

Release Notes

Software Release 1.4

Sample: R. C. Ayeras

TB200 Local Exchange Gateway

TB50 Integrated Access Device (IAD)



This document contains proprietary and confidential information belonging to TollBridge Technologies, Inc. The contents of this document are protected by federal and international copyright law. No part of this document may be disclosed to third parties, copied, or duplicated in any form, transcribed, stored in a retrieval system, or translated into any human or computer language or format in any form or by any means, electronic, mechanical, magnetic, manual or otherwise, in whole or in part, without the prior written permission of TollBridge Technologies, Inc.

TollBridge Technologies, Inc. products are covered by U.S. and foreign patents, issued and pending. Information in this document supersedes information provided in all previously published material.

Copyright 2000 by TollBridge Technologies, Inc.

TollBridge, the TollBridge logo, TollView and the TollView logo are trademarks of TollBridge Technologies, Inc. All other trademarks used herein are the property of their respective owners.

TollBridge Technologies, Inc.

3121 Jay Street

Santa Clara, CA 95054

Tel: 1.408.585.2100

1.877.486.5527

Fax: 1.408.585.2101

www.tollbridge.tech.com

Technical Product Support: 1.888.561.7647

All rights reserved.

Specifications subject to change without notice.

Chapter 1	
Executive Summary	1
New Capabilities	1
Enhanced Capabilities	1
CLI Commands	3
Chapter 2	
New Capabilities	5
Ground Start	5
Resource Management	5
EOC Agent	5
Gain Control	6
set analogline	6
G.726 to G.711 Fallback For Modem Detection	7
TB55 IAD Support	7
CR-408 Support	7
GR303 Certification	8
Lucent	8
Nortel	8
Chapter 3	
Enhanced Capabilities	9
Increased IAD Capacity	9
Adaptive Jitter Buffer	9
G.168 Echo Cancellation	9
EOC DS1 Loopback	9
Hot Swap	10
Voice Module	10
DS1 Module	11
DS3 Module	12
Voice Module Redundancy	12
Element Management System	13
Configuration Management	13
Image Management	13
Reset TB200 and IADs	13
Redundancy Support	13

Alarm Management	14
Display Status	14
Identify True GR303 State	14
View and Modify DS1 and DS 3	14
Display Preferences	14
SNMP	15
SNMP Traps	15
Configuration Save/Delete	16
Module and System Reset	16
Dynamic CBR Bandwidth Management	16
Resource Manager API	16
set voice path	17
set cpe	17
set crv	17
Chapter 4	
New and Enhanced CLI Commands	19
New CLI Commands	19
backupvoice	19
revert	21
cfgload	21
Enhanced CLI Commands	23
alarm	23
Chapter 5	
System Issue Resolution	25
Chapter 6	
Hardware, Software, and Firmware Compatibility	29
Chapter 7	
Download Software	33
Upgrade	33
Upgrading Image Files	33
Step 1: Define the TFTP Server	34

Step 2: Specify the Image File Name	34
Step 3: Download the Image or Configuration File	35
Step 4: Set the Downloaded Image as the Active Image	37
Step 5: Reset the Module	38

Executive Summary

New Capabilities

- **Ground Start** Allows access to more features of services including Key Systems and PBX Systems through live signaling interface.
- **Gain Control** Controls the gain level on the IAD for various telephones, Key Systems, and PBX Systems.
- **G.726 to G.711 Fallback For Modem Detection** Faster voice connection speed — automatic fallback to G-711 when necessary, then revert to faster G.726.
- **TB55 IAD Support** Support for new Tollbridge IAD, an integrated SDSL IAD. Support includes ground start.
- **CR-408 Support** Support for Copper Mountain IAD, an integrated SDSL IAD.
- **GR303 Certification** TB200 is certified compliant with Lucent 5E Class 5 switches, and Nortel DMS Class 5 switches — TB200 supports all Class 5 features.

Enhanced Capabilities

- **Increased IAD Capacity** EachVoice module now supports 24 IADs, a maximum of 64 calls per Voice module.
- **Adaptive Jitter Buffer** Change jitter buffer size per network latency — improves voice quality.

- **EOC DS1 Loopback** Supports activation and release of near-end DS1 frame-based loopback — helps facilitate problems during GR303 based service turn-up.
- **Hot Swap** Supports the insertion and removal of live modules:Voice, DS1, and DS3 — improved system maintenance and upgrade.
- **Voice Module Redundancy** Capability to provision aVoice module as a spare module — increases system reliability and uptime.
- **Element Management System**
 - **Configuration Management**
 - **Image Management**
 - **Reset TB200 and IADs**
 - **Redundancy Support**
 - **Alarm Management**
 - **Display Status**
 - **Identify True GR303 State**
 - **View and Modify DS1 and DS3**
 - **Display Preferences**
- **SNMP**
 - **SNMP Traps**
 - **Configuration Save/Delete**
 - **Module and System Reset**
- **Sending Notifications (Traps)** Allows using HP OpenView alarm viewers from NOC NMS.
- **Dynamic CBR Bandwidth Management** Traffic load supported with CBR bandwidth allocation.
- **Resource Manager API** The functions of the Administration module that control the TB200 are improved:

CLI Commands

New commands:

- **backupvoice**
TB200 configuration: Designate one Voice module as a spare module.
- **revert**
Re-provision IADs to a decommissioned Voice module that has been replaced.
- **cfgload**
Download a specified file, backup or restore the system database.

Enhanced commands:

- **alarm**
Provision the severity of the alarm.

New Capabilities

Ground Start

Ground start is now supported, which provides access to all services by Key systems and PBX systems that require ground start. This is implemented on the IADs (TB50 IAD, TB55 IAD), and the TB200. Ground Start permits direct inward dial and answer supervision with more reliable signaling.

Ground start is provisioned with the CLI command `set analogline` (page 6).

When provisioned for ground start (termination is set at the local side), the switch is informed to update. When the switch is provisioned for ground start, the Resource Manager is informed to provision the analog line.

Following are the items that support ground start.

Resource Management

Ground-start as a valid line provisioning parameter, and information is delivered to the IAD:

- Accept and check for proper gain level provisioning of transmit and receive for analog line provisioning (“Gain Control” on page 6).
- Notify SNMP and EOC agent for provisioning if service type is changed.
- Accept the change of loop service type from EOC and inform IAD.

EOC Agent

Embedded Operations Channel (EOC) adds support for ground-start service, and allows the switch to change the line service type from loop start to ground start,

and vice versa. The IAD receives the new analog line provisioning messages from the resource manager.

All the updates of the components in TB200 are compatible with the changes for the Class 5 switch.

Gain Control

This feature provides gain control settings on the IADs (TB50 and TB55), for both transmitting and receiving. The resolution of the gain settings is 0.1 dB. The range for receive gain is +3.0 dB to -6.0 dB; the range for transmit gain is 0.0 dB to -9.0 dB. This is available for both loop start and ground start services.

Gain control is provisioned through the CLI command `set analogline`.

set analogline

Following are examples of how to use `set analog` for gain control.

For ground start:

```
set analogline 7 1 groundstart g711 tx 2.8 rx -8.5
```

For loop start:

```
set analogline 7 1..8 loopstart g711 tx 1.0 rx -3.2
```

Description of the syntax follows.

Syntax

```
set analogline {<cpeId> | <cpeIdRange>} {<lineNo> | <lineNoRange>}...  
[<sigType>] [<coding>] [tx <txGain>] [rx <rxGain>]
```

<cpeId> The unique identification number of a IAD.

<cpeIdRange> A range of IAD identification numbers.

<lineNo> An analog line number on a IAD.

<lineNoRange> A range of analog line numbers.

<sigType> The type of signaling to be used on the IAD's analog line. Allowed values:

loopstart (default value)
groundstart

<coding> The type of coding to be used on the IAD's analog line. Current values allowed are:

g711
g726 (default value)

tx <txGain> The range of the transmit gain is -6.0 dB through +3.0 dB in 0. dB increments. The default setting is -3.0 dB.

rx <rxGain> The value of the receive gain is -9.0 dB through 0.0 dB in 0.1 dB increments. The default is -3.0 dB.

G.726 to G.711 Fallback For Modem Detection

Fallback increases the connect rate for V.90 modems, and provides faster voiceband connection speeds.

The TB200 now auto-detects when a modem is on the line (as opposed to voice) and changes the operating mode of that call to G.711 (uncompressed, 64 kbps), which is slower than G.726 (compressed, 32 kbps). The duration of the fallback to G.711 is only for the duration of the call. When the call is terminated, the line reverts to G.726, the originally provisioned encoding type.

TB55 IAD Support

The TB55 IAD is a new IAD, in which SDLS is fully integrated. TB55 IAD supports both ground start and loop start.

CR-408 Support

The Copper Mountain CR-408, an integrated IAD CR-408 in which SDSL is integrated, is supported.

Note: CR-408 only supports loop start; it does not support ground start.

GR303 Certification

The TB200 is certified with Lucent and Nortel GR303 standards for Class 5 switches

Lucent

The TB200 is Lucent GR303 certified to be compliant with all varieties of 5E Class 5 switches. All CLASS features are now supported to work over the TB200 that is connected to a Lucent 5E switch.

Nortel

The TB200 is Nortel GR303 certified to be compliant with all varieties of DMS Class 5 switches, including DMS 10, DMS 100, and DMS 500. All CLASS features are now supported to work over the TB200 that is connected to a Nortel DMS Class 5 switch.

Enhanced Capabilities

Increased IAD Capacity

IAD capacity is now increased: 24 IADs (TB50 IAD and TB55 IAD) are supported per Voice module, with a maximum of 64 calls.

To support the requirements for over-subscription and multiple voice paths per Voice module, a variable bit rate (VBR) scheme is implemented. For more information about VBR, see “Dynamic CBR Bandwidth Management” on page 16.

Adaptive Jitter Buffer

The jitter buffer size can be adjusted per network latency. This reduces voice packet dropouts, and improves voice quality.

G.168 Echo Cancellation

Echo cancellation is enhanced by increasing span (echo tail) to 16 ms. This improves Private Branch Exchange (PBX) performance by reducing voice path latency

EOC DS1 Loopback

EOC is enhanced to support the activation and release of near-end DS1 frame-based loopback by local exchange. This feature helps facilitate isolation of cabling, and configuration problems during GR303 based service turn-up.

Hot Swap

The Voice, DS1, and DS3 modules can be hot swapped (removed and inserted) in a live TB200 without affecting the operation of the TB200. This reduces downtime when a module is being replaced.

Administration and Switch modules are not supported for hot swap.

Caution: Do not remove or insert Administration modules and Switch modules in a live TB200; that will cause the TB200 to reset.

Voice Module

The benefits of hot-insertion and hot-removal of the Voice module follows.

Hot Insertion

- Configuration data is downloaded.
- Any outstanding equipment alarm on the Voice module is cleared.
- If Voice module redundancy is set up:
Subtending IADs are moved back from the sparing Voice module.
- If redundancy is not set up:

All IADs that are terminated on that Voice module, Embedded Operations Channel agent (EOC) sends the call reference value as in service (CRV INS) to the switch.

- If DS1 module is present:

DS1 module is initialized.

DS1 framers are reset.

DS1 facility alarm is enabled.

The EOC agent sends CRV INS to the switch.

Hot Removal

- DS1 Framers are still operative.
- Equipment alarm is set on the Voice module.
- DS1 facility alarm is suppressed.

- If Voice module redundancy is set up:
Subtending IADs are moved to the standby Voice module.
- If no redundancy:
EOC sends CRV *out of service* (OOS) to the switch.
- For each SS1 span in an IG that is currently INS, the EOC agent sends DS1s OOS to the switch.
- Call clearing (maximum 192 calls).

DS1 Module

The benefits of hot-insertion and hot-removal of the DS1 module follows.

Hot Insertion

- Configuration data is download.
- Equipment alarm is cleared.
- DS1 module is initialized.
- DS1 facility alarm is enabled.
- The EOC agent sends DS1 INS to switch.

Hot Removal

- Equipment alarm is set.
- DS1 facility alarm is filtered.
- Performance Monitoring suppressed.
- The EOC agent sends DS1 OOS to switch.
- Call clearing (maximum 96 calls).

DS3 Module

The benefits of hot-insertion and hot-removal of the DS3 module follows.

Hot Insertion

- Equipment alarm is cleared.
- DS3 module is initialized.
- The EOC agent sends CRV INS to switch.
- Enable DS3 facility alarm.

Hot Removal

- Equipment alarm is set.
- DS3 facility alarm is filtered.
- Performance Monitoring suppressed.
- The EOC agent sends CRV OOS (max. 2048/IG) to switch.
- Call Clearing (maximum 668 calls).

Voice Module Redundancy

The process of moving voice paths to a spare Voice module is now automated, which improves system availability and uptime.

A new CLI command, **backupvoice**, can designate one Voice module as a spare in the TB200 configuration.

If a Voice module fails, IADs (such as TB55 IAD) voice paths that connect through the failed module are automatically moved to the spare module. An equipment alarm is generated on the failed Voice module, and the “backup” designation is removed from the now active module.

The new CLI command, **backupvoice revert** (page 19), allows the IADs to be provisioned back to the original module after the failed Voice module has been repaired.

For details about the CLI commands, refer to “backupvoice” on page 19.

Note: There can only be one spare Voice module, which can not be utilized in normal operation. However, the accompanying DS1 module (also known as Quad-T1) can support active calls.

Element Management System

The Element Management System (EMS), a graphical user interface, is enhanced with the following features.

Configuration Management

Ability to graphically view and save high level configurations includes date/time of last operation, last operation and source, delete and save runtime configuration to flash.

Image Management

Images can be managed on TB200 modules and IADs, including view, download, and specifying active version of software.

Reset TB200 and IADs

TB200 system and modules, and IADs, can be reset through EMS.

Redundancy Support

EMS provides redundancy support for Voice modules.

- Set a module as standby.
- Revert a protection switch.
- Clear standby.

- Display redundancy status with a view of the front shelf of the TB200 chassis (modules).

Alarm Management

- Update of alarm displays to include setting filters for viewing.
- Ability to view alarm displays on a “per card,” or “per interface” basis.
- Navigate from the current alarm list (high level) to the affected component (low level).
- Manage data and alarm pollers.
- Set, stop, and modify polling timers.

Display Status

Display of status of TMC and EOC channels of an IG.

Identify True GR303 State

Identify the true GR303 state that can be used, such as invoking a protection switch upon viewing an alarm.

View and Modify DS1 and DS3

- View and modify DS1 line buildout.
- View and modify DS3 scramble mode.

Display Preferences

- Display preferences can be saved, including table column arrangement, node name, and IP address on the title bar.
- The display of counts of rows in tables can be modified.

SNMP

The Simple Network Management Protocol SNMP enhancements are:

- SNMP Traps
- Configuration Save/Delete
- Module and System Reset

SNMP Traps

The Administration module now supports SNMP traps in the TB200. The SNMP agent can send traps per change of alarm status. Alarms can now be viewed through HP Open View (standard) alarm viewers from the NOC NMS, and other third party device status programs that are driven by SNMP traps.

This feature can be enabled or disabled.

Sending Notifications (Traps)

There are several existing notifications defined in the MIBs that are supported by the SNMP agent:

- The communication status with a IAD has changed.
- The state of a component has changed.
- Configuration of the system changed.
- Status of DS1 line has changed.
- Status of DS3 line has changed.

One new notification:

- A current alarm has been set or cleared.

Configuration Save/Delete

The actions of the CLI commands `set config` and `del config` are extended to EMS.

- `set config` saves current configuration information in flash memory.
- `del config` deletes configuring information from flash memory.

Module and System Reset

This provides the same functionality as the CLI command `set reset`.

Resource manager generates an alarm before resetting. When an Administration module is to be reset, a 30 second delay is introduced before performing reset. This delay increases the probability that the EMS will see the alarm before communication is lost.

Dynamic CBR Bandwidth Management

Dynamic Constant Bit Rate (CBR) bandwidth management shapes the CBR list more closely to the actual traffic load.

This improves the CBR bandwidth allocation for multiple voice paths. The CBR bandwidth allocation is adjusted whenever there is a change in the CBR bandwidth demand. The bandwidth demand is a function of the current traffic load, and the coding type of the analog line.

There are two types of traffic load: voice or non-voice traffic. Voice traffic can be either G711 or G726. Non-voice traffic is G.726, which is used for data such as modem transmissions, telnet packets, and download data packets.

Resource Manager API

The Resource Manger, located in the Administration module, controls various operations of the TB200. The following CLI operations have been improved.

set voice path

The calling parameters set up or clear the voice slot table.

set cpe

This API is used by the Administration module to modify analog line, and by the Voice module to notify a coding change.

set crv

The calling parameters modify the line and voice slot tables. A new resource manger API is added to allocate more bandwidth to download the IAD image.

New and Enhanced CLI Commands

New CLI Commands

The new CLI commands are **backupvoice**, **revert**, and **cfgload**.

backupvoice

Three CLI commands support voice module redundancy: **set backupvoice**, **get backupvoice**, **del backupvoice**.

set backupvoice

This command is used to set up a voice card to act as a backup for all the other voice cards in the system. This command can also be used to revert back to using the voice card that originally failed once it is again operational.

To set up a voice card to act as the backup voice card, specify the <cardId> of the voice module to be used as the backup. Only a voice card with no voice paths on it can be specified as the backup.

To revert back to the voice card that failed once it is again operational, use the command **set backupvoice revert**.

Syntax

```
set backupvoice {<cardId>} | revert
```

<**cardId**> The identification number of a voice card in the system. The format is <shelf>-<slot>-<fbIndicator>, where the last field indicates if the slot is located in the front and is specified with a "f" (e.g., 1-8-b).

revert The literal input, **revert**, is the command to use to revert back to the voice card that had failed, but is now operational. This will also put the backup voice card back into "standby" mode.

Examples

```
set backupvoice 1-3-f
```

```
set voicepath revert
```

Possible errors for **set backupvoice <cardId>**:

- Card Id is not a Voice card.
- Card is already active, or has configuration information on it.

Possible errors for **set backupvoice revert**:

- There is no backup card.
- The backup card is not in active state.

```
get backupvoice
```

This command retrieves the status of the backup voice card.

Syntax

```
get backupvoice
```

Example

```
get backupvoice
```

Possible results to **get backupvoice** command:

```
backup status revert time failed failure time
1-3-f active manual 1-5-f 23Sep2001 23:18:51
```

– or –

```
1-3-f standby manual
```

– or –

```
1-3-f not avail manual
```

– or –

No backup voice card configured

del backupvoice

This command is used to no longer use a Voice module as a spare, making it available for normal voice traffic.

Note: If a Voice module has failed and the spare module is currently active as a replacement, the spare Voice module cannot be deleted.

Syntax

del backupvoice

Example

```
del backupvoice
```

Possible errors:

- There is no backup card.
- The backup card is in active state.

revert

See “revert” on page 20, under “backupvoice.”

cfgload

set cfgload

This command can be used to download a specified file, backup the system database, or restore the system database.

Syntax

`set cfgload <filename> | <backup | restore>`

<filename> Download and execute CLI command file *filename*. The CLI command file is in ASCII format.

<backup> Backup the system database in non-volatile memory to a configuration file. The name of the configuration file should have already been specified in the **set tftpf** command. The name of the configuration file has a file extension of ".*cfg*" to avoid accidentally wiped out the system image file. The backup operation prompts the user for confirmation. If the answer is no, the backup operation is aborted.

<restore> Restore the system database from the configuration to non-volatile memory. The name of the configuration file should have already been specified in **set tftpf** command. The restore operation verifies the correct file extension ".*cfg*", checks for CRC errors, and compares the MAC address in the preamble with the MAC address of the TB200. If the check fails, then the user is prompted if the restore operation should be aborted or not. If yes, the operation is aborted. If everything is correct, the preamble is displayed and the user is prompted for confirmation to start the restoration. If the answer is no, then the restore operation is aborted. Otherwise, the system database is copied to non-volatile memory and the system is rebooted.

The preamble is in ASCII format. It contains the file creation date and time, the user name, IP address (if user is in a telnet session), the MAC address of the TB200, the preamble length, system configuration information from the database, such as number of interfaces, voice paths, IADs, DS1s and DS3s

Examples

```
set cfgload backup
```

```
set cfgload restore
```

```
set cfgload filename
```

```
get cfgload
```

Download the *.*cfg* configuration file from the server and display the preamble portion. Note that the configuration is not restored to the nvdata area.

Syntax

```
get cfgload <filename.cfg>
```

Example

```
get cfgload filename.cfg
```

Enhanced CLI Commands

The enhanced CLI command is **alarm**.

alarm

```
set alarm
```

This command is used to set the alarm severity for a particular alarm. For example, if audible alarms only occur for critical alarms, this feature allows the craft to provision the severity of the alarm as critical. This feature also allows the craft to provision the severity of an alarm as major or minor.

Syntax

```
set alarm <alarmType> <alarm> <"critical" | "major" | "minor">
```

<**alarmType**> The alarmType parameter is required. Current values allowed are:

cpe: set an alarm severity for a cpe alarm.

ig: set an alarm severity for an ig alarm.

ds1: set an alarm severity for a ds1 alarm.

ds3: set an alarm severity for a ds3 alarm.

equipment: set an alarm severity for an equipment alarm.

<**alarm**> The alarm parameter is required. The alarm parameter depends upon the alarm type chosen. Current values allowed for **cpe alarmType** are:

link down: set an alarm severity for a cpe link down alarm.

hw fail: set an alarm severity for a cpe hardware fail alarm.

hw cmp: set an alarm severity for a cpe hardware compatibility alarm.

sw cmp: set an alarm severity for a cpe software compatibility alarm.

Current values allowed for **ig alarmType** are:

fail: set an alarm severity for an interface group failure.

pri tmc: set an alarm severity for a primary tmc failure.

sec tmc: set an alarm severity for a secondary tmc failure.

pri eoc: set an alarm severity for a primary eoc failure.

set tmc: set an alarm severity for a secondary eoc failure.

Current values allowed for **ds1 alarmType** are:

los: set an alarm severity for a ds1 los alarm.

lof: set an alarm severity for a ds1 lof alarm.

ais: set an alarm severity for a ds1 yellow alarm.

ber: set an alarm severity for a ds1 ber alarm.

Current values allowed for **ds3 alarmType** are:

los: set an alarm severity for a ds3 los alarm.

lof: set an alarm severity for a ds3 lof alarm.

ais: set an alarm severity for a ds3 ais alarm.

yellow: set an alarm severity for a ds3 yellow alarm.

ber: set an alarm severity for a ds3 ber alarm.

Examples

```
set alarm cpe link down major
set alarm ig pri tmc major
set alarm ds1 ais minor
set alarm ds3 yellow critical
set alarm equipment switch fail major
```

System Issue Resolution

Software release 1.4 resolved the following system issues, listed by description and Trouble Ticket Resolution.

- **Upgrading TB50s in bulk mode (664)**

When upgrading TB50s in a bulk mode, there are certain groups of TB50s assigned to a certain voice path that will fail the upgrade.
- **Return character added (674)**

Sometimes when telnetting into a system, a return character will be added when the user is typing. This seems to be most notable when entering passwords or changing the password, but has also happened when deleting crvs or when trying to set configuration.
- **Exception error (711)**

After the system is restarted, an exception error is present at the Administration card. This error will cause the system to reset on its own.
- **Initialization after reset (727)**

After a power reset or a soft reset, the system completely initializes but all of the TB50s never go to an active state. They stay in the initial state until the system is restarted again.
- **CR-408 IP public address (748)**

Due to the CR-408 design in the HDIA format, there is no longer a public IP address assigned to the IAD. This prevents anyone from telnetting to the IAD for trouble shooting or operational status inquiries.
- **Polling response time on UNIX platform (788)**

When running the EMS system on a UNIX platform, the response time of the polling is extremely slow. This inhibits quick identification of any problems that the gateway is or could be experiencing.

- **System reset (823)**

During an upgrade process of the TB200, if the TMC/EOC are in a split mode between the primary and secondary DS1s, the probability is high that the system will reset.
- **Upgrading TB50s assigned to a voice path (833)**

This issue is relational to issue **Upgrading TB50s in bulk mode (664)**. When upgrading TB50s in a bulk mode, there are certain groups of TB50s assigned to a certain voice path that will fail the upgrade.
- **TMC/EOC mismatch (845)**

Once the TMC/EOC mismatch occurs, a message trace appears every 8 or 9 seconds. It continuously happens for approximately 20 times. The Primary and Secondary DS1s will switch on the switch side, causing all traffic to fail.
- **TB50s after DS3 loses frame (861)**

If the DS3 loses frame, an alarm will be generated indicating the loss. Upon recovery, none of the TB50s will restore to an up state.
- **Upgrading different systems (865)**

During an upgrade to different systems at the same time, the Administration card lost communication with the control card in both systems.
- **Telnet after reset (871)**

When trying to establish a telnet session immediately after a soft reset or a power reset will cause the system to display a ringer error, and then the system will hang. Another restart will need to be done to resolve this issue, being sure not to telnet into the system before it has completely re-initialized.
- **TMC/EOC after upgrade (892)**

The system will periodically declare a TMC/EOC mismatch when it is powered back up after the upgrade is finished. The system will need to be restarted to clear this condition.
- **Tracking DS1 clock (909)**

After the TB200 has been restarted, there appears to be a problem tracking the DS1 clock provided by the 303 switch. The internal clocks will go into a free run mode, which causes errors towards the TB200, and clock slippage towards the switch.

- **Lock out telnet and console (951)**

During normal operations and information gathering from the gateway, a console and telnet lock out condition could occur. The only way to recover from this issue is to restart the gateway.

Hardware, Software, and Firmware Compatibility

Listed below are the minimum hardware, software, and boot versions required to upgrade the TB200 and TB50 IAD to software release 1.4

Table 6-1 Hardware Compatibility

Hardware	Minimum Hardware Revision Number	Minimum Boot and System Images
Administration module (2300)	all	Boot: 66 System: 88
DS1 module (Quad T-1) (2150)	all	Boot: 66 System: 88
DS3 WAN Module (2450)	202	Boot: 66 System: 88
Switch Module (2401)	104	Boot: 66 System: 88
Voice Module (2100)	205	Boot: 66 System: 88
Power Module (2200)	use model 5051 only	Boot: 66 System: 88
TB200 Chassis (2000)	002	Boot: 66 System: 88
TB50 IAD (1008)	005	Boot: 66 System: 88
TB55F IAD (1008F)	001	Boot: 66 System: 88

Table 6-2 TB200 Firmware and Software Compatibility

TB200 Boot or Software	Software Build Number	Release Number
Boot (Administration)	88	1.3.X
Software (Administration)	88	1.3.X
Boot (Voice)	88	1.3.X
Software (Voice)	88	1.3.X
Boot (Switch)	88	1.3.X
Software (Switch)	88	1.3.X

Table 6-3 TB50 Firmware and Software Compatibility

TB50 Boot or Software	Software Build Number	Release Number
Boot	66	1.3.X
Software	88	1.3.X

Table 6-4 TB55 Firmware and Software Compatibility

TB50 Boot or Software	Software Build Number	Release Number
Boot	66	1.3.X
Software	88	1.3.X

Download Software

Upgrade

System upgrade will be performed remotely by Tollbridge Technologies Customer Care Support team, who can be contacted at 1-888-561-7647.

If upgrading must be done at the customer site, instructions are provided. To do so, you will need the IP address of the TFTP server, and the names of the files to download. The requirements to upgrade to software release 1.4 are listed in Chapter 6.

For assistance, contact Tollbridge Technologies Customer Care Support Team: 1-888-561-7647.

Upgrading Image Files

Image files are downloaded from a TFTP server.

There are two locations for image files, inactive and active. A new image is downloaded into the inactive storage location: The inactive image is overwritten. The new image remains inactive until it is made active via the **set activeimg** command.

The steps to upgrade image files:

- “Step 1: Define the TFTP Server” on page 34.
- “Step 2: Specify the Image File Name” on page 34.
- “Step 3: Download the Image or Configuration File” on page 35.
- “Step 4: Set the Downloaded Image as the Active Image” on page 37.
- “Step 5: Reset the Module” on page 38.

Before downloading a new image or configuration file, the current image file on the TB200 can be viewed.

- The CLI command **get swver** shows you the software version of both images.
get swver <cardId> <cardIdRange> <flashingImgNo>
- **get activeimg** shows you which image is active.
get activeimg {{{<cardId> | <cardIdRange>}...} | {{{<cpeId> | <cpeIdRange>}...}}

Step 1: Define the TFTP Server

The TFTP server must be defined before downloading an image file to a TB200:

```
set tftpsrvr <ipAddr>
```

To check if the IP address of the TFTP server has already been configured, enter:

```
> get tftpsrvr
```

TB200 is configured with the IP address of the TFTP server that stores and download configuration and image files. Once configured, it is not necessary to enter the specific TFTP IP address; the address is stored and internally referenced for all image and configuration file downloads.

Example: To enter the IP address (193.54.4.3) of the selected TFTP server, enter:

```
> set tftpsrvr 193.54.4.3
```

Note: The name of the file to be downloaded is specified with the **set tftpfile** command, while the download itself is activated with **set imgload**.

Step 2: Specify the Image File Name

Specify the name of the system file to download from the TFTP server:

```
set tftpfile <fileName>
```

Example: To download the file named *test*, enter:

```
> set tftpfile test
```

To verify the file name that was specified, use the **get tftpfile** command:


```
get tftpfile
```

Step 3: Download the Image or Configuration File

After the TFTP server IP address and file to be downloaded are specified, download the image file with the command **set imgload**:

```
set imgload {<cardId> | <cardIdRange> <cpId>} <imgType>
```

For detailed information, see “set imgload” on page 107.

Following are examples of downloading files: Download Image File
Download Image File; Download a Configuration File

Download Image File

An image can be downloaded to single or multiple cards on the same shelf, or simultaneously to all cards within the chassis.

The new file is downloaded into the inactive storage location on the module; the existing code in that storage location is overwritten.

Note: The name of the file to download is specified via the *set tftpfile* command, which must be done before applying *set imgload* (see “Step 2: Specify the Image File Name” on page 34).

Example 1: To initiate a download of the system image from the TFTP server to a specific module (e.g. 1-4-f) on the TB200, enter:

```
> set imgload 1-4-f system  
Image downloaded successfully
```

Example 2: To initiate a download of the system image from the TFTP server to a specific range of modules on the same shelf, (such as modules in slots 4 through 8 on shelf 1) on the TB200, enter:

```
> set imgload 1-4..8-f system
```

Example 3: To initiate a download of the system image from the TFTP server to all cards in a chassis (e.g. slots 2 to 8 on all shelves), enter:

```
> set imgload *-2..8-f system
```

Example 4: To initiate a download of the system image from the TFTP server to a IAD identified as 59, enter:

```
> set imgload 59 system
```

If a module or IAD ID or range is not specified in the command by default, the system running the CLI will be modified.

Check the version of the installed software with the CLI command, **get swver**.

```
> get swver *--* *  
  
<descr>      <location>      <flashImgNo>      <revision>  
=====
```

admin	1-1-f	1	TB-1.4.0
admin	1-1-f	2	TB-1.4.0
voice	1-2-f	1	TB-1.4.0
voice	1-2-f	2	TB-1.4.0
voice	1-5-f	1	TB-1.4.0
voice	1-5-f	2	TB-1.4.0
voice	1-7-f	1	TB-1.4.0
voice	1-7-f	2	TB-1.4.0
switch	1-9-f	1	TB-1.4.0
switch	1-9-f	2	TB-1.4.0

Download a Configuration File

The configuration file is downloaded to and processed by the Administration module. There is no need to define the destination module. By default, it will always download to slot 1, which is reserved for the Administration module.

Note: In the case of a system with multiple Administration modules, the module that is running the CLI will be the destination for new downloads.

Example: To initiate a download of the configuration file to the Administration module, enter:

```
> set imgload 1-1-f system
```

```
Configuration file downloaded successfully.
```

Step 4: Set the Downloaded Image as the Active Image

A new image is downloaded into the inactive storage location. This new image remains inactive until it is made active with the **set activeimg** command.

To activate an image file:

```
set activeimg [{{<cardId> | <cardIdRange>}...} {{<cpeId> |
<cpeIdRange>}...}] <flashImg>
```

To view current active image files:

```
get activeimg [{{<cardId> | <cardIdRange>}...} | {{<cpeId> |
<cpeIdRange>}...}]
```

Examples follow: Define an Image as Active; Review Image Assignments.

Define an Image as Active

Example 1: To define an image (e.g. 2) as active image for a specific card (e.g. shelf 1, card 7), enter:

```
> set activeimg 1-7-f 2
```

Example 2: To define the second storage location as the active image on a IAD identified as 5, enter:

```
> set activeimg 5 2
```

Example 3: To define the second storage location on all cards and all shelves as the active image, enter:

```
> set activeimg *--* 2
```

Note: If a card or IAD ID or range is not specified in the command, by default, the system running the CLI will be modified.

Review Image Assignments

EXAMPLE 1: To determine the active image for all modules enter:

```
> get activeimg *--*
```

Step 5: Reset the Module

After the new image or configuration file is downloaded, configure that file as the active image: cut in the change by resetting the appropriate module or IAD. Two types of resets are supported, coldstart and factory reset: Use **coldstart**.

```
set reset [{{<cardId> | <cardIdRange>}...} | {{<cpeId> | <cpeIdRange>}...}]  
<resetType>
```

Example: To reset all installed modules, enter:

```
> set reset *--* coldstart
```