Lucent Technologies
Bell Labs Innovations



APX™/MAX TNT®

TAOS 10.0.1 Release Note

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APX 8000 upgrade and downgrade procedures

This section shows how to upgrade and downgrade the TAOS software of an APX 8000 unit.

Requirements and recommendations

These recommendations for upgrading TAOS units help ensure a smooth upgrade. If you must downgrade from this release to an earlier TAOS release, please see “APX 8000 downgrade instructions” on page 1-5.

Obtaining the TAOS 10.0.1 software

The TAOS 10.0.1 software for the APX 8000 consists of the following files:

Filename	Descriptions
`apxsrb.bin`	The boot loader. Both T1 and E1 loads use the same boot loader software. Install the appropriate boot loader for your release when upgrading or downgrading.
`apxrel.tar` and `apxrel2.tar`	Tar files (T1 load) that contain images for the shelf controller and all T1-compatible slot cards.
`apxrele.tar` and `apxrele2.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 10.0.1 software, see “Customer Service” on page iii.

To identify the software that you need based on the slot cards that have been physically installed in your chassis, refer to the following table. This table lists the contents of the tar files that contain the most commonly used slot-card images.

Minimally, you must load the first tar file (`apxrel.tar` or `apxrele.tar`). If your APX 8000 chassis contains additional slot cards (for example, a SWAN slot card), then you must also load the second tar file (`apxrel2.tar` or `apxrele2.tar`).

The contents of the APX 8000 TAOS 10.0.1 tar files are listed in Table 1-1.

Table 1-1. TAOS 10.0.1 APXC 8000 tar files

Filename	Description	Slot-card images
apxrel.tar	Shelf controller	apxsr
	Ethernet	tntenet2 tntenet3 tntenet3nd
	HDLC	tnthdlc2 tnthdlc2ec
	T1-specific images	tnt8t1 tntt3 tntut1 tntpctfit
	APX 8000 MultiDSP modem images	tntmadd tntmadd3
apxrel2.tar	STM-0	tntstm0
	UDS3	tntuds3
	DS3-ATM, DS3-ATM-2	tntds3atm tntds3atm2
	OC3-ATM, OC3-ATM-2	tntoc3atm tntoc3atm2
	SWAN	tntswan tntswan2
apxrele.tar	Shelf controller	apxsre
	Ethernet	tntenet2 tntenet3 tntenet3nd apxenet
	HDLC	tnthdlc2 tnthdlc2ec
	E1-specific images	tnt8e1 tntue1 tntpctfie
	APX 8000 MultiDSP modem images	tntmadd tntmadd3
apxrele2.tar	E3-ATM	tnte3atm
	OC3-ATM, OC3-ATM-2	tntoc3atm tntoc3atm2
	SWAN	tntswan tntswan2

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.

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 the `allow-password` permission in the user profile to save the configured passwords. If you do not have `allow-password` permission enabled, you will be prompted to confirm that you wish to save the configuration without passwords. If you do so and then restore the saved configuration, all passwords in the configuration are wiped out. The following commands executed on the APX 8000 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
```

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

Upgrade synchronization on systems with dual controllers

If you are logged into the primary controller and use one of the following commands, the effect is system wide:

Command	Description
`load`	Load a new software version.
`nvram`	Clear NVRAM.
`reset`	Reset the system, dropping all calls.

By default, when logged into the primary controller, these commands affect both controllers. However, you can specify command options to restrict the operation to a specific controller.



Note If you are logged into the secondary controller and use the `nvram` or `reset` command, the operation affects only the secondary controller. The secondary controller cannot reset or clear the memory of the primary controller.

APX 8000 upgrade instructions

These instructions show how to upgrade to TAOS 10.0.1 from an earlier TAOS version. The instructions apply to both single-controller and dual-controller APX 8000 units.



Note Under certain conditions, the `load tar` command might recognize no slot cards and load only the shelf controller image during the upgrade procedure. If this occurs, reset the system and load the tar files again. The second load tar command loads the appropriate slot-card images for the system.

Before you begin upgrading

Before upgrading the APX 8000 unit, follow these preliminary steps:

1 **Log into the hard IP address of the primary controller and save its configuration to a TFTP server.**

This step is optional but strongly recommended. For details, see "Saving the system configuration" on page 1-9.

2 **Verify that the `load-select` profile is configured to either automatically load only required binaries or to load only selected binaries.**

Upgrading an APX 8000 unit



Caution 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 steps in the order in which they are shown.

To upgrade an APX 8000 unit, proceed as follows.

1 **Log into the hard IP address of the primary shelf controller. Do not use the soft IP address. Use the `dir ip-interface` command to locate the primary controller's profile if needed to obtain the IP address.**

2 **Load the boot loader. For example:**

```
admin> load boot-sr network 10.10.10.10 apxsrb.binaries/apxsrb.bin
```



Note If you only need the first required tar file, continue with step 3. If you need both tar files, go to step 5.

3 **Load the tar file. For example:**

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



Note Use the `ls` command to see if any of the slot cards on your system do not have the equivalent file on the flash card. If a slot-card image is missing, continue with step 4; otherwise continue with step 6.

4 **Reset the system.**

For example:

```
admin> reset
```

The `reset` command on the primary controller resets both controllers, dropping all calls. The system should come up with the existing configuration intact. If so, go to step 6. Otherwise, if unexpected circumstances result with an incomplete configuration (such as, physically installed cards still not being reconfigured), continue with step 5.

5 **Load the tar files as follows:**

```
admin> load tar network 10.10.10.10 apxrel.tar apxrel2.tar
```

6 **Restore the system configuration (optional).**

For example:

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

7 **Reset the system as follows:**

```
admin> reset
```

8 **In the ip-global profile, set the system-IP-address parameter to 0.0.0.0.**

This step allows you to set the ip-address parameter in the primary ip-interface profile for the primary IP interface without interference from a global system-ip-address value.

9 **In the IP-INTERFACE/{ { shelf-1 slot-primary 0 } 0 } profile, set the ip-address parameter to *x.x.x.x*.**

Configure the primary IP interface. This IP address is always connected to the shelf controller that is functioning as primary.

10 **Set the system-IP-address parameter in the ip-global profile to the same IP address, *x.x.x.x*.**

The system-ip-address must always match the IP address of the unit's primary slot IP interface address.

11 **In IP-INTERFACE/{ { any-shelf any-slot 0 } 0 } set the ip-address parameter to a value that is not *x.x.x.x* if a soft IP address is desired.**



Note If your unit is configured with DNIS and CLID passwords, after upgrading from TAOS 9.0.x or 10.0.0 to TAOS 10.0.x, the unit no longer recognizes the dnis-password and clid-password values that were set in prior releases and dial-in users may experience a busy tone. See "Notice of parameter name changes in the External-Auth profile" on page 3-2 for additional information.

APX 8000 downgrade instructions



Note If you must downgrade, you must have serial access to the unit. See the APX 8000 TAOS 9.0 or 9.1 release note at http://www.lucent.com/support.

Because releases are not necessarily backward compatible, Lucent recommends that you always restore a backup configuration made under the previous version. To restore the previous software version (TAOS 9.0.x, 9.1.x, or 10.0.0), proceed as follows:

1 **Load the previous version of the boot loader.**

For example:

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

2 **Format the flash cards of both the primary and the secondary controller:**

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

To restore it to a previous software version prior to version 9.0.x, continue with step 3. Otherwise, continue with step 4.

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 apxrel.tar
```



Note Skip step 4.

4 **Load the previous version of the files.**

```
admin> load tar network 10.10.10.10 apxrel.tar apxrel2.tar
```

5 **Clear all profiles by entering the nvram command, for example:**

```
admin> nvram
```

6 **Log into the primary shelf controller via the serial connection. Open the ip-interface profile for the shelf controller and set the address.**

For example:

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

admin> set ip-address = 10.10.10.2/24

admin> write
IP-INTERFACE/{ { shelf-1 right-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/backup-config
```

8 **Reset the system. This step is required.**

For example:

```
admin> reset
```

APX 1000 and MAX TNT upgrade and downgrade procedures

This section shows how to upgrade and downgrade the TAOS software of an APX 1000 or MAX TNT unit.

Requirements and recommendations

These recommendations for upgrading APX 1000 and MAX TNT units help ensure a smooth upgrade. If you must downgrade from this release to a previous one, please see “APX 1000 and MAX TNT downgrade instructions” on page 1-11.

Obtaining the TAOS 10.0.1 software for the APX 1000

The TAOS 10.0.1 software for the APX 1000 consists of the following files:

Filename	Descriptions
apx1ksrb.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.
apx1krel.tar	Tar files (T1 load) that contain images for the shelf controller and all T1-compatible slot cards.
apx1krele.tar	Tar files (E1 load) that contain images for the shelf controller and all E1-compatible slot cards.

You can obtain the files you need from www.lucent.com/support. If you need technical assistance, see “Customer Service” on page iii.

To identify the software that you need based on the slot cards that have been physically installed in your chassis, refer to Table 1-2. This table lists the contents of the tar files that contain the most commonly used slot-card images.

You must load the tar file `apx1krel.tar` or `apx1krele.tar`. The contents of the APX 1000 TAOS 10.0.1 tar files are listed in Table 1-2.

Table 1-2. TAOS 10.0.1 APX 1000 tar files

Filename	Description	Slot-card images
`apx1krel.tar`	Shelf controller	`apx1ksr`
	Ethernet	`tntenet3nd`
	Hybrid Access	`tnthdlc2ec`
	T1 and T3	`apx1k24t1 tnt8t1 tntt3`
	MultiDSP	`tntmadd tntmadd3`
	DS3-ATM	`tntds3atm2`
	OC3-ATM	`tntoc3atm2`
	Serial WAN	`tntswan2`
`apx1krele.tar`	Shelf controller	`apx1ksre`
	Ethernet	`tntenet3nd`
	Hybrid Access	`tnthdlc2ec`
	E1	`apx1k24e1 tnt8e1`
	MultiDSP	`tntmadd tntmadd3`
	OC3-ATM	`ttntoc3atm2`
	Serial WAN	`tntswan2`

Obtaining the TAOS 10.0.1 software for the MAX TNT

The TAOS 10.0.1 software for the MAX TNT 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.

You can obtain the files you need from www.lucent.com/support. If you need technical assistance, see "Customer Service" on page iii.

To identify the software that you need based on the slot cards that have been physically installed in your chassis, refer to Table 1-3. This table lists the contents of the tar files that contain the most commonly used slot-card images.

Minimally, you must load the first tar file (tntrel.tar or tntrele.tar). If your MAX TNT chassis contains additional slot cards (for example, an E3-ATM slot card), then you must also load the second tar file (tnt rel2.tar or tntrele2.tar).

The contents of the MAX TNT TAOS 10.0.1 tar files are listed in Table 1-3:

Table 1-3. TAOS 10.0.1 MAX TNT tar files (Page 1 of 2)

Filename	Description	Slot-card images
tntrel.tar	Shelf controller	tntsr
	Ethernet	tntenet2 tntenet3 tntenet3nd
	HDLC	tnthdlc2 tnthdlc2ec
	T1-specific images	tnt8t1 tntt3 tntut1 tntpctfit
	MAX TNT MultiDSP modem images	tntcsmx tntcsm3v tntmadd
	SWAN	tntswan
tntrel2.tar	STM-0	tntstm0
	UDS3	tntuds3
	DS3-ATM, DS3-ATM-2	tntds3atm tntds3atm2
	OC3-ATM, OC3-ATM-2	tntoc3atm tntoc3atm2
	SWAN	tntswan tntswan2
tntrele.tar	Shelf controller	tntsre
	Ethernet	tntenet2 tntenet3 tntenet3nd apxenet
	HDLC	tnthdlc2 tnthdlc2ec
	SWAN	tntswan
	E1-specific images	tnt8e1 tntue1 tntpctfie
	MAX TNT MultiDSP modem images	tntcsmx tntcsm3v tntmadd

Table 1-3. TAOS 10.0.1 MAX TNT tar files (Page 2 of 2)

Filename	Description	Slot-card images
tntrele2.tar	E3-ATM	tnte3atm
	OC3-ATM, OC3-ATM-2	tntoc3atm tntoc3atm2
	SWAN	tntswan tntswan2

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.

If your unit is configured with DNIS and CLID passwords, after upgrading from TAOS 9.x to TAOS 10.0.x, the unit will no longer recognize the `dnis-password` and `clid-password` values that were set in prior releases and dial-in users may experience a busy tone.

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 the `allow-password` permission in the User profile to save the configured passwords. If you do not have `allow-password` permission enabled, you will be prompted to confirm that you wish to save the configuration without passwords. If you do so and then restore the saved configuration, all passwords in the configuration are wiped out. The following commands executed on the APX 1000 or 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*.

APX 1000 and MAX TNT upgrade instructions

These instructions show how to upgrade to TAOS 10.0.1 from TAOS version 9.0 or later. If you are not sure which version the system is running, enter the `version` command:

```
admin> version
Software version 9.0.1
```



Note Under certain conditions, the `load tar` command might recognize no 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 will load the appropriate slot-card images for the system.

Before you begin upgrading

Before you begin the upgrade procedure, 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 1-9.

2. **Verify that the `load-select` profile is configured to either automatically load only required binaries or to load only selected binaries.**

Upgrading an APX 1000 or MAX TNT unit



Caution 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 or higher, continue with step 4. Otherwise, continue with step 3.

3. **Load the tar file.**

   For example:

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



Note Skip step 4.

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 this release, the `dnis-password` parameter in the `password-profile` subprofile of the `external-auth` profile has been changed to `DNIS`.

APX 1000 and MAX TNT downgrade instructions

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

Note If you must downgrade, you must have serial access to the APX 1000 or MAX TNT. See the *MAX TNT TAOS 9.0 Release Notes* at `http://www.lucent.com/support`.

Downgrading an APX 1000 or MAX TNT unit

To restore the previous software version (TAOS 9.0.x, 9.1.x, or 10.0.0), 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. Otherwise proeed to step 4.

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:**

   ```
   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 via 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
```

Enhancements and Corrections in TAOS 10.0.1

2

TAOS 10.0.1 introduces enhancements and corrects problems from the previous release.

TAOS 10.0 enhancements

TAOS 10.0 includes the following enhancements.

Firmware versions for digital modem cards

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

- Series56 II Digital Modem slot cards (also called CSM/3, TNT-SL-48MOD-SGL and TNT-SL-48MOD-S-C) support V5.817 firmware.
- Series56 III Digital Modem slot cards (also called CSMV/3, TNT-SL-48MODV3-S-C) support V5.8175 firmware.

Firmware versions for MultiDSP cards

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

- 48-port MultiDSP slot cards (TNTP-SL-ADI-C or TNTV-SL-ADI-C) support Controller V0.1.66, Modem DSP V0.1905.0, and VoIP DSP V3.0.51 Lucent firmware.
- 96-port MultiDSP slot cards (APX8-SL-96DSP) support Controller V0.1.66, Modem DSP V0.1905.0, and VoIP DSP V3.0.51 Lucent firmware.
- 240-port MultiDSP slot card (APX-SL-DSP-3-L)support Controller V0.1.66, Modem DSP V0.1905.0, and VoIP DSP V3.0.51 Lucent firmware.
- 288-port MultiDSP slot card (APX-SL-DSP-3)support Controller V0.1.66, Modem DSP V0.1905.0, and VoIP DSP V3.0.51 Lucent firmware.

Support for the 288-port and 240-port MultiDSP card

TAOS 10.0.1 supports the 288-port MultiDSP slot card (APX-SL-DSP-3) and the 240-port MultiDSP slot card (APX-SL-DSP-3-L) on the APX 8000 and APX 1000. For complete information about the 288-port and 240-port MultiDSP card for the APX 8000, see the *MultiDSP Slot Gard Guide for APX 8000*. For information about enhancements to the 288-port and 240-port MultiDSP card for the APX 1000, see the TAOS 10.0.0 Release Note. These documents are available at `http:www.lucent.com/support`.

Support for the APX Ethernet slot card

The APX Ethernet slot card for APX 1000, APX 8000, and MAX TNT units has two full-duplex 10/100Mbps Ethernet ports with a high packet-per-second throughput to support Voice over IP (VoIP). An APX Ethernet card supports autonegotiation: Ethernet devices exchange information and agree on a communication speed and duplex mode.

For complete information about the APX Ethernet card, see the *APX™/MAX TNT® Ethernet Slot Card Guide*, available at `http:www.lucent.com/support`.

Problems corrected in TAOS 10.0.1

Table 2-1lists change requests that have been resolved in this release.

Table 2-1. Change request resolved in TAOS 10.0.1

CR #	Description
N/A	The following features were not supported on the 288-port MultiDSP slot card (APX-SL-DSP-3) and the 240-port MultiDSP slot card (APX-SL-DSP-3-L): ■ IP in IP ■ Modem call logging ■ Synchronous TCP-clear ■ V.92 quick connect and modem on hold
N/A	Forty percent of calls on TAOS units were connecting at only 1200bps.

Notices, Known Issues, and Caveats in TAOS 10.0.1

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Notices in TAOS 10.0.1

The following notices provide important information regarding TAOS 10.0.1 software and hardware:

Notice of TAOS license and upgrade changes

Starting with the release of TAOS 9.1, the following changes are now in effect for TAOS base software and TAOS software upgrades, service, and maintenance.

Price change for base TAOS software

With the release of the TAOS 9.1, MAX™ 3000, MAX™ 6000, MAX TNT, and APX 8000 hardware and TAOS software are priced separately. The TAOS software license is now a mandatory item for any new order. The license grants licensees the right to use the base TAOS 9.1 software on the specific platform purchased.



Note The right to upgrade to a subsequent TAOS minor or major software release that includes new operating system software enhancements is no longer included as part of the base TAOS software license.

Price change for upgrades and maintenance to TAOS 10.0.1 software

Upgrades to TAOS 10.0.1 software and subsequent releases for the MAX™ 3000, MAX™ 6000, MAX TNT, APX 1000, and APX 8000 platforms are available through Lucent Worldwide Services as part of an annual software maintenance contract. These contracts are priced separately for each platform and include the following software and services:

- TAOS software updates, upgrades, and support
- TAOS software options (or *hash codes*), updates, upgrades, and support
- Remote technical support

- Hardware maintenance and return



Note Only customers with an established software maintenance contract are authorized to upgrade designated TAOS-enabled units to TAOS 10.0.1 and to download the required TAOS 10.0.1 software files.

Distribution change for TAOS 10.0.1 software

TAOS 10.0.1 and subsequent general-availability TAOS software releases are no longer available from `ftp.ascend.com`. Upgrades to TAOS 10.0.1 and all subsequent releases and updates (maintenance releases) are available instead from the Lucent OnLine Customer Support at `http://www.lucent.com/support`.

TAOS software license agreement change

Lucent Technologies is introducing a new software license agreement that grants you a personal, nontransferable, nonexclusive right to use TAOS 10.0.1 in object code form only, and its accompanying documentation. The agreement prohibits you from loading or using TAOS software on any unit of Lucent equipment other than the unit for which you purchased the software, unless otherwise agreed upon in writing by Lucent.

Use of TAOS software on any equipment other than that for which it was obtained, or any material breach of these conditions, immediately and automatically terminates the license. Lucent reserves the right to pursue all available legal remedies to enforce the terms and conditions of the software license.

Notice of discontinued support for multishelf functionality

Multishelf functionality is not supported in TAOS 10.0.1

Notice of new allow-unencrypted-tunnel-password parameter

A new `allow-unencrypted-tunnel-password` parameter was added to the external `auth:rad-auth-client` subprofile. The setting determines whether MAX TNT units accept unencrypted tunnel passwords from RADIUS.

Prior to TAOS 9.0, TAOS units always accepted unencrypted tunnel passwords. TAOS 9.0, added the requirement that all tunnel passwords be encrypted. The TAOS 10.0.1 release leaves the default behavior the same as in TAOS 9.0, but adds the additional `allow-unencrypted-tunnel-password` parameter which, if enabled, makes the TAOS unit accept unencrypted passwords, as in prior TAOS 9.0 releases. The default for the `allow-unencrypted-tunnel-password` parameter is `NO`.

Notice of parameter name changes in the External-Auth profile

In TAOS 8.0, 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, 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 and CLID passwords, after upgrading from TAOS 8.x to TAOS 9.0, the unit no longer recognizes the `dnis-password` and `clid-password` values that were set in prior releases and 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
```

Notice of change in supported values for the signaling mode

After you upgrade a TAOS unit that is configured as a MultiVoice gateway, the TAOS unit might generate a `bad value` error message for the value assigned to the `signaling-mode` parameter in the `line-config` subprofile of T1 profile. This situation occurs when you upgrade the TAOS unit from either of the following limited availability releases to TAOS 10.0.1:

- TAOS 8.0-103.x
- TAOS 8.0-118.x

When these two limited availability releases were compiled, the supported values for the Signaling-Mode parameter were defined as enumerated values, rather than hardcoded values, as is done for TAOS 9.0. Applying a saved configuration from either limited availability release to TAOS 9.0 causes the `bad value` error.

To correct this error, you must reset the value of the `signaling-mode` parameter after applying the saved configuration and reinitializing the TAOS unit.

Notice about MultiDSP slot cards

In TAOS 10.0.1, you can combine 48-port and 96-port MultiDSP slot cards in a TAOS unit for V.90 and ISDN dial-up termination.

Notice about a change in the terminal server password length

The current version of the *APX 8000/MAX TNT Reference* indicates a maximum value of 64 characters for the Password-For-Direct-Access parameter. However, the maximum allowable password length is 21 characters.

Notice of TAOS interoperability with SS7 signaling software

The TAOS unit supports two separate software licenses for integrating the units into Signaling System 7 (SS7) networks:

- Access SS7 Gateway Control Protocol (ASGCP). This method of integration enables the TAOS unit to terminate data calls in an SS7 network. The signaling gateway must be Internet call diversion (ICD) for softswitch (formerly ASG).

- IP Device Control (IPDC) protocol. IPDC is a third-party proprietary protocol. This method of integration enables the TAOS unit to terminate both voice and data calls. The signaling gateway can be ICD for softswitch or Lucent Softswitch.

TAOS 10.0.1 supports interoperability with sections of IP Device Control (IPDC) 0.15.1, including PRI tunneling.

Notice of discontinuance of configurable RADIUS port and ID space

In TAOS 8.x, the default settings for User Datagram Protocol (UDP) source ports and ID spaces for communication with a RADIUS server specified the use of a unique source port for each card and a distinct ID space for both authentication and accounting requests. However, the unit could be configured to use a single source port and ID space systemwide to accommodate certain RADIUS server daemons that had a system-unique requirement.

Because no known RADIUS servers continue to maintain this requirement, and because the unit's port density makes the use of a single port and ID space undesirable, with TAOS 10.0.1, the TAOS unit always uses port-unique source ports and always sends RADIUS authentication and accounting requests with distinct RADIUS IDs. The following parameters are therefore no longer supported and have been removed from the `external-auth` profile:

```
[EXTERNAL-AUTH]
rad-id-space = distinct
rad-id-source-unique = port-unique
```



Note The `rad-ip-space` and `rad-id-source-unique` parameters no longer appear in the `external-auth` profile with TAOS 10.0.1. If you downgrade the unit to an earlier release, the parameters revert to their default values for that release.

Notice of discontinuance of software support

Software support has been discontinued for the MAX TNT Ethernet-0 slot card (TNT-SL-E10), the Fast (100MB) Ethernet-1 slot card (TNT-SL-E100), and the older MAX TNT Hybrid Access slot cards (TNT-SL-HA128 and TNT-SL-HA192).

Notice of deprecated management features

Use of the `if-admin` diagnostic command is deprecated. The functionality that was provided by the `-d` (down) and `-u` (up) options of the command is now provided by `read`, `set`, and `write` operations on one of the following profiles:

- The `admin-state-perm-if` profile for permanent interfaces such as a nailed interface
- The `admin-state-phys-if` profile for physical interfaces such as a T1 line

The other options of the `if-admin` command are not supported.

Use of the `call-log-radius-compat` parameter in the `call-logging` profile is deprecated in this software version.

The `callActiveIfIndex` and `callStatusIfIndex` objects in the call MIB are not supported in this software version.

This following objects are no longer supported in this software version:

- The `lmodem.mib`

- The `resetStat` group in `ascend.mib`
- The `consoleTable`, `doTable`, and `hostStatusTable` in `ascend.mib`

Notice of discontinuance of support for AppleTalk and ARA routing

TAOS 10.0.1 does not support for AppleTalk, which includes the AppleTalk Remote Access Protocol (ARAP) and AppleTalk Control Protocol (ATCP) for the TAOS unit.

A TAOS unit can no longer act as an AppleTalk router, but a Macintosh workstation can continue to access the Internet and IP-based services by means of the TAOS unit.

This release discontinues support for the following profiles and subprofiles that are associated with AppleTalk and AppleTalk Remote Access (ARA):

- `atalk-global` profile
- `atalk-interface` profile
- `answer-defaults:ara-answer` subprofile
- `connection:ara-options` subprofile
- `connection:appletalk-options` subprofile

In addition, in the `connection` profile, the `encapsulation-protocol` parameter can no longer be set to `ara`.

Notice concerning call signaling support on T1/E1 slot cards

When configuring call signaling support on E1 trunks:

- Do not configure R1/R2 multifrequency signaling and R2 Dual-Tone Multifrequency (DTMF) signaling for different trunks on the same E1 slot card.
- When configuring call signaling on E1 trunks, the TAOS unit loads only one tone look-up table per slot card. The tone look-up tables for R1/R2 MF and R2 DTMF signaling are unique to the call signaling type specified by the `signaling-mode` parameter. The multifrequency tone look-up table will not support DTMF signaling, and the DTMF tone look-up table will not support R1/R2 multifrequency signaling.

When configuring call signaling support on T1 trunks:

- You can configure ISDN and Feature Group D (FGD) signaling for different trunks on the same T1 slot card.
- Do not configure inband, robbed-bit signaling and Feature Group D (FGD) signaling for different trunks on the same T1 slot card. The tone look-up tables for FGD are unique to the call signaling requirements for Access Tandem switching.
- Do not configure inband multifrequency signaling and inband Dual-Tone Multifrequency (DTMF) signaling for different trunks on the same T1 slot card. The tone look-up tables are unique to the call signaling type specified by the `signaling-mode` parameter. The multifrequency tone look-up table will not support DTMF signaling, and the DTMF tone look-up table will not support multifrequency signaling.

Known issues in TAOS 10.0.1

The following known issues affect TAOS 10.0.1 software and hardware:

Known issue using multiple OC3-ATM2 slot cards configured for OC3 ingress

If multiple OC3-ATM2 slot cards are configured for OC3 ingress, traffic is unable to pass through the egress slot card.

Known issue sorting call routing types

The new approach for finding a call routing destination device can be done in two steps. The first stage identifies the best-fit destination slot, which is based on the nature of the call and the specific call-route profiles. The second stage identifies the best-fit device within that specific slot. The new approach distributes the call-routing algorithm to the slot cards, instead of keeping it centralized on the shelf controller. In this manner, the source slot selects the destination slot (based on the `call-route` profiles) and the destination slot card selects the destination device of the call route (based on `call-route` profiles).

This is a performance change. When a calls comes in, the shelf controller has to do time-critical work to identify where the call should go. This new scheme lets the shelf controller choose the best slot card, and that slot selects a port on the card to handle the call.

Known issue receiving warning messages when saving profiles

From memory, if you modify `call-route` profiles while the system is taking calls, you may receive occasional warning messages (W179).

Known issue handling full BGP Internet routing table

The TAOS unit may not route reliably if Border Gateway Protocol (BGP) is set to accept and inject the full Internet routing table (which currently consists of approximately 92,000 routes). Since the TAOS units are not designed to be full-fledged Internet core routers, this is not considered to be a major problem. In order to prevent this situation, future versions may have an explicit limit beyond which the unit will not accept additional routes. It is currently recommended that you set BGP to accept a limited number of routes if it would otherwise be receiving too large a routing table.

Known issue with 96-port MultiDSP slot card

When using the G.711 audio codec, Lucent recommends NOT to use two frames per packet when you expect to have a fully loaded network with 96 active calls. You should do one of the following:

- Set the `frames-per-packet` parameter to 4 or higher in the `Voip` profile.
- Leave `frames-per-packet` set to 2 (the default), but disable DSPs on the card with the `mdmdisable` command. (Issue the `? mdmdisable` command for help on this command.)

```
admin> mdmdisable 1 5 73 24
disable DSPs from 73 - 96
```

To reenable the DSPs, use the `mdmenable` command.

```
admin> mdmenable 1 5 73 24
enable DSPs from 73 - 96
```

The DSPs will remain disabled, even after you reset the chassis. If `2 Frames Per Packet` are maintained and the DSPs are not disabled, voice quality may become degraded after 80 or 78 active calls.

Caveats in TAOS 10.0.1

The following caveats apply to TAOS 10.0.1:

- Hot-standby redundancy was a new feature in 10.0.0. There are known issues with this feature that are being addressed in upcoming maintenance releases. In particular, shelf controller failovers on a hot-standby system in a high call rate environment (that is, a large number of calls per second) might exhibit these issues. In addition, rapid failovers from one shelf controller to the other might also trigger these issues. Failovers of a hot-standby system in an environment with typical call rates and infrequent switchovers are operational.
- When a long-term loss of communication to a RADIUS or call-logging server occurs (which results in loss of data), the TAOS unit reports 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 TAOS unit might occasionally terminate calls abnormally, displaying a 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 TAOS prompts input.
- Before changing an ATM connection's VPI-VCI assignment, you must disable the connection on a OC3 (Copper) ATM slot card (TNT-SL-OC3-C) or OC3 (Fibre) ATM slot card (TNT-SL-OC3-F).
- Multilink Protocol bonding of analog calls is supported, but some client modems and software may have compatibility problems.
- Configurable receive and transmit data rate limits are not supported on the 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).
- The `lan-modem` profiles contain entries for 96 devices. For the 96-port MultiDSP slot 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).
- Virtual path shaping is supported on first-generation slot cards only. This feature is not supported on second-generation OC3-ATM and DS3-ATM cards.
- When using a MultiDSP slot card and the IPDC protocol to generate remote country-specific call progress tones (for example, dial tone, alerting, busy, network busy and unobtainable), the ability to send the country tag locally in the NSUP is no longer supported.
- The Internetwork Packet Exchange (IPX) protocol is not supported in this release.

- Profiles and parameters in the user interface related to the following call types have not been tested and are not supported in this release:
  - BACP
  - CBCP
  - Multilink frame relay (MFR)
  - PHS on MultiDSP
  - Route to multiple FR PVCs on NI
  - frame relay SVCs
  - ATM SVCs
  - ASGCP
  - PPTP
  - ATMP
  - L2TP dial-out calls
  - X.25
  - X.75
  - SLIP
  - CLSLIP
  - Multicast