48MOD-S-C) support V5.8177 firmware.
- Series56™ III Digital Modem slot cards (also called CSMV/3, TNT-SL-48MODV3-S-C) support V5.8177 firmware.

Firmware versions for MultiDSP cards

This release includes the following Lucent firmware versions for MAX TNT® and APX 8000™ MultiDSP cards:

- 48-port MultiDSP slot cards (TNTP-SL-ADI-C or TNTV-SL-ADI-C) support Controller V0.1.46, Modem DSP V0.1803.0, and VoIP DSP V3.0.35 Lucent V0.1622.0 firmware.
- 96-port MultiDSP slot cards (APX8-SL-96DSP) support Controller V0.1.46, Modem DSP V0.1803.0, and VoIP DSP V3.0.35 Lucent firmware.

Syslog now reports L2TP session up

In previous releases, MAX TNT units did not log any messages when the control channel and the data channel of a Layer 2 Tunneling Protocol (L2TP) tunnel were established. Now, each unit generates the appropriate messages.

Command-line interface changes

Depending on the configuration, MAX TNT units can log new messages to the console, the `syslog` server, or both. The log-message level is `informational`.

When the control channel is established and the TAOS unit is acting as an L2TP access concentrator (LAC), the unit logs the following message:

`TUNNEL-`*`session_ID`*`, L2TP Control Channel up with `*`peername`*

For example: `LOG info, Shelf 1, Slot 13, Time: 12:55:49--`

```
TUNNEL-3, L2TP Control Channel up with pjmax1
```

When the data channel is established and the TAOS unit is acting as a LAC, the unit logs the following message:

`TUNNEL-`*`session_ID`*`, L2TP Data Channel up with `*`peername`* `[MBID` *`route_ID`*`]`

For example: `LOG info, Shelf 1, Slot 13, Time: 12:55:49--`

```
TUNNEL-3, L2TP Data Channel up with pjmax1 [MBID 3]
```

When the tunnel is deactivated and the TAOS unit is acting as a LAC, the unit logs the following message:

`TUNNEL-`*`session_ID`*`, L2TP Tunnel Cleared: result code `*`result_code`*`, error code `*`error_code`*

For example: `LOG info, Shelf 1, Slot 13, Time: 12:56:49--`

```
TUNNEL-3, L2TP Tunnel Cleared: result code 0, error code 0
```

RADIUS username no longer truncated in syslog messages

In a `syslog` End-of-Call message, the username associated with a RADIUS-authenticated dial-in session can now contain up to 253 characters. Formerly, the username was truncated at 31 characters.

Following is a sample `syslog` End-of-Call record display:

```
01-26-2001 14:52:34  Local0.Info  200.168.21.70   ASCEND: shelf 1 slot
1 port 2, LAN session info, Conn=("l2tp-test112345678921234567893
12345678941234567895" ?->? PPP 46000/28800 60/1 192.168.21.71)
Auth=(22 335/11 291/12) Sess=(33 335/11 291/12) Chan=(1 1 1 21)
Modem=(1 4 2) Tunn=(L2TP s=204.253.164.1) [MBID 2]
```

LAN session information records now consistent

The disconnect cause and progress codes appearing in different records are now consistent with each other.

If you set the `syslog-format` parameter in the `log` profile to `tnt` on a MAX TNT unit or an APX 8000 unit, and the unit is configured to display call information at the end of a call, the unit generates a `LAN session info` record and a Stop record in the command-line interface and in `syslog`. Similarly, if you set the `syslog-format` parameter to `max`, the unit generates a `LAN session info` record and a Call record in the command-line interface and in `syslog`.

Previously, at the end of a call, the disconnect cause and the progress codes listed in a Stop record or Call record sometimes differed from those listed in a `LAN session info` record or RADIUS accounting Stop packet. In addition, sometimes disconnect cause code 1 (which should not be listed for any call) appeared. These problems have now been fixed.

Sample MAX TNT-style `syslog` record

The following `syslog` record shows the disconnect cause and progress codes as 2.

```
Nov 28 11:44:26 mytnt 1/17: [1/3/1/0] Assigned to port [MBID 1]

Nov 28 11:44:26 mytnt 1/3: ENCAP-1: Outgoing call, no interface for
host dialout.

Nov 28 11:44:26 mytnt 1/3: [1/3/1/0] STOP: 'dialout'; cause 2.;
progress 2.; host 0.0.0.0 [MBID 1] [dialout]

Nov 28 11:44:26 mytnt 1/3: [1/3/1/0] LAN session info: Conn=(?
56000/56000 2/2) Auth=(0 0/0 0/0) Sess=(0 0/0 0/0) [MBID 1] [dialout]
```

Sample RADIUS Accounting Stop record

The following RADIUS Accounting Stop record shows the disconnect cause and progress codes as 2.

```
Tue Nov 28 11:44:26 2000
  NAS-Identifier = 210.210.210.236
  NAS-Port = 0
  NAS-Port-Type = Sync
  Acct-Status-Type = Stop
  Acct-Delay-Time = 0
  Acct-Session-Id = "344185618"
  Ascend-Disconnect-Cause = 2
  Ascend-Connect-Progress = 2
  Ascend-Xmit-Rate = 56000
  Ascend-Data-Rate = 56000
  Ascend-PreSession-Time = 0
  Ascend-Pre-Input-Octets = 0
  Ascend-Pre-Output-Octets = 0
  Ascend-Pre-Input-Packets = 0
  Ascend-Pre-Output-Packets = 0
  Ascend-Modem-PortNo = 3
  Ascend-Modem-SlotNo = 8
  Ascend-Modem-ShelfNo = 1
```

TAOS 9.0.3 corrections

Table 2 lists the trouble report (TR) identification numbers and the problems that have been corrected in TAOS 9.0.3.

Table 2. Trouble report ID numbers and problems corrected in TAOS 9.0.3

TR ID	Problem corrected
TR 5401	MAX TNT® units sent duplicate address-free requests when a PPP session ended.
TR 1768	MultiVoice®: Reset without a fatal error message occurred after Warnings 179 and 104 messages.
TR 6000936	Warning 330 and FE42 (fatal error) messages were appearing on CSM3V cards in MAX TNT units. The FE42 index decoded as FATAL_READY_HANG_FAULT. The Warning 330 index decoded as ERROR_GDB_PROTECTION_FAULT.
TR 6001036	When a PPP session timed out on a MAX TNT unit, the unit sent two address free requests.
TR 6001059	When a MAX TNT was used as an outdial box to a MAX 6000 in an R2 back to back configuration E1 line blocking problems were experienced. There was a problem with the processing of incoming R2 calls, as the call was being set up. Sometimes the appropriate TSS mapping was removed by the tear down of the previous call.
TR 6001168	In prior releases, the call back feature on a MAX TNT unit did not work with the ASG 3.x (IPDC). The MAX TNT unit dialed out and the call got connected, but the DSP (HDLC or modem) was not informed of the call connection. The call connect information did not pass from IPDC to the DSP.
TR 6001179	On a MAX TNT unit's WAN interface, support for IPX ping did not function properly.
TR 6001267	The disconnect cause and progress code in a MAX TNT unit's Syslog were inconsistent and/or incorrect.
TR 6001487	MultiVoice®: There was excessive delay between announcements in the play list.
TR 6001498	MultiVoice®: Calling Party Category was not sent transparently from ingress to egress.
TR 6001499	MultiVoice®: E1/R2 calls do not complete when using `number-complete = timeout`.
TR 6001521	Prior to this release, some client modems experienced problems connecting to MAX TNT units with MultiDSP2 (MADD2) slot cards. The MultiDSP (MADD) firmware has been updated to version 1.4.6.
TR 6001544	Under some circumstances clients with different connection profiles were inappropriately linked together when establishing an MP connection.
TR 6001561	A MAX TNT unit's Syslog did not reflect messages when the control and data channels of an L2TP tunnel were established.

Table 2. Trouble report ID numbers and problems corrected in TAOS 9.0.3

TR ID	Problem corrected
TR 6001582	The MAX TNT shelf controller reset with FE40 (fatal error) messages several times a day.
TR 6001592	When the MAX TNT unit was connected to a core dump server via Ethernet, the core dump would not successfully complete.
TR 6001609	L2F Idle Timeout terminated the session even if traffic was being sent over the connection.
TR 6001641	Inaccurate SNMP (eventGroup) MIB information about bytes in/out (Bin/Bout) was reported as zero-binary Telnet and raw TCP sessions. It appeared that Syslog call logging also reported bad values for these fields.
TR 6001708	A MAX TNT unit dropped calls when configured to support non-facility associated signaling (NFAS) and the unit's line interface settings changed.
TR 6001717	L2TP tunnel authentication failed on a MAX TNT unit when an L2TP network server (LNS) requested authentication based on the LNS Name rather than the LNS IP address.
TR 6001737	MAX TNT units did not account for all of the modems utilized under the TDM debug command.
TR 6001738	A MAX TNT unit did not support multicast RIP updates correctly.
TR 6001760	When a SWAN card in a MAX TNT unit had a PPP connection repeatedly disconnected, it would stop attempting to reestablish a connection.
TR 6001762	MAX TNT units did not correctly reset the RADIUS permanent connection profiles that were displayed.
TR 6001768	Customer reported reset without a fatal error after warnings 179 and 104 occurred.
TR 6001798	When a core dump was taken of the Ethernet-3ND slot card in MAX TNT units, the card stayed in diagnostic mode and did not recover unless manually applying `slot -d` and `slot -u` commands.
TR 6001861	MAX TNT units did not authenticate a dial-in user's session when a unit was configured to support 16-bit vendor-specific RADIUS attributes.
TR 6001881	The FE36 (fatal error) message on a SWAN slot card in MAX TNT units indicated that there was a stack overflow condition.
TR 6001901	MAX TNT units did not accurately process the values specified for the Frame Relay MRU parameter.
TR 6001912	When an Ethernet-3 or an Ethernet-3ND slot card interface changed state to link UP or link DOWN, MAX TNT units did not generate link state change messages in Syslog.

Table 2. Trouble report ID numbers and problems corrected in TAOS 9.0.3

TR ID	Problem corrected
TR 6001972	MAX TNT units running TAOS 9.0.2 would fail to behave correctly when the `framed-only` parameter in the default answer profile was set to yes.
TR 6001975	MAX TNT units with CSM3V slot cards installed issued Warning 179 messages.
TR 6002010	MAX TNT units sometimes sent invalid NMS messages.
TR 6002016	The MAX TNT units displayed inaccurate syslog LAN session info messages.
TR 6002052	MAX TNT units would incorrectly release a call when the channel associated with that call was unblocked.
TR 6002076	L2TP related parameters did not process RADIUS variables which were the maximum allowable length (253 characters).
TR 6002106	Prior to this release, some customers using Landel Mailbug (PDA) modem devices experienced high rates of disconnection (185/31) when attempting to connect to MAX TNT units with MultiDSP2 (MADD2) slot cards. The MultiDSP (MADD) modem firmware has been updated to version 1.4.6.
TR 6002142	The E1/R2 - links remained seized after a called party had terminated a call.
TR 6002172	MAX TNT units would leave an SS7/CIC in a connected state even after the connection had been closed.
TR 6002197	When MAX TNT units processed a `diag -t` diagnostics command, the correct system date and time was not displayed.
TR 6002202	Deleting routes on MAX TNT units could cause a Warning 179.
TR 6002216	A MAX TNT unit sometimes dropped packets when its MRU was set to 1500 and fragmentation occurred
TR 6009891	MultiVoice®: Prompting for and collecting DTMF with Break-ins caused periods of silence.
NA	In previous TAOS releases, a misleading cause code (DIS_REMOTE_END_HANGUP) was logged when a remote peer hung up an LCP connection. This TAOS release adds the more specific DIS_PPP_CLOSE_LCP_ALL_NCPS_CLOSE cause code, which is logged in this scenario.
NA	MultiVoice®: The E1/R2 links remained seized after a called party had terminated a call.
NA	MultiVoice®: The H.245 OLC procedure needed alteration so that it could handle the dialpad Gateway.
NA	MultiVoice®: Changes to one component on the shelf controller tntsr, for trunk upkeep, required maintenance.
NA	MultiVoice®: Buzzing noises were heard with voice announcements.

Table 2. Trouble report ID numbers and problems corrected in TAOS 9.0.3

TR ID	Problem corrected
NA	MultiVoice®: Some IPDC VOIP message problems occurred in Phase I testing.
NA	MultiVoice®: Could not complete a fax between another manufacturer's copying machines in high-latency mode.
NA	MultiVoice®: IPDC VoIP message problems reported during test.
NA	MultiVoice®: Warning 106 was reset on T1 ISDN lines running G.711 protocol.
NA	MultiVoice®: No media was available after RMPCs due to call transfer.
NA	MultiVoice®: An ipportmap leak was observed for TCP_CLEAR calls.
NA	MultiVoice®: Correct build errors were introduced by a modification request.
NA	MultiVoice®: Diagnostic command did not display E1 Framer statistics.

TAOS 9.0.2 enhancements and corrections

TAOS 9.0.2 includes the following enhancements and corrected certain problems from the previous release.

TAOS 9.0.2 enhancements

TAOS 9.0.2 includes the following modem manager enhancements:

Firmware versions for digital modems

The Conexant firmware versions for MAX TNT® Digital Modem cards include support for V.90, K56flex, K56plus, and all slower, standard modem speeds. This release includes the following Conexant firmware:

- Series56™ Digital Modem slot cards (also called CSM/1, TNT-SL-48MOD-S56) support V2.0982-K56_2M_DLP_CSM firmware.
- Series56™ II Digital Modem slot cards (also called CSM/3, TNT-SL-48MOD-SGL and TNT-SL-48MOD-S-C) support V5.8177 firmware.
- Series56™ III Digital Modem slot cards (also called CSMV/3, TNT-SL-48MODV3-S-C) support V5.8177 firmware.

Firmware versions for MultiDSP cards

This release includes the following Lucent firmware versions for MultiDSP cards:

- 48-port MultiDSP slot cards (TNTP-SL-ADI-C or TNTV-SL-ADI-C) support Lucent firmware.
- 96-port MultiDSP slot cards (APX8-SL-96DSP) support Lucent V0.1622.0 firmware.

TAOS 9.0.2 corrections

Table 3 lists the trouble report (TR) identification numbers and the problems that have been corrected in TAOS 9.0.2.

Table 3. Trouble report ID numbers and problems corrected in TAOS 9.0.2

TR ID	Problem corrected
TR 5452	MAX TNT units configured to support AppleTalk displayed a Warning 104.
TR 6000541	MAX TNT units with two installed modem slot cards and configured to support switched T1 did not successfully utilize the second installed modem slot card to initiate calls.
TR 6000657	MAX TNT units disconnected calls that required a callback style of authentication such as Call Back Control Protocol (CBCP).

Table 3. Trouble report ID numbers and problems corrected in TAOS 9.0.2 (continued)

TR ID	Problem corrected
TR 6000942	The filter in the `answer-default` profile is not overridden by the RADIUS user filter when the `use-answer-for-all-defaults parameter` was set to `yes.`
TR 6001097	The Frame Relay interface table sometimes displayed null values for the `ifInOctets` and `ifOutOctets` objects.
TR 6001167	MAX TNT units with AM36 slot cards sometimes experienced modems hanging in a `txPending` state.
TR 6001265	A zero-length `Framed_Route` RADIUS attribute caused a Warning 109 when received by a MAX TNT.
TR 6001300	A MAX TNT unit did not provide a correct value for RADIUS `ascend-third-prompt` (213) attribute.
TR 6001317	A MAX TNT unit reset and displayed FE1 when it attempted to process a call placed from another manufacturer's gateway.
TR 6001324	A MAX TNT unit could reset with a Warning 109 when after placing multiple H.323 calls.
TR 6001330	The receive connect Speed bit was being incorrectly set for Layer 2 Tunneling Protocol (L2TP) connections.
TR 6001360	A MAX TNT unit's `syslog` did not display the correct end-of-call messages for disconnected V.110, Personal Handyphone System (PHS), and modem calls.
TR 6001443	MAX TNT units did not report a username in the unit's `syslog` when an L2TP tunnel failed to establish.
TR 6001449	Simple Network Time Protocol (SNTP) configuration lacked the UTC+1300 settings for New Zealand during daylight savings time.
TR 6001481 *TR 6001691*	MultiDSP2 slot cards occasionally reset when RADIUS accounting experienced a timeout.
TR 6001507	There was no support for R1-inband signaling.
TR 6001523	MAX TNT units allowed a dial-in customer access to the terminal server even if `framed-only` was set to `yes`.
TR 6001600	MAX TNT units could cause blockage on E1 R2 channels.
TR 6001653	MAX TNT units loaded with a DS3-ATM slot card could report performance degradation.
TR 6001691	MAX TNT units could report a Warning 104 and report incorrect bandwidth for MPP sessions.
TR 6001692	The value of `boot-sr-version` parameter was null after a `system` profile was restored.
TR 6001704	MAX TNT units with an E1 interface could report an incorrect NAS-Port-Type value to RADIUS accounting.
NA	Slot cards occasionally reset when a core-dump warning occurred.

TAOS 9.0.0 corrections

Table 4 lists the trouble report (TR) identification numbers and the problems that have been corrected in TAOS 9.0.0.

Table 4. Trouble report ID numbers and problems corrected in TAOS 9.0.0

TR ID	Description
TR 2963	SNMP: The MAX TNT reported the incorrect callStatus MIB statistics for Personal Handyphone System (PHS) Internet Access Forum Standards (PIAFS) calls.
TR 3467	SNMP: The MAX TNT reported incorrect counts for eventTotalSessions.
TR 3808	SNMP: The `callStatusHighWaterMark` trap did not report the correct number of channels.
TR 3844	A memory leak warning (Warning 175s) occurred when AppleTalk routing was enabled.
TR 3976	SNMP: After the power cord was plugged in to turn on an AC unit, the MAX TNT did not generate PS state change traps.
TR 4043	The MAX TNT stopped taking fax calls after several hours of operation.
TR 4047	The MAX TNT did not report the correct service type for users with the V.120 service.
TR 4330	The throughput for the T1 and E1 FrameLine slot cards has been improved.
TR 4557	SNMP: The MAX TNT sometimes lost its default route during SNMP tests.
TR 4564	The `multicast-hbeat-src-add` field has been modified on the MAX TNT so that it is no longer ambiguous.
TR 4922	The `EchoSuppressToneDisable` parameter now disables the echo suppressor tone on all dialout modem calls.
TR 4966	RADIUS: On the MAX TNT, the NAS-Port attribute in RADIUS accounting now reports the correct value.
TR 5108	SNMP: When Connection profiles were deleted, the MAX TNT did not send Config-Change traps.
TR 5308	On the MAX TNT, issuing the `Control-C` command terminated a call during login.
TR 5532	RADIUS: Users failed IP Control Protocol (IPCP) authorizations because of a missing Framed-IP-Netmask attribute.
TR 5570	Data-over-Voice was not supported on a Series56™ Digital Modem (CSM/3V) slot card when the call arrived on an ISDN PRI line.
TR 5659	The unit experienced proxy ARP problems when two Ethernet ports were on the same subnet.

Table 4. Trouble report ID numbers and problems corrected in TAOS 9.0.0 (continued)

TR ID	Description
TR 5885	Updates to the `route-filter` parameter of an `ip-interface` profile did not take effect until the Ethernet interface associated with the profile was disabled and then enabled.
TR 250095	The `idle-logout` setting in the User profile did not function properly when a user was connected to a slot card on the MAX TNT.
TR 258826	SNMP: The Tunnel Table on the MAX TNT was incorrectly populated.
TR 258875	The MAX TNT failed to recognize Digital Private Network Signaling System (DPNSS) command-line interface SIS ID 50.
TR 1000219	Numerous ICMP `handled` type messages were reported daily to Syslog, causing logging problems.
TR 1000229	No remote alarm was generated when an E1 trunk with R2 signaling experienced multiframe loss.
TR 1000235	The MAX TNT did not send blocking messages to the switch when digital signal processor (DSP) resources became unavailable.
TR 6000021	On the MAX TNT, AM36 modems sometimes stopped working after the Analog Modem slot card received calls during its reset period.
TR 6000036	The MAX TNT did not list users in response to Finger queries after reboot.
TR 6000044	If a link was disconnected when the Ethernet `link-state-enabled` parameter was set to `yes`, the Ethernet filters on the Ethernet card were no longer applied.
TR 6000060	Traffic on the second channel in an Multilink Protocol Plus (MP+) call on the MAX TNT was refused.
TR 6000125	RADIUS: The `acct-session-id` value is now recorded with trailing zeros (0s). If the `rad-acct-client acct-radius-compat` parameter is set to `old-ascend`, the value for `acct-session-id` now contains a trailing zero. If the `rad-acct-client acct-radius-compat` parameter is set to `vendor-specific`, the `acct-session-id` value has no trailing zeros.
TR 6000169	After you manually rebooted the MAX TNT for the first time, the subnet route of dial-in users was not propagated via OSPF.
TR 6000201	Corrupt connection profiles did not save written parameters. The MAX TNT sometimes generated some factory default values when given the `save` command.
TR 6000351	Rlogin users were routed to the terminal server when Rlogin was disabled on the MAX TNT.
TR 6000354	RADIUS: If a call on a modem using RADIUS failed calling line ID (CLID) authentication four times in a row, the modem was put on the suspect list of suspect modems.

Table 4. Trouble report ID numbers and problems corrected in TAOS 9.0.0 (continued)

TR ID	Description
TR 6000496	Layer 2 Forwarding (L2F) sequence number management did not work properly with the Cisco IOS operating system.
TR 6000542	PPP sessions did not work on T1 or E1 FrameLine slot cards.
TR 6000448	SNMP: When an active RADIUS server was changed by means of SNMP, the change was not applied and the radiusServerChange trap (Type 18) was not generated.
TR 6000452	RADIUS: On the MAX TNT, the RADIUS Port-Limit attribute was not supported.
TR 6000466	Dial-in calls on a virtual router (VRouter) interface were advertised via OSPF on the global VRouter interface.
TR 6000550	The number of concurrent Telnet sessions was limited to 32.
TR 6000567	SNMP: The system did not generate a wanLineStateChange trap (Type 40) when a T1 or E1 line changed state from Trunk to Disabled, or vice versa.
TR 6000568	The MAX TNT reset with fatal error (FE) 29 if an incorrect flash-card operation (such as overwriting a directory with a file) was attempted.
TR 6000588	The MultiDSP card reset while attempting to establish a Point-to-Point Tunneling Protocol (PPTP) connection.
TR 6000609	RADIUS: On the MAX TNT, the TCP-clear host was not reported in RADIUS accounting for locally authenticated connections.
TR 6000626	Warning 179 occurred on the MAX TNT shelf controller when the system was writing the `IP-global` profile if `finger` was set to `yes`.
TR 6000634	The unit generated fatal error (FE) 2 on a Series56™ II Digital Modem (CSMx) slot card related to the command-line interface (CLI) terminal server process.
TR 6000709	Layer 2 Tunneling Protocol (L2TP) V.120 sessions authenticated by calling line ID (CLID) or the Dialed Number Information service (DNIS) were not established.
TR 6000715	RedHat Linux 5.1 clients running PPP-2.3.3 sometimes failed to establish an asynchronous (modem) connection over an L2TP tunnel to a Cisco L2TP network server (LNS).
TR 6000723	MultiVoice®: Poor-quality voice announcements were observed when using E1 as the voice trunk and signaling took place through IPDC from the softswitch.
TR 6000726	The shelf controller issued warning W179 when a slot was deactivated.
TR 6000760	Proxy ARP did not function correctly.
TR 6000866	OSPF reset each time a Connection profile was enabled or disabled.
TR 6001000	For callers using Microsoft NetMeeting, telephone calls between the MAX TNT unit and a regular telephone line were unsuccessful.

Notices and known issues in TAOS 9.0.6

Read these notices and known issues carefully before upgrading to TAOS 9.0.4 software.

Notices in TAOS 9.0.6

Be aware of the following noteworthy items related to the TAOS 9.0.6 release.

Notice of memory requirement in TAOS 9.0.6

To upgrade to TAOS 9.0.6, your MAX TNT unit must be equipped with the 32MB flash card. Contact your Lucent sales representative to purchase the 32MB flash card.

Notice of support for universal port on the 96-port MultiDSP slot card

The following corrects the *MAX TNT TAOS 9.0 Release Note*.

The 96-port MultiDSP slot card currently supports mixing voice and data services on the same card. The following services are supported:

- 96 modem sessions
- 96 Voice over IP (VoIP) sessions using either the G.729 or G.711 audio codec
- 96 VoIP and modem sessions, in any combination, with VoIP using either the G.729 or G.711 audio codecTAOS 9.0.6

This card supports a total of 96 ports.

Notice of a tunneling configuration requirement

If you are configuring Ascend Tunnel Management Protocol (ATMP), Layer 2 Tunneling Protocol (L2TP), or Point-to-Point Tunneling Protocol (PPTP) on a MAX TNT unit, you must set the System-IP-Address parameter of the IP-Global profile to specify a system IP address.

Notice of `allow-unencrypted-tunnel-password` parameter

The new `allow-unencrypted-tunnel-password` parameter was added to the Rad-Auth-Client subprofile of the External-Auth profile, which decides whether MAX TNT units should accept unencrypted tunnel passwords from RADIUS.

Prior to this release, MAX TNT units accepted only encrypted tunnel passwords. This release adds the `allow-unencrypted-tunnel-password` parameter, which, if enabled, permits the MAX TNT unit to accept encrypted and unencrypted passwords. The default for the `allow-unencrypted-tunnel-password` parameter is `NO`.

Note: RFC 2868 states that the tunnel password must be encrypted by RADIUS before being sent out.

Notice of parameter name changes in the `external-auth` profile

In TAOS 8.0.x, the `dnis-password` and `clid-password` parameters were added to the External-Auth profile. With these parameters, you were able to set RADIUS passwords for DNIS and CLID preauthentication.

In TAOS 9.0.0, the `dnis-password` and `clid-password` parameters were moved to the `password` subprofile of the External-Auth profile. The parameter names were also changed, as shown in the following sample subprofile (shown with default values):

```
[in EXTERNAL-AUTH:password-profile]
clid = Ascend-CLID
dnis = Ascend-DNIS
```

If your unit is configured with DNIS or CLID passwords, after upgrading from TAOS 8.x to TAOS 9.0.0, the unit will no longer recognize the `dnis-password` and `clid-password` values that were set in prior releases. As a result, dial-in users might experience a busy tone.

To restore the DNIS and CLID preauthorization passwords, you must apply the value of the `dnis-password` and `clid-password` parameters (set in earlier TAOS 8.x releases), to the new `dnis` and `clid` parameters as follows:

```
admin> read external-auth
EXTERNAL-AUTH read

admin> set password-profile dnis = secretdnis

admin> set password-profile clid = secretclid

admin> write
EXTERNAL-AUTH written
```

Known issues in TAOS 9.0.6

The following problems are known to exist in the TAOS 9.0.6 release:

- When two or more permanent virtual circuits (PVCs) are configured to use the same traffic shaper, one PVC can consume more than its proportional share of the shaper's transmit buffers, preventing other PVCs from transmitting at their maximum allowed bandwidth.

  As long as none of the PVCs exceed their respective bandwidth limits, traffic shaping performs as expected. However, if one of the PVCs exceeds its bandwidth limit, it can use all of the traffic shaper's pool resources, potentially preventing all throughput from other PVCs in the pool. In cases where more than one PVC in a pool is requesting more than its allotted benefit, the PVC with the most traffic has the highest probability of obtaining pool resources.
- As new features are added to each TAOS release, the amount of memory used by the operating system increases. MAX TNT units will therefore report less available memory with each subsequent release.
- Lucent Technologies does not recommend the use of traffic shaping in TAOS 9.0.6.
- With TAOS 9.0.6, when a long-term loss of communication to a RADIUS or call-logging server occurs (which results in loss of data), MAX TNT units report the event by generating a Warning 104 message.
- When you attempt to initiate terminal services such as TCP-clear, Rlogin, or Telnet using a scripted login, the MAX TNT unit might occasionally terminate calls abnormally,

displaying a dsconnect cause code 51 and progress code 40 in Syslog or RADIUS accounting records. This issue is aggravated by scripted logins when the responses are entered before the MAX TNT prompts input.

- In this release, the transmit rate of the Ethernet-3ND slot card decreases by as much 20 percent for 64-byte packets when the traffic passing through exceeds its maximum throughput rate.
- On an MAX TNT Asynchronous Transfer Mode (ATM) card, you must first disable an ATM connection before changing its virtual path identifier-virtual channel identifier (VPI-VCI) assignment. This limitation exists on all ATM slot cards, such as the OC3-ATM (copper) slot card (TNT-SL-OC3-C) and the OC3-ATM (fiber) slot card (TNT-SL-OC3-F).
- Multilink Protocol (MP) bonding of analog calls is supported, but some client modems and software might have compatibility problems.
- Configurable receive and transmit data rate limits are not supported on the MAX TNT unchannelized DS3-ATM slot card (TNT-SL-UDS3A). Configurable receive and transmit data rate limits *are* supported on the unchannelized DS3 Frame Relay slot card (TNT-SL-UDS3).
- `LAN-modem` profiles contain entries for 96 devices. For the 96-port MultiDSP card, all 96 entries in the profile are used. For 48-port Digital Modem cards—Series56™ (TNT-SL-48MOD-S56), Series56™ II (TNT-SL-48MOD-S-C), and Series56™ III (TNT-SL-48MODV3-S-C)— only the first 48 entries are used. For the 48-port MultiDSP card (TNTP-SL-ADI-C or TNTV-SL-ADI-C), every other entry in a LAN-Modem profile is used (odd ports only, from 1 to 95).
- Frame Relay and ATM switched virtual circuits (SVCs) are not supported in this release.