

# **Tmedia**

## **System Installation Guide for TMP6400 and TMS1600**

9010-00162-1A, Issue 1

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# Preface

## About this Guide

This guide describes the installation and setup of the Tmedia TMP6400 and the TMS1600 telecom platform, their connections to the Tmedia control, voice, and IP networks.

## Conventions

Terminology	Description
Tmedia Control Network	The network link between Tmedia units and the Toolpack application server and stream servers.
Tmedia System	This term includes the combination of Tmedia units and the Tmedia control network serving a customer application.
Tmedia Unit	A generic reference to either the TMP6400 or the TMS1600

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# Table of Contents

Chapter 1	Introduction .....	1
1.1	Installation Overview .....	2
1.2	Installation Prerequisites .....	2
1.3	Preventing Electric Static Discharge Damage.....	3
1.4	Recommended Reading .....	3
Chapter 2	Equipment Connections .....	5
2.1	Package Contents.....	6
2.1.1	TMP6400 Package Contents .....	6
2.1.2	TMS1600 Package Contents .....	7
2.2	Rack mounting the Tmedia Equipment .....	8
2.2.1	Prerequisites .....	8
2.2.2	Vertical Placement of Tmedia Equipment .....	8
2.2.3	Mounting the Tmedia Hardware .....	9
2.3	Connecting the TMP6400s to the TMS1600 .....	10
2.3.1	Prerequisites .....	10
2.3.2	Interconnections .....	10
2.4	Connecting to the Tmedia Control Network .....	12
2.4.1	Prerequisites .....	12
2.4.2	Interconnections .....	13
2.5	Connecting to the VoIP Network .....	14
2.5.1	Prerequisites .....	14
2.5.2	Interconnections .....	15
2.6	Connecting to the PSTN .....	16
2.6.1	Prerequisites .....	16
2.6.2	RJ-45 Interface (T1/E1/J1).....	17
2.6.3	SCSI Interface (T1/E1/J1).....	18
2.6.4	Dual BNC Interface (DS3).....	19
2.6.5	Optical Interface (OC3/STM-1).....	20
2.7	Powering Up.....	21
2.7.1	Prerequisites .....	21
2.7.2	Connecting to AC Power .....	21
2.7.3	Connecting to DC Power.....	23
2.7.4	Verifying the LED Status Indications .....	24
Chapter 3	Initial System Configuration .....	25
3.1	Connecting to the Serial Port of the Tmedia Unit.....	26
3.2	Configuring the Terminal Emulator Application .....	27
3.3	Using the set_boot and print_boot Commands .....	28
3.4	Creating a Shell Password .....	32
3.5	Setting the Debug Output Target System and Trace Level.....	33
3.6	Tmedia Default IP Addresses .....	33

Chapter 4	Toolpack Installation .....	35
4.1	ToolPack Operating System Platforms .....	36
4.2	Installation Guidelines .....	36
Chapter 5	System Upgrades.....	37
5.1	Installing a Firmware Package .....	38
5.2	Removing a Firmware Package .....	38
5.3	Installing a New License .....	39
Chapter 6	Troubleshooting Tools.....	41
6.1	Reporting a Problem .....	42
6.2	Setup Information .....	42
6.3	tblogtrace or udplisten Log (Mandatory).....	42
6.4	Tb640debug Dump Files (Mandatory).....	43
6.5	Application Logs .....	44
6.6	Backdoor Tools .....	44
6.6.1	tbx_cli_tools_remote .....	44
6.6.2	HA Monitor .....	44
6.6.3	Line/Trunk Status (Tbshows).....	45
6.6.4	VoIP Traffic Capture.....	45
6.6.5	Wireshark (formerly called Ethereal) .....	45
6.6.6	Tbstreamlisten.....	45
6.6.7	Stream Server Audio Packets to Wave File .....	46
6.7	tbsigtrace Signaling Traces .....	46
6.7.1	ISDN PRI Analyzer Specific Parameters.....	46
6.7.2	SS7 Analyzer Specific Parameters .....	46
6.7.3	SIP Analyzer Specific Parameters .....	47
6.7.4	Working Example .....	48
6.8	General Debugging Tips .....	48

# Chapter 1 Introduction

This chapter provides an introduction to installation and setup of a Tmedia system for the TMP6400 and the TMS1600.

The following topics are covered:

- Installation overview
- Installation prerequisites
- Other recommended reading

## 1.1 Installation Overview

The installation and setup of a Tmedia system considers the interconnection of one or more TMP6400s with one or two TMS1600s. This document is designed to guide you through the installation and setup of your Tmedia system by presenting you with a series of chapters dealing with installation tasks in the following order:

- Rack mounting the Tmedia units
- Connecting the TMP6400(s) to the TMS1600(s)
- Connecting to the Tmedia control network
- Connecting to the VoIP network
- Connecting to the PSTN
- Powering Up
- Installing Toolpack
- Initial System Configuration
- System Upgrades
- Troubleshooting

## 1.2 Installation Prerequisites

In order for the Tmedia system installation to proceed without interruption, it is important that you verify that you have on hand all of the necessary materials for the installation work. Prior to beginning the installation, you should have prepared for the following:

- Adequate space for the installation of your Tmedia system. Consider that you will need to mount the Tmedia units on one or more 19" customer-provided equipment racks.
- Adequate power supply and power connections. In order to guarantee a non-interrupted supply, the Tmedia units must be powered by a dedicated power source. Consider that each Tmedia unit will require one to two power connections in addition to PCs and servers. Tmedia units are not shipped with power cords and therefore you will need to plan for your power cable requirements.
- In order to run your telecom applications on the TMP6400, you will need to have purchased an adequate number of licenses for the features that you will use.

In addition, you will need the following equipment:

### Gigabit Ethernet Switches

Two gigabit Ethernet switches must be used to support full control redundancy. In its lab studies, TelcoBridges has not encountered problems with a large variety of switches available in the market. The following is a list of some switches that TelcoBridges has used:

- Dell Powerconnect 2708, 8 gigabit Ethernet ports
- Dell Powerconnect 2716, 16 gigabit Ethernet ports
- Netgear GSM7324, Layer 3 managed, 24 gigabit Ethernet ports



## 1.3 Preventing Electric Static Discharge Damage

Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. It may occur if electronic printed circuit cards are improperly handled and may cause complete or intermittent failure.

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**Attention** Always follow ESD prevention procedures when removing and replacing modules:

- Ensure that the TelcoBridges Tmedia units are electrically connected to earth ground.
  - Wear an ESD-preventive wrist strap and ensure that it makes good contact with your skin. Connect the wrist strap clip to an unpainted surface of the Tmedia unit or the grounded equipment rack in order to channel away all ESD voltages safely to ground. To guard against ESD damage and shocks, the wrist strap and cord must be in proper working condition.
  - If no wrist strap is available, and you must work with the Tmedia units, ground yourself by touching a metal part of the chassis.
- 

## 1.4 Recommended Reading

This document assumes that you are well versed the installation of TelcoBridges Tmedia units and have been trained to work with the equipment. If you have any technical questions, please contact TelcoBridges technical support or send an E-mail to [support@telcobridges.com](mailto:support@telcobridges.com).

Other documentation exploring various aspects of the Tmedia system, are available on your TelcoBridges documentation CD. Some of these documents are listed here as follows:

- Tmedia System Architecture Description for Developers of VoIP and TDM Solutions, 9020-004201A
- TMP6400 Quick Reference Guide, 9020-00043-A1
- TMP6402 Quick Reference Guide, 9020-00045-A2
- Tmedia Web Portal System Configuration Tutorial Guide, 9020-00047-A2, Issue 1
- Toolpack 2.1 Windows installation guide,9010-00164-1A
- Toolpack 2.1 Linux installation guide, 9010-00163-1A
- Toolpack 2.1 Solaris installation guide,9010-00164-1A
- TB640 User's Guide, 9000-00002-2H
- TB640 SS7 User's Guide, 9010-00030-1Z
- TB640 SIP User's Guide, 9010-00087-04



# Chapter 2      Equipment Connections

This chapter provides the procedures for the connections of a TMP6400 and TMS1600 to a Tmedia control network and their interface with a PSTN and IP network. Topics covered are:

- Verifying your list of materials
- Rack mounting the Tmedia equipment
- Interconnecting the TMP6400 with the TMS1600
- Connecting to a Tmedia Control network
- Connecting to a PSTN Network
- Connecting to an IP network
- Connecting Power
- Verifying LED Status

## 2.1 Package Contents

You will have received one or more TMP6400s and optionally one or two TMS1600s. The TMP6400 is your telecom platform on which you will build your telecom applications. The TMS1600, although not a requirement for your network, provides you with the scalability to build large-scale carrier-grade VoIP and Telecom systems.

### 2.1.1 TMP6400 Package Contents

In the TMP6400 box, you will find:

- One TMP6400
- One set of mounting brackets with screws. Used for the mounting of a TMP6400 on a 19" rack
- One DB-9 to RJ-45 adapter. Allows you to interface the DB9 COM port of your computer with the RJ-45 COM port of the TMP6400
- SCSI cables and patch panels. This is optional and only provided if the PSTN interface on your TMP6400 features SCSI connectors.
- Three CAT5 Ethernet straight cables (male-male). Two are used for the connection between the TMP6400 and the Tmedia network. One is used to connect a PC to the TMP6400
- One warranty sheet
- One packing slip
- One TMP6400 Quick Installation guide. A 1-page sheet that provides a pictorial view of equipment setup.

Not included with the TMP6400:

- A power cord. Used to supply power to the TMP6400. If your model features redundant power supplies, then you will need two AC power cords. If your model features a DC power supply, then you will need a DC power cord.
- A 19" equipment rack. You will use a standard 19" wide equipment rack to install the TMP6400s and TMS1600s.

## 2.1.2 TMS1600 Package Contents

In the TMS1600 box, you will find:

- One TMS1600
- One set of mounting brackets with screws. Used for the mounting of a TMS1600 on a 19" rack
- One DB-9 to RJ-45 adapter. Allows you to interface the DB9 COM port of your computer with the RJ-45 COM port of the TMP6400
- Three CAT5 Ethernet straight cables (male-male). Two are used for the connection between the TMS1600 and the Tmedia network. One is used to connect a PC to the TMS1600
- One warranty sheet
- One packing slip
- One TMS1600 Quick Installation guide. A one- or two-page sheet that provides a pictorial view of equipment setup.

Not included with the TMS1600:

- A power cord. Used to supply power to the TMP6400. If your model features redundant power supplies, then you will need two AC power cords. If your model features a DC power supply, then you will need a DC power cord.
- A 19" equipment rack. You will use a standard 19" wide equipment rack to install the TMP6400s and TMS1600s.

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**Note** You may only need one 19" rack for the installation of the Tmedia hardware. Refer to section Section 2.2.2 "Vertical Placement of Tmedia Equipment" on page 8

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## 2.2 Rack mounting the Tmedia Equipment

The Tmedia hardware, consisting of one to 16 TMP6400s and optionally one to two TMS1600s are mounted on customer provided equipment racks using the mounting hardware packaged in the box.

### 2.2.1 Prerequisites

To rackmount the Tmedia equipment, you will need:

- One or more 19" customer provided equipment racks. Each rack must be solidly anchored to the floor with appropriate support at the top of the racks.
- Climate controlled room: 0 to +50 Celsius, 0 to 95% non-condensing

### 2.2.2 Vertical Placement of Tmedia Equipment

The Tmedia units are housed in either a 1U or 2 U chassis, as tabulated in table 2.1 on page 8. It is important that you provide for enough room on the equipment rack to allow for the installation of each Tmedia unit. Consider the available space on your equipment rack and the individual heights of each Tmedia unit. Due to the rear-exhaust heat vents and the efficient heat dissipation design, there is no need to leave any physical vertical space between the placement of the Tmedia units on the equipment rack.

Table 2.1 Tmedia Physical Height

Tmedia Model Number	Vertical Height
TMP6400	1U
TMP6402	2U
TMS1600	1U
TMP 6400 Patch Panels <sup>a</sup>	1U
Gigabit Switched <sup>b</sup>	1U
Servers <sup>c</sup>	1U

a. TMP6400s configured with a 64-E1 TDM module require one patch panel for each 32 E1 line grouping.

b. Verify the manufacturer specifications for placement and spatial requirements.

c. Verify the manufacturer specifications for placement and spatial requirements. Depending upon the server that you will use the vertical height may range beyond a 1U size.

### 2.2.3 Mounting the Tmedia Hardware

The Tmedia hardware is mounted on the 19" equipment rack using the angle brackets and screws provided in the box. To mount the hardware proceed as follows:

**To mount the Tmedia hardware proceed as follows:**

1. Using two metal screws, attach one angle bracket to the front, left-hand side of each Tmedia unit when viewed from the front, as shown in figure 2.1 on page 9. Repeat the same for the angle bracket on the right-hand side. Repeat this procedure for each Tmedia unit.
2. Starting with the TMP6400s, start mounting equipment at the top-most position of the rack, keeping in mind the space required on the equipment rack as described in Section 2.2.2 "Vertical Placement of Tmedia Equipment" on page 8. Repeat this step until all of the Tmedia units have been mounted on the equipment rack(s).



Figure 2.1 Mounting the Tmedia Hardware

## 2.3 Connecting the TMP6400s to the TMS1600

The TMS1600 enables you to scale your Tmedia network by interconnecting up to as many as 16 TMP6400s with each other to build a non-blocking system of up to 32,768 channels. A second TMS1600 provides your system with an active/standby high availability architecture.

### 2.3.1 Prerequisites

To interconnect the TMP6400s with the TMS1600, you will need:

- One CAT5 Ethernet crossover cable with RJ45 type male-male terminations for each TMP6400 connected to the TMS1600.
- If your Tmedia system features a second TMS1600, you will require an additional CAT5 Ethernet cable with RJ45 male-male terminations for each TMP6400

### 2.3.2 Interconnections

The resources of the TMP6400s are made available to each other by the connection to one or optionally two TMS1600s, as shown in figure 2.3 on page 11. See figure 2.2 on page 10 for a Ethernet crossover wiring diagram.

#### To interconnect the TMP6400s:

1. Start with the TMP6400 at the topmost position of the equipment rack and connect a CAT5 Ethernet crossover cable to TMS Port 1 at the rear of the TMP6400 figure 2.3 on page 11. Connect the other end of the same CAT5 cable to the first port of the first TMS1600.
2. If your system employs a second TMS1600, connect a second CAT5 Ethernet crossover cable to TMS Port 2 at the rear of the TMP6400 figure 2.3 on page 11. Connect the other end of the same CAT5 cable to the first port of a second TMS1600.
3. Repeat steps 1-2 for each TMP6400 until they have all been connected to the TMS1600.

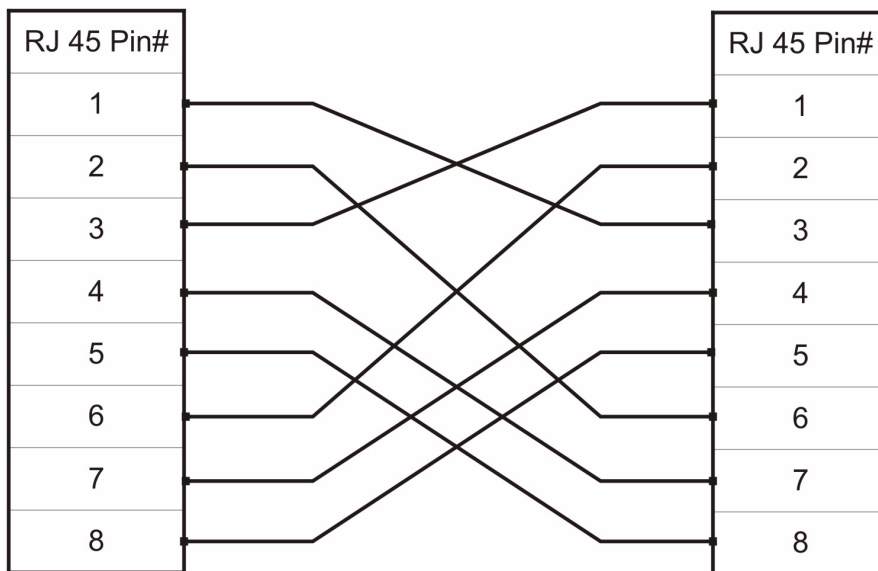


Figure 2.2 Ethernet Crossover Cable



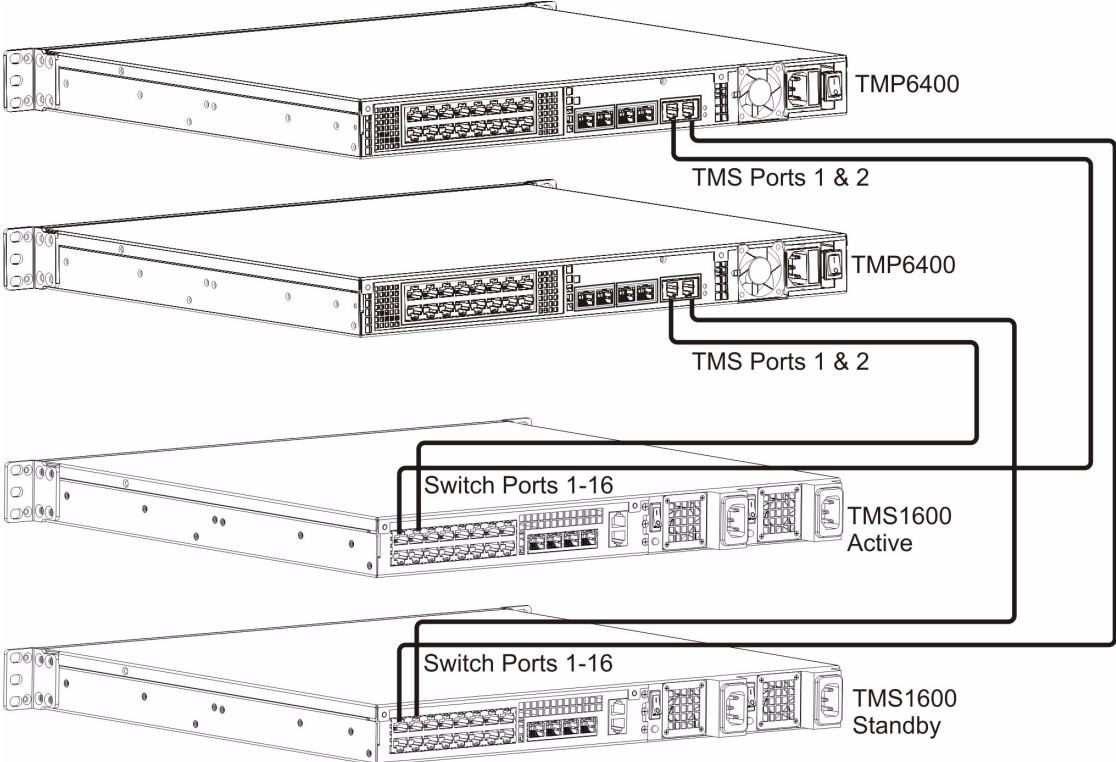


Figure 2.3 Example of Interconnecting 2 TMP6400s with 2 TMS1600s

## 2.4 Connecting to the Tmedia Control Network

The Tmedia control network enables the Toolpack application and stream servers to control the TMP6400s using a Gigabit Ethernet switch. It is strongly recommended that an additional Ethernet Switch be used to provide full control redundancy with one Ethernet link active and the other in a hot standby mode.

### 2.4.1 Prerequisites

To connect the TMP6400s to the Tmedia control network, you will need:

- Customer provided gigabit Ethernet switch. A second one is required to support full Tmedia control redundancy.
- One CAT5 Ethernet cable with RJ45 male-male terminations for each TMP6400.
- If your Tmedia system features a second network link, you will require an additional CAT5 Ethernet cable with RJ45 male-male terminations for each TMP6400.

## 2.4.2 Interconnections

The TMP6400s are connected to the Tmedia control network by the connection to one or optionally two Ethernet GigE network links, as shown in figure 2.4 on page 13.

### To connect the TMP6400s to the Tmedia control network:

1. Start with the TMP6400 at the topmost position of the equipment rack and connect a CAT5 Ethernet cable to Control Port 1 at the rear of the TMP6400. Connect the other end of the same CAT5 cable to the Gigabit Ethernet switch.
2. If your system employs a second Gigabit Ethernet switch for control redundancy, connect a second CAT5 Ethernet cable to Control Port 2 at the rear of the TMP6400. Connect the other end of the same CAT5 cable to the second Gigabit Ethernet switch.
3. Repeat steps 1-2 for each TMP6400 and TMS1600 until they have all been connected to the Gigabit Ethernet switch(es).

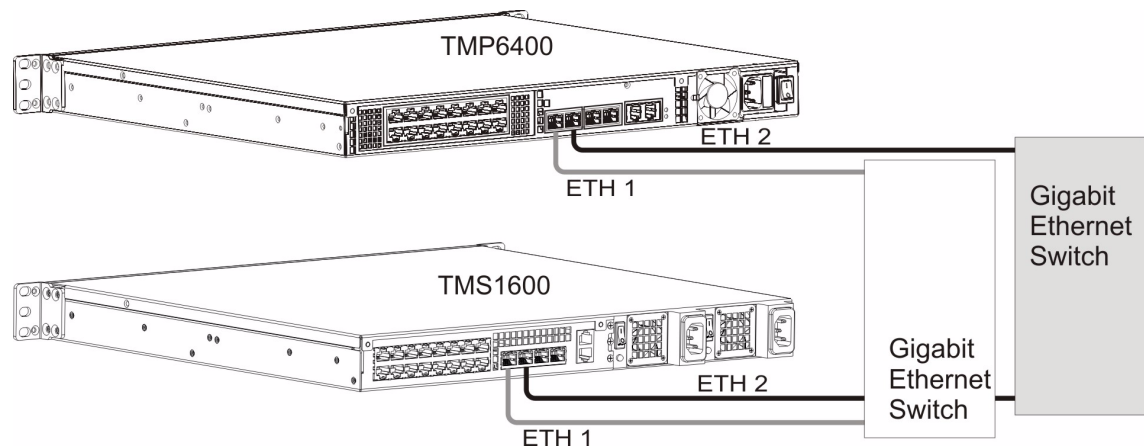


Figure 2.4 Connecting to the Tmedia Control Network

## 2.5 Connecting to the VoIP Network

The TMP6400 features dual GigE ports for connection to different VoIP networks. Should one of the IP networks fail, the Tmedia unit will continue to handle VoIP traffic using the alternate network.

### 2.5.1 Prerequisites

To connect the TMP6400s to the VoIP network, you will need:

- Gigabit Ethernet switch. A second one is required to support a second point of access to a VoIP network.
- One CAT5 Ethernet cable with RJ45 male-male terminations for each TMP6400.
- If your Tmedia system features a second VoIP network link, you will require an additional CAT5 Ethernet cable with RJ45 male-male terminations for each TMP6400.

## 2.5.2 Interconnections

The TMP6400s are connected to the VoIP network by the connection to one or optionally two Ethernet GigE network links, as shown in figure 2.5 on page 15.

**To connect the TMP6400s to the VoIP network:**

1. Start with the TMP6400 at the topmost position of the equipment rack and connect a CAT5 Ethernet cable to VoIP Port 1 at the rear of the TMP6400. Connect the other end of the same CAT5 cable to the Gigabit Ethernet switch.
2. If your system employs a second Gigabit Ethernet switch for control redundancy, connect a second CAT5 Ethernet cable to VoIP Port 2 at the rear of the TMP6400. Connect the other end of the same CAT5 cable to the second Gigabit Ethernet switch.
3. Repeat steps 1-2 for each TMP6400 until they have all been connected to the Gigabit Ethernet switch(es) for the VoIP network.

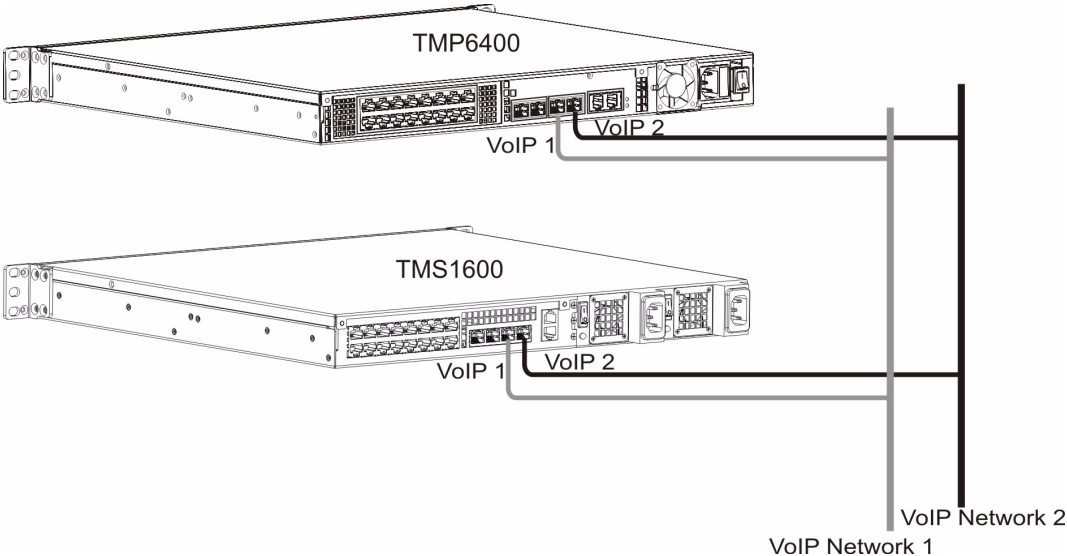


Figure 2.5 Connecting to the VoIP Network

## 2.6 Connecting to the PSTN

The TMP6400 features a variety of interfaces to the PSTN network. Each TMP6400 that makes connection with the PSTN will feature a PSTN interface.

### 2.6.1 Prerequisites

To connect the TMP6400s to the PSTN network, you must comply with one of the following:

- Your TMP6400 features 16 modular 8-conductor RJ48 type jacks for connection to T1/E1/J1 lines. You will need one cable for each (T1/E1/J1) interface on the TMP6400.
- Your TMP6400 features SCSI connectors for connection to T1/E1/J1 lines. You will require one patch panel for each 32 line group of T1/E1/J1 line interfaces on the TMP6400. Additionally, you will require a second patch panel for a second group of 33-64 lines.
- Your TMP6400 features BNC connectors for connection to DS3 lines. You will require two coaxial cables for each DS3 interface.
- Your TMP6400 features electrical or optical STM 1 connectors. You will require two fibre optic cables for the STM 1 interface of the TMP6400.

## 2.6.2 RJ-45 Interface (T1/E1/J1)

A TMP6400 with 16 RJ48 ports enables the connection to T1/E1/J1 lines. See figure 2.6 on page 17

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**Note** In order to use all 16 ports, you will need to buy upgrades to the base 4 ports in 4-port increments. For further information, contact TelcoBridges customer support.

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### To connect the TMP6400 (RJ-45) to the PSTN:

1. Start with port 1 located at the top and left-most position. Connect one cable between this port and the T1/E1/J1 line. figure 2.6 on page 17
2. Repeat step 1, using the next available port.

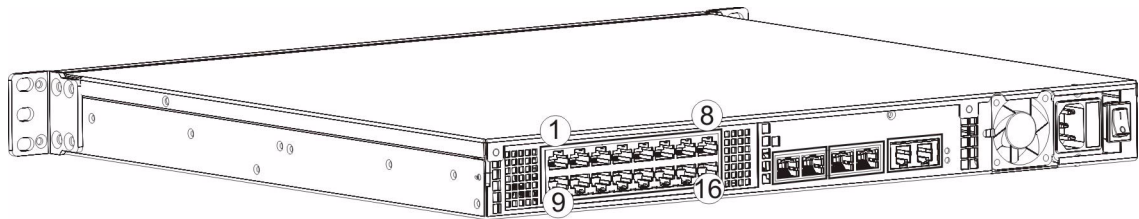


Figure 2.6 16-Port Interface to the PSTN

### 2.6.3 SCSI Interface (T1/E1/J1)

A TMP6400 with 4 SCSI connectors enables the connection to T1/E1/J1 lines. See figure 2.7 on page 18

**Note** In order to use all 4 SCSI connectors, you will need to buy upgrades to the base connector in single connector increments. For further information, contact TelcoBridges customer support.

**To connect the TMP6400 (SCSI) to the PSTN:**

1. Start with the SCSI port 1-16 located at the bottom right as shown in figure 2.7 on page 18. Connect one SCSI cable between this port and SCSI patch panel number 1, port 1-16. Connect SCSI port 17-32 to patch panel number 1, port 17-32.
2. Repeat step 1, using lines 33-64 using a second patch panel. Connect lines 33-48 to patch panel 2, port 1-16. Connect lines 49-64 to patch panel 2, ports 17-32.

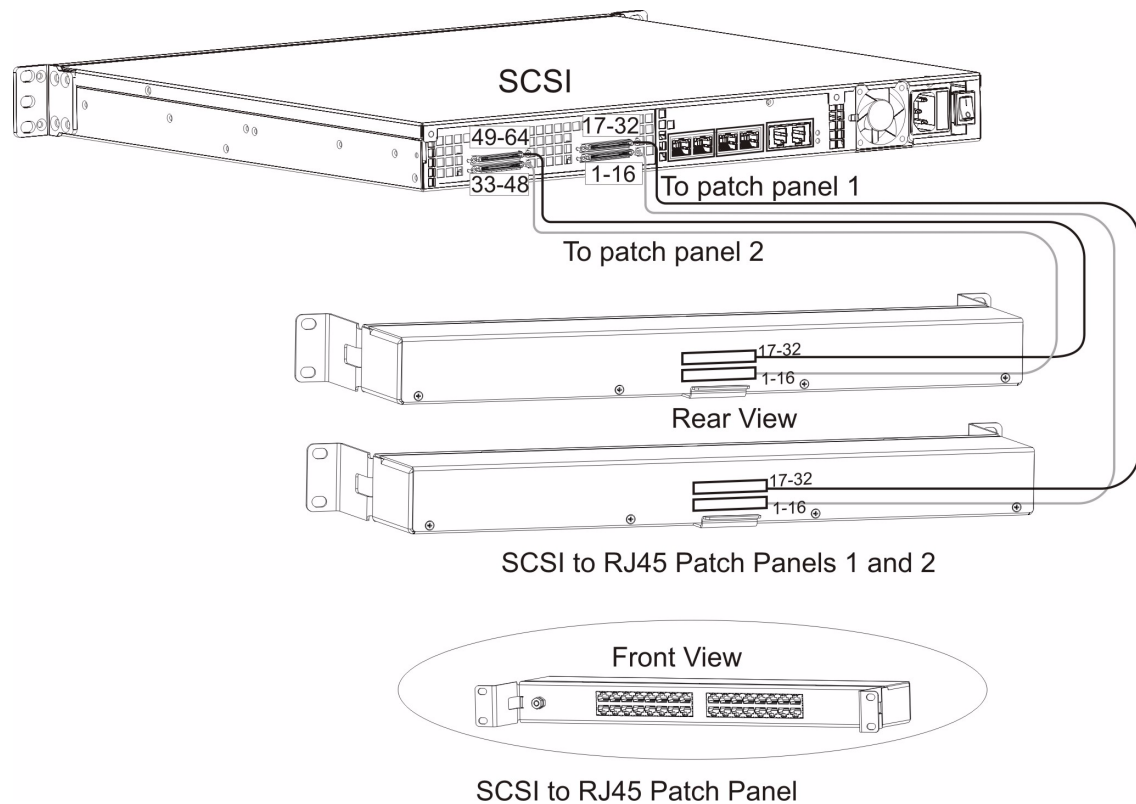


Figure 2.7 SCSI Interface to the PSTN



## 2.6.4 Dual BNC Interface (DS3)

A TMP6400 with 3 sets of BNC connectors enables the connection to DS3 lines. See figure 2.8 on page 19

**Note** In order to use all 3 sets of BNC ports, you will need to buy upgrades to the base pair of BNC ports in single pair increments. For further information, contact TelcoBridges customer support.

### To connect the TMP6400 (DS3) to the PSTN:

1. Start with the Dual BNC port pair #1 in the right-most position as shown in figure 2.8 on page 19. Connect one pair of BNC cables between this port and the DS3 line.
2. Repeat step 1, using the next available pair of BNC PSTN interface ports.

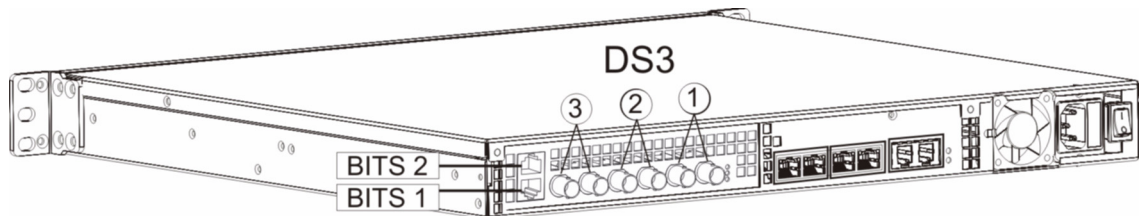


Figure 2.8 DS3 Interface to the PSTN

## 2.6.5 Optical Interface (OC3/STM-1)

A TMP6400, with one main and one backup OC3 or STM-1 port enables connection to OC3/STM-1 lines. See figure 2.9 on page 20. Refer to table 2.2 on page 20 for a listing of optical interfaces.

### To connect the TMP6400 (Optical Interface) to the PSTN:

1. Connect a fiber optic cable between the Main port and OC3/STM-1 line, as shown in figure 2.9 on page 20.
2. Connect a fiber optic cable between the APS port and OC3/STM-1 line.

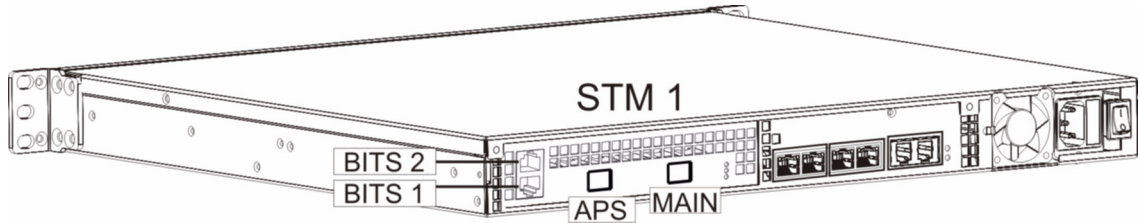


Figure 2.9 Optical Interface to the PSTN

Table 2.2 Optical Interfaces

Transceiver Model	Description	Spec	Mode	Type	Range (Km.)	Wavelength (NM)	Connection
SFP-OC3-MM	OC3/STM1	Hot Pluggable	Multi-mode (MMF)	Short reach	2	1310	LC
SFP-OC3-SR	OC3/STM1	Hot Pluggable	Single-mode	Short reach	2	1310	LC
SFP-OC3-IR1	OC3/STM1	Hot Pluggable	Single-mode	Intermediate reach	15	1310	LC
SFP-OC3-LR1	OC3/STM1	Hot Pluggable	Single-mode	Long reach	40	1310	LC
SFP-OC3-LR2	OC3/STM1	Hot Pluggable	Single-mode	Long reach	80	1550	LC
SFP-OC3-CWDM	OC3/STM1	Hot Pluggable	8 Wavelength	Long reach	80	<sup>a</sup>	LC
SFP-STM1E	STM1E (Electrical)	Hot Pluggable	75 ohms Cooper	Max 180m	<sup>b</sup>	NA	DIN (mini-coax)
OC3c-STM1-MM	OC3c-STM1	Soldered on PCB	Multi-mode	Short reach	2	1270-1380	SC
OC3c-STM1-SM	OC3c-STM1	Soldered on PCB	Multi-mode	Intermediate reach	15	1260-1360	SC
OC3c-STM1-LR	OC3c-STM1	Soldered on PCB	Multi-mode	Long reach	45	1260-1360	SC

a. 8 wavelength supported, special application only need to be validated

b. Variable range

## 2.7 Powering Up

Each Tmedia unit is furnished with one or optionally two AC or DC power connections. Only once all other equipment installation work has been completed should the Tmedia units be powered up.

### 2.7.1 Prerequisites

To power the Tmedia units, you will need:

- A power source, capable of powering all the Tmedia units.
- One power cable for each Tmedia unit. Optionally a second power cable is required if the Tmedia unit is furnished with a secondary power supply.

### 2.7.2 Connecting to AC Power

The Tmedia units are furnished with one or optionally two AC power connectors. figure 2.10 on page 22

**To connect the Tmedia units to AC Power:**

1. Connect one AC power cable between the AC connector of the Tmedia unit and an AC supply. See figure 2.10 on page 22. If the Tmedia unit features a second AC connector, connect an additional AC power cable between this connector and an AC power supply.
2. Repeat step 1 for each Tmedia unit until they have all been connected to a power source.
3. Power up each Tmedia unit by turning on their AC power switches

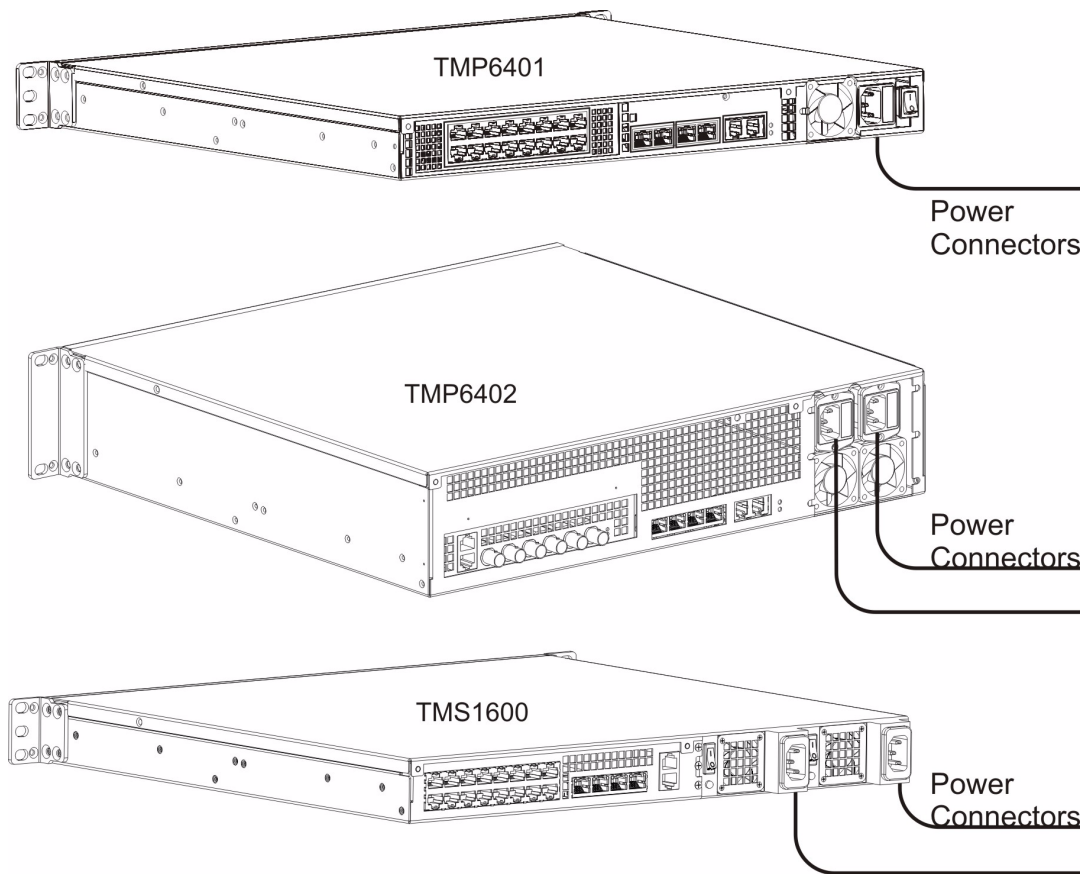


Figure 2.10 AC Power Connection

## 2.7.3 Connecting to DC Power

The Tmedia units are furnished with one or optionally two DC power connection ports. In addition, each DC powered Tmedia unit is supplied with a DC power cable.

**To connect the Tmedia units to DC Power:**

1. Connect the yellow wire of the DC power cable to the ground terminal of the Tmedia unit.
2. Connect the black wire of the DC power cable to the -48 volt terminal of the Tmedia unit.
3. If the Tmedia unit features a second DC supply, connect an additional DC power cable as indicated in the previous steps.
4. Repeat the above steps for each Tmedia unit until they have all been connected to a power source.
5. Power up each Tmedia unit.

## 2.7.4 Verifying the LED Status Indications

When all of the Tmedia units have been powered, verify the front panels of the units to determine that all indications are normal.

Once the Tmedia units have run successfully through their system boot procedures, the following will be displayed in an alternating fashion as described in Table 2.3 on page 24

Table 2.3 Tmedia Unit Displays

Display Order	Display
First Screen	IP 0: <ip address of eth0. E.g. 192.168.0.2> IP 1: <ip address of eth1 E.g. 192.168.0.3>
Second Screen	<board type.. eg. TMP-STM1, TMS-16, TMP-DS3, TMP-16, TMP-32, TMP-64> <adapter name e.g. TB002821> <serial number e.g. TB002821> <release used e.g V2.2.0 RC1>

# Chapter 3 Initial System Configuration

This chapter provides the initial procedures that are required in order for you to be able to use the Tmedia Web portal to configure your Tmedia units.

The following topics are covered:

- Connecting to the serial port of the Tmedia unit
- Configuring the terminal emulation application
- Using the `set_net` command
- Using the `print_net` command
- Creating a shell password
- Setting the debug output target system and trace level
- Using the `set_boot` and `print_boot` commands
- Setting the Tmedia unit front panel display mode
- Tmedia default IP addresses

## 3.1 Connecting to the Serial Port of the Tmedia Unit

To communicate with the Tmedia control network, you must first physically connect your computer port to the serial port of a Tmedia unit to configure the initial network settings that will enable you to communicate with all of the Tmedia units of your network.

### To connect to the serial port of a Tmedia unit:

1. Connect a CAT-5 RJ-45 (male-male) cable between the com port of your computer and the serial port of the Tmedia unit as shown in figure 3.1 on page 26. See table 3.1 on page 26 for a RJ-45 pinout description.
2. If your computer's serial port features a DB9 connector, use the DB9 to RJ-45 adapter supplied with your Tmedia unit. If your computer's serial port features a USB connector, you will need to provide a USB to DB9 adaptor. Refer to figure 3.2 on page 26.

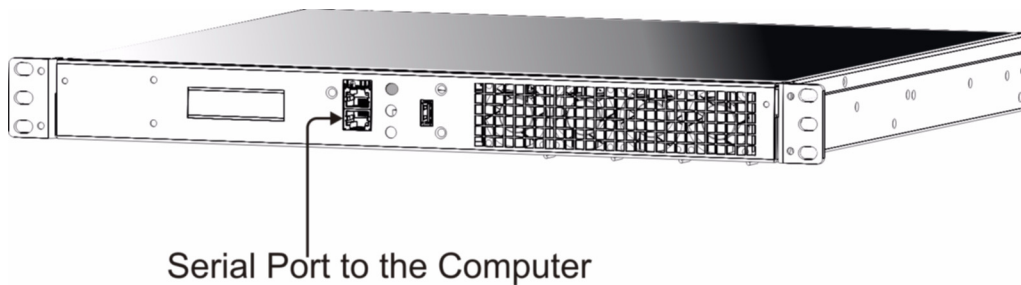


Figure 3.1 Computer to Tmedia Unit Serial Port Connection

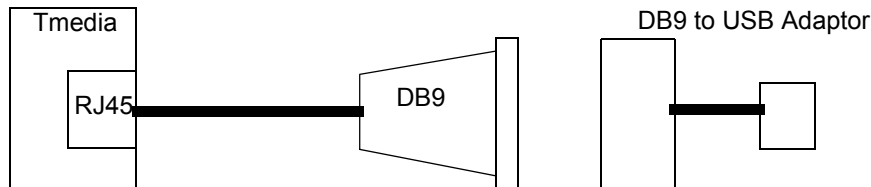


Figure 3.2 Conceptual View of a Serial Connection from the Tmedia unit to a Computer

Table 3.1 Ethernet RJ-45 Pinout

Pin Number	Description
1	Bi-directional pair A+
2	Bi-directional pair A-
3	Bi-directional pair B+
4	Bi-directional pair C+
5	Bi-directional pair C-
6	Bi-directional pair B-
7	Bi-directional pair D+
8	Bi-directional pair D-



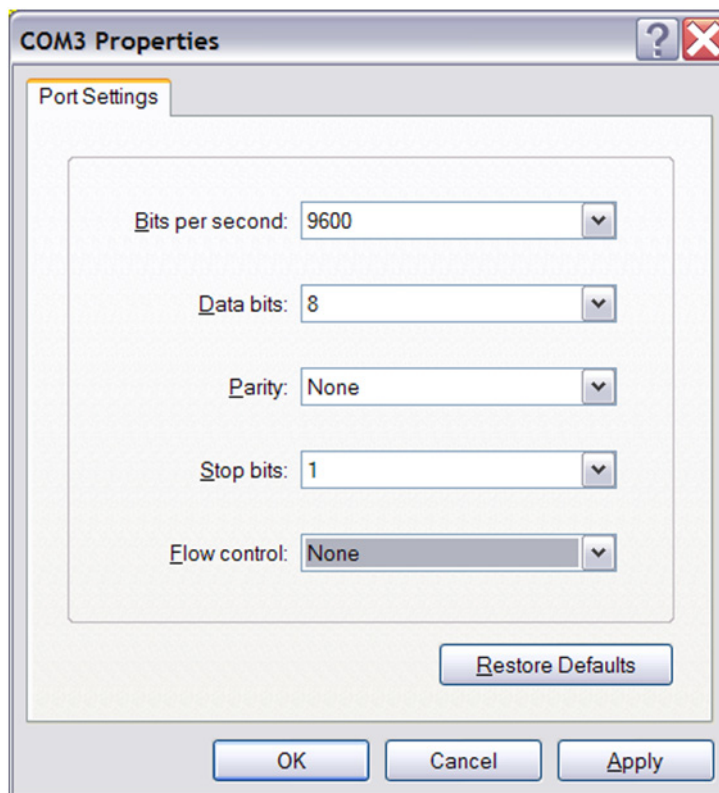
## 3.2 Configuring the Terminal Emulator Application

In order to communicate with the Tmedia control network, you must first configure a terminal emulator or console application to communicate with one of the Tmedia units in order to configure initial settings. Some available terminal emulation software are:

- HyperTerminal
- Putty

**To configure the terminal emulator application:**

1. Set the baud rate (bits per second) to **9600**
2. Set the data rate to **8 bits**
3. Set the parity to **None**
4. Set the stop bits to **1**
5. Set the flow control to **None**



### 3.3 Using the set\_boot and print\_boot Commands

The set\_boot command can be used to modify certain settings and the print\_boot command can be used to review the changes. Using the set\_boot command, the values of the UDP gateway port can be configured.

---

**Note** Do not confuse the UDP gateway port with the IP gateway address.

The UDP gateway port is used to control the Tmedia units and TelcoBridges strongly recommends that this setting be left at its default value: 12358.

Tmedia units on the same UDP gateway port will be automatically detected by any application using the TBX host library on the same UDP gateway port.

Different UDP gateway ports can be useful for the segmentation of application development from deployments that are both configured to operate on the same physical network and IP subnet. Make certain that all applications are configured to use the same values.

For further information, contact TelcoBridges Technical Support.

---

**To modify boot settings:**

1. Type `set_boot` and press the **Enter** key to move to the next prompt

```

0/tbgw>set_boot

Press <ENTER> to use the existing value,
or insert a new value and press <ENTER>.
active cfg (max 80 char) (<cfgname>)=TB2933_TEST? :
autoboot (y|n)=y? :
autofsload (y|n)=y? :
boottimeout (max=255)=5? :
gateway port (TBX_GW_PORT= 12358 )? :

Press <ENTER> to use the existing value,
or insert a new value and press <ENTER>.
adapter name (max 80 char) (<adaptername>)=TB002933? :
eth dhcp (y|n)=n? :
eth0 Ip Address (ipaddr)=10.2.0.140? :
eth0 Netmask (nmaddr)=255.255.255.0? :
eth0 Gateway (gwaddr)=10.2.0.1? :
eth1 Ip Address (ipaddr)=10.2.1.140? :
eth1 Netmask (nmaddr)=255.255.255.0? :
eth1 Gateway (gwaddr)=10.2.1.1? :
voip0 Ip Address (ipaddr)=10.2.2.140? :
voip0 Netmask (nmaddr)=255.255.255.0? :
voip0 Gateway (gwaddr)=10.2.2.1? :
voip1 Ip Address (ipaddr)=10.2.3.140? :
voip1 Netmask (nmaddr)=255.255.255.0? :
voip1 Gateway (gwaddr)=10.2.3.1? :
mgnt dhcp (y|n)=n? :
mgnt Ip Address (ipaddr)=172.31.5.140? :
mgnt Netmask (nmaddr)=255.255.255.0? :
mgnt Gateway (gwaddr)=172.31.5.1? :

List of available boot directories:
/
  licenses
  2_0_6.1
  02020101 (2_2_1.1)
  02010a01 (2_1_10.1)
  2_2_0.4
Curr Boot dir.....: /ffs/02020101/
Good Boot dir.....: /02020101
Next Boot dir.....: /02020101
nextbootdir (max 80 char) (<validbootdir>)=/02020101? :
0/tbgw>

```

The following prompts are displayed:

Prompt	Description
Adapter Name	Name of the Tmedia unit. This character string must uniquely identify the Tmedia unit. The default value is the serial number of the Tmedia unit.
DHCP	Dynamic IP address is used when the Tmedia unit is started. Currently not supported.
eth0/eth1/VoIP0: IP Address	When you are not using DHCP, the IP address is used as the static IP address for ports Ethernet 0, Ethernet 1, and VoIP0 of the Tmedia unit.

Prompt	Description
eth0/eth1/VoIP: NetMask	When you are not using DHCP, the network mask is used for ports Ethernet 0, Ethernet 1, and VoIP0 of the Tmedia unit.
eth0/eth1/VoIP1: Gateway	When you are not using DHCP, the gateway address is used for ports Ethernet 0, Ethernet 1, and VoIP0 of the Tmedia unit. If you are planning to use the Tmedia unit in the same subnet as the host (i.e. you do not require access to an IP address outside the subnet), then the gateway can be set to '127.0.0.1'.

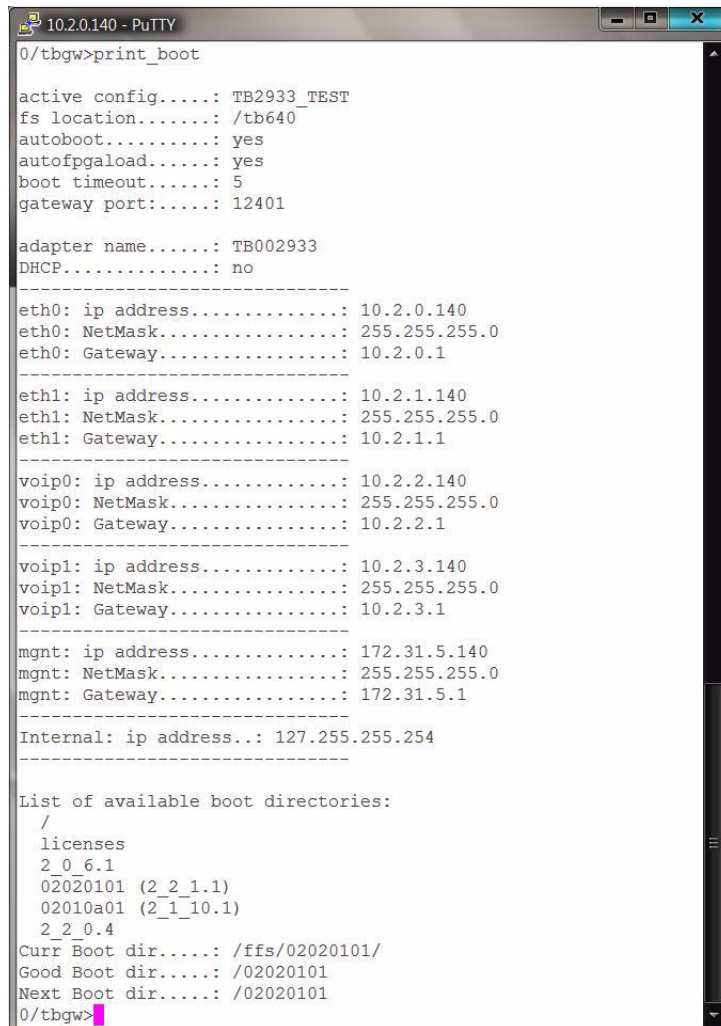
---

**Note** VoIP0 must be on a different subnet other than ETH0 or ETH1. For example, if the netmask is 255.255.0.0 and port ETH0's IP address is 192.168.1.10, the VoIP0 port cannot be on any IP address starting with 192.168.x.x.

---

**To view the results of a set\_boot command:**

1. Type print\_boot



```
10.2.0.140 - PuTTY
0/tbgw>print_boot

active config.....: TB2933_TEST
fs location.....: /tb640
autoboot.....: yes
autofpgaload.....: yes
boot timeout.....: 5
gateway port.....: 12401

adapter name.....: TB002933
DHCP.....: no
-----
eth0: ip address.....: 10.2.0.140
eth0: NetMask.....: 255.255.255.0
eth0: Gateway.....: 10.2.0.1
-----
eth1: ip address.....: 10.2.1.140
eth1: NetMask.....: 255.255.255.0
eth1: Gateway.....: 10.2.1.1
-----
voip0: ip address.....: 10.2.2.140
voip0: NetMask.....: 255.255.255.0
voip0: Gateway.....: 10.2.2.1
-----
voip1: ip address.....: 10.2.3.140
voip1: NetMask.....: 255.255.255.0
voip1: Gateway.....: 10.2.3.1
-----
mgmt: ip address.....: 172.31.5.140
mgmt: NetMask.....: 255.255.255.0
mgmt: Gateway.....: 172.31.5.1
-----
Internal: ip address..: 127.255.255.254
-----

List of available boot directories:
/
 licenses
 2_0_6.1
 02020101 (2_2_1.1)
 02010a01 (2_1_10.1)
 2_2_0.4
Curr Boot dir.....: /ffs/02020101/
Good Boot dir.....: /02020101
Next Boot dir.....: /02020101
0/tbgw>
```

## 3.4 Creating a Shell Password

Access to the shell commands may be protected with a password.

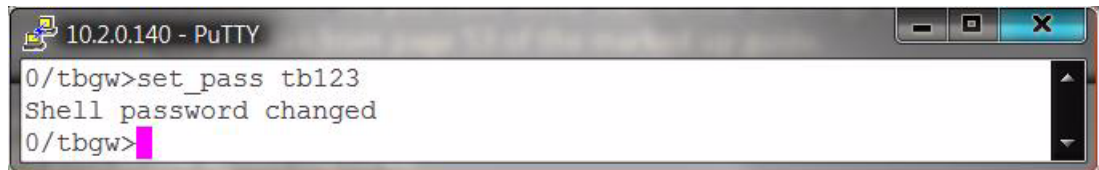
---

**Note** By default, access to the shell commands is not password protected.

---

### To create a password:

1. At the shell prompt, type **set\_pass** <your password>.



```
10.2.0.140 - PuTTY
0/tbgw>set_pass tb123
Shell password changed
0/tbgw>
```

2. Restart the Tmedia unit. This will reset the Tmedia unit and add the enable and disable shell password commands to the console commands list.

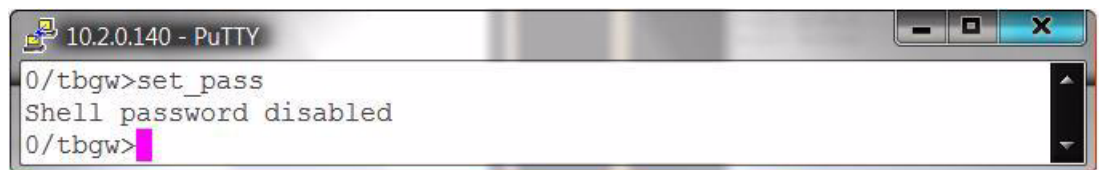
Once the shell password has been set, it cannot be changed unless you are in the **Enabled** mode. The enabled mode provides you with access to operation sensitive commands.

### To enter the enabled mode:

1. At the shell prompt, type **enable** <your password>.

### To clear the password mode:

1. At the shell prompt, type **set\_pass** (without entering a password).



```
10.2.0.140 - PuTTY
0/tbgw>set_pass
Shell password disabled
0/tbgw>
```

### To exit the enabled mode:

1. At the shell prompt, type **disable**.

## 3.5 Setting the Debug Output Target System and Trace Level

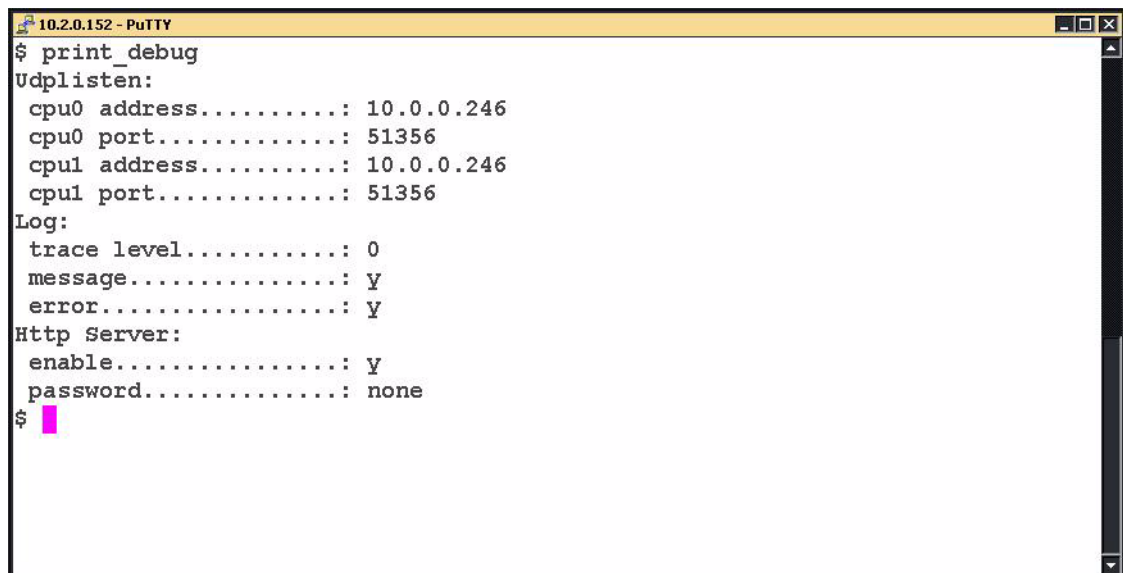
The debug output (also called udplisten log) from any TelcoBridges Tmedia unit can be sent to a target system for analysis. This is useful for debugging applications and systems. Each TelcoBridges Tmedia unit can send UDP packets on a particular UDP port. CPU0 and CPU1 debug output will send different information, but they can be sent to the same target system. CPU0 must be on the same subnet as ETH0, and CPU1/ETH1.

The default trace configuration is used to log errors only. In some cases, the support group may ask you to change these values. Once the test is complete these parameters should be set back to their default state (trace level:0, message:n, error:y)

The HTTP Server is used to access internal states of the Tmedia unit with HTTP. The support group may ask you to do this. Otherwise this function should not be used. For protection, a password should be placed on this access.

### To view the configuration:

1. At the shell prompt, type `print_debug`



```
10.2.0.152 - PuTTY
$ print_debug
Udplisten:
cpu0 address.....: 10.0.0.246
cpu0 port.....: 51356
cpu1 address.....: 10.0.0.246
cpu1 port.....: 51356
Log:
trace level.....: 0
message.....: y
error.....: y
Http Server:
enable.....: y
password.....: none
$
```

## 3.6 Tmedia Default IP Addresses

All Tmedia units are shipped with default IP addresses, as follows:

- Eth0: ip address: 192.168.0.2
- Eth0: Netmask: 255.255.255.0
- Eth0: Gateway: 192.168.0.1
- Eth1: ip address: 192.168.0.3
- Eth1: Netmask: 255.255.255.0
- Eth1: Gateway: 192.168.0.1





# Chapter 4      Toolpack Installation

This chapter provides a brief introduction of Toolpack software and provides a listing of the various versions of Toolpack Installation guides geared towards your specific operating system.

## 4.1 ToolPack Operating System Platforms

TelcoBridges Toolpack software is designed to work with the following operating systems:

- Windows™
- Solaris™
- Linux®

Depending upon your choice of operating system, you must consult a Toolpack installation guide specific to your operating system. These documents are listed in table 4.1.

Table 4.1 Toolpack Installation Guides

Document Name	Document Number
Tmedia Toolpack Installation Guide for Windows	9010-00162-1A
Tmedia Toolpack Installation Guide for Linux	9010-00163-1A
Tmedia Toolpack Installation Guide for Solaris	9010-00164-1A

- Base Development Package
- Toolpack System
- Toolpack Stream Server
- Toolpack System Database
- Toolpack System Web Portal

## 4.2 Installation Guidelines

Follow the instructions of your Toolpack installation guide by first retrieving all the indicated software and then proceeding with their installation.

# Chapter 5 System Upgrades

The TelcoBridges Tmedia units start up from a local system file located in flash memory. The flash memory is furnished with a version of firmware available at the time of production. You must install the firmware package that you will be using.

If you are unsure of which firmware release to install, please contact TelcoBridges customer support.

This chapter provides procedures related to the administration of firmware packages.

The following topics are covered:

- Installing a firmware package
- Removing a firmware package
- Installing a new license

## 5.1 Installing a Firmware Package

### To install a new firmware package on the local file system:

1. Start the installation tool located in the OS-specific package in the `/tb/bin/release/<proc-OS-arch>/` directory.
2. The installation tool should detect all available Tmedia units in the network. If more than one Tmedia unit is discovered, select the Tmedia unit to which the firmware package is to be installed.
3. Select option 20: Install a package.
  - 3a. When asked for the path of the package file, enter the path of the file "tb640.pkg" found in the package `tb640-adapter.debug.zip` under `/tb/bin`.
  - 3b. When asked, enter the directory name in which the firmware package is to be installed. The default name will be the release number as the directory name. For example: "94-8\_4".
  - 3c. When asked for the path of the license file, enter the path where you saved the license file (XX\_TB000XXX\_RELEASE\_VX\_XX\_RCX\_license.dat) that you received from the TelcoBridges support group.

It is important that you use the license file intended for the package. You must know the serial number of the TelcoBridges Tmedia unit to be able to choose the right license. For example, you may have a license file named, `WD_TB000103_RELEASE_V0_94_8_RC4_license.dat` for a Tmedia unit with the serial number TB000103 and release 0.94.

4. After the installation package is installed, select option 12: Set the next boot directory and select the directory you just installed the package on.
5. Type yes to restart the Tmedia unit.

---

**Note**            Should this, or any other future firmware package not function and fail to properly start the Tmedia unit, the last known good boot directory will be used instead.

---

## 5.2 Removing a Firmware Package

A firmware package is approximately 18 MB in size. The flash memory of a Tmedia unit is 128 MB. Before you exceed the flash memory limit, it is recommended that you remove any unused firmware packages from the flash memory.

### To remove a firmware package from the local file system:

1. Start the install tool located in the `/tb/bin/release/<proc-OS-arch>/` directory.
2. Select option 21: remove a package.
3. Enter the number associated with the package to remove.

## 5.3 Installing a New License

### To install a new license:

1. Start the installation tool located in the /tb/bin/release/<proc-OS-arch>/ directory.
2. Select option 22: Install a license.

When you are asked for the path of the license file, enter the path in which you saved the license file (XX\_TB000XXX\_RELEASE\_VX\_XX\_RCX\_license.dat) received from the TelcoBridges support group.

It is important that you use the license file that has the same version as the package installed on the Tmedia unit. You must know the serial number of the TelcoBridges Tmedia unit to be able to choose the right license. For example, you may have license WD\_TB000103\_RELEASE\_V0\_79\_RC5\_license.dat for a Tmedia unit with the serial number TB000103 and for release 0.79.

3. Restart the TelcoBridges Tmedia unit, if needed.

---

<b>Note</b>	<p>The license installed can be verified by using option 34 and option 2 of the installation program.</p> <p>The installed license can be verified only if the firmware loaded is the same as the running firmware (same versions). This can be verified using option 10.</p> <p>To verify a license on another firmware, set the next boot directory (option 12) and restart the Tmedia unit.</p> <p>When a license expires, the Tmedia unit restarts by itself and no features will be available until a new license is installed.</p>
-------------	--

---

Some licenses can be upgraded live without restarting the TelcoBridges Tmedia unit, others cannot.

Do not restart the TelcoBridges Tmedia unit if:

- The license's expiry time is extended or becomes permanent. For example, the expiry date is September and there is an extension until November.
- The license adds features to an existing feature. For example, there are 120 IVR features activated, and the new license provides 240 voice processing resources.

Restart the TelcoBridges Tmedia unit if:

- The old license has expired and an extended or permanent license has been installed.
- A new feature has been added. For example, adding additional physical interfaces is in the new license, however, it is not in the old license.



# Chapter 6 Troubleshooting Tools

This chapter provides guidance in what actions to take when encountering system problems prior to contacting TelcoBridges Customer Support.

The following topics are covered:

- Reporting a Problem
- Preparing your setup information
- tblogtrace or Udplisten Log
- Tb640 Debug Dump Files
- Application Logs
- Backdoor Tools
- tbsigtrace signaling traces
- General Debugging Tips

## 6.1 Reporting a Problem

TelcoBridges has developed extensive tools to gather information about a Tmedia system to solve problems quickly. Users **MUST** gather all related logs before reporting a problem to TelcoBridges Support via Email or MSN. Various logging method are described in the following sections.

Once information is gathered and sent to the TelcoBridges Support group ([support@telcobridges.com](mailto:support@telcobridges.com)), the Support group will assign a tracking number to the problem. All follow-up correspondence, whether it be email, MSN, or phone call must refer to which tracking number the problem has been assigned.

## 6.2 Setup Information

The setup information must include:

- Physical connections. If necessary, describe it in a network diagram.
- Specify if your product is a TMG3200 or a TMP6400
- Host controlling the TMP6400s (manufacturer, CPU type, memory, OS version and patch level, Ethernet interface details)
- Telecommunication connectivity diagram (for example: E1/T1/J1, DS3, STM-1/OC-3, VoIP Ethernet switch, etc)
- Application description
- Remote access to system (VPN, VNC, Remote desktop, etc.)
- For a signaling related problem, specify which side is initiating the call

## 6.3 tblogtrace or udplisten Log (Mandatory)

This program is now started automatically by Toolpack. The Logs are described in Section 6.5 “Application Logs” on page 44.

Useful information about this application is listed as follows:

- Udplisten log captures events from the system at run-time.
- The TMP6400s transmits its system messages as UDP ASCII packets.
- Users need to setup both the TMP6400s to send the UDP packets as well as the host to collect the UDP packets.
- The udplisten log **MUST** be setup to gather information at all times, when developing the application and also in a live system. In this way, Telcobridges can identify a problem even if it occurred in the past.

To setup debug logging on TMP6400s and host server see below:

Example:

```

TMedia  eth0 IP 192.168.0.2    eth1 IP 192.168.1.2
Host    eth0 IP 192.168.0.123   eth1 IP 192.168.1.123

```



Telnet to the TMedia (192.168.0.2) and do the following:

```
$ set_debug
```

Press <ENTER> to use the existing value, or insert a new value and press <ENTER>

```
cpu0 udp listen address (ipaddr)=127.0.0.1? : 192.168.0.123
cpul udp listen address (ipaddr)=127.0.0.1? : 192.168.1.123
cpu0 udp listen port (port)=50011? :
cpul udp listen port (port)=50011? :
log trace level (level)=0? :
log message (y|n)=y? :
log error (y|n)=y? :
http enable (y|n)=y?
```

On the host, run:

```
tb\apps\udplisten\release\[OS-version]
$ udplisten
```

Usage : udplisten <port> [<logfile> <max filesize in kb> <max files> <use\_stdin> <h\_scroll> <split\_by\_src\_ip>]

For example: udplisten 50011 udplisten.log 1024 10 true 0 false

```
$ udplisten 50011 udplisten.log 1024 10 true 0 false
```

Or

```
$ tblogtrace 50011 udplisten.log 1024 10 true 0 false
```

When verifying the udplisten log, errors or failures are usually shown in RED in the console or for lines displaying 'E '. Either of these two conditions should be reported to TelcoBridges.

## 6.4 Tb640debug Dump Files (Mandatory)

The tb640debug copies information about TelcoBridges libraries and TMP6400s into log files. This includes software, the release running on the host, the firmware release running on the TMP6400, TMP6400 information, available features, configuration, and status information.

The tb640debug files must be sent when a problem is reported. If the problem is reproducible, the tb640debug dump files are verified before and after the problem is reproduced. This will aid in identifying the problem quickly.

To run the application:

```
/home/toolpack_home/release_[minor release]/tb/bin/release/[OS version]/
tb640debug
```

Choose the TMP from which you wish to get information, or choose "-1" for all.

The command can also be entered as: tb640debug -all

## 6.5 Application Logs

All Toolpack applications will produce logs. The trace level can be set to vary the amount of logs that are received from the system. Trace level 0 is the most verbose and 4 is the least. Important errors are always logged.

`/lib/tb/toolpack/setup/[major version]/apps/gateway` (Or customer's application)

```
listen
tboamapp
tbstreamserver
toolpack_engine
toolpack_sys_manager
/lib/tb/toolpack/
tbtoolpack_service
/lib/tb/toolpack/pkg/[minor version]/web
Log
Database dump:
mysqldump -u [username] -password=[password] -opt tbdb_2_x > tbdb_2_x.sql
```

## 6.6 Backdoor Tools

A number of backdoor tools are available as follows:

- `Tbx_cli_tools_remote`
- HA Monitor
- `Tbshowls`
- VoIP Traffic Capture
- Wireshark
- `tbstreamlisten`
- Stream server audio packets to wave file

### 6.6.1 `tbx_cli_tools_remote`

The `tbx_cli_tools_remote` tool (`/lib/tb/toolpack/pkg/[minor version]/bin/release/[OS version]`) can be used to get the text-based GUI control of TB applications like `Toolpack_Engine`, `Toolpack_sys_manager`, `tbstreamserver`, and others which are run in background.

Start the tool and press the letter corresponding to the application to be controlled. Press Escape key twice to escape from the control.

### 6.6.2 HA Monitor

This application can monitor blades, trunks, links, call state, and more.

```
tb\src\samples\ss7_ha\ss7_ha_monitor
```

### 6.6.3 Line/Trunk Status (Tbshowls)

```
TBShowls (/home/toolpack_home/release_[minor release]/tb/bin/release/[OS version]/)
```

Tbshowls can be used to show trunk alarm and performance counters. The tool will check the trunk status periodically to show the most updated trunk status. Users can use the up/down/left/right arrow key to show the performance data on different trunks.

Options 'G' and 'S' enable you to get and set the trunk interface parameters.

Option 'R' can be used to reset the performance counter value to zero.

It is also possible to allocate all line interfaces in different configurations.

### 6.6.4 VoIP Traffic Capture

When troubleshooting VoIP related issues, a direct Ethernet connection can be established between the host's Gigabit Ethernet interface and the voip1 interface on the TMP6400. Wireshark is connected on the Gigabit Ethernet interface on the host server

**To capture VoIP Traffic, do the following:**

1. Connect VoIP1 interface to Ethernet port of a server
2. Telnet to TMP6400
3. Type this command:

```
mv88eMonitor 0x4 0x4 3 (Copies everything from VoIP0 to VoIP1) *
```

4. Start pcap capture on the server Ethernet port (either wireshark or tcpdump)
5. To stop the tracing:

```
mv88eMonitor 0 0 3
```

---

**Note** This commands is not available on the TB640

---

### 6.6.5 Wireshark (formerly called Ethereal)

Wireshark is useful for capturing both VoIP traffic as well as Streamserver packets.

This program is available at this site: [www.wireshark.org](http://www.wireshark.org)

### 6.6.6 Tbstreamlisten

```
tb\apps\tbstreamlisten\release\[OS version]
```

More information will follow in subsequent issues of this document

## 6.6.7 Stream Server Audio Packets to Wave File

It is possible to capture all audio packets transmitted to and from the Stream Server and to convert them into wave files for analysis. You can use Wireshark or tcpdump on the server running the tstreamserver application.

The conversion tool, streamserver\_pkt\_to\_wav can be found at the following location:

/home/toolpack\_home/release\_[minor release]/tb/bin/release/[OS version]/ directory.

## 6.7 tbsigtrace Signaling Traces

Tbsigtrace (tb\apps\tbsigtrace\release\[OS-version]) is a tool used to capture signaling traces including ISDN (Q.921), SS7, SIP (TUCL) and H.223 (H324M) and then dump the signaling traces into log files.

The tool can be configured to monitor signaling channels for up to 2 TMP6400s at the same time. The tbsigtrace configuration file should be updated before starting the tbsigtrace tool. The default filename for the tbsigtrace configuration file is simscript.txt. The following is the format of the configuration file:

```
<Q921ANALYZER|SS7ANALYZER|TUCLANALYZER|H223ANALYZER|H223CTBUSANALYSER> <Adapter selector, either 1 or 2> <Protocol specific parameters>
```

### 6.7.1 ISDN PRI Analyzer Specific Parameters

For E1, timeslot 16:

```
Q921ANALYZER <adapter selector> <trunk number> 0x00010000 <DumpType:RAW|FORMAT>
```

For T1, timeslot 24:

```
Q921ANALYZER <adapter selector> <trunk number> 0x00100000 <DumpType:RAW|FORMAT>
```

The DumpType can be RAW or FORMAT.

In a RAW dump type, the output file will show the HDLC packets as binary only.

In a FORMAT dump type, the output file will show the decoded HDLC according to Q.921 and Q.931 specifications. More than one Q921ANALYZER line can be put in the simscript.txt to capture more than one ISDN stack.

### 6.7.2 SS7 Analyzer Specific Parameters

```
SS7ANALYZER <adapter selector> <trunk number> <Timeslot bitfield>  
<DumpType:RAW|FORMAT|TEXT2PCAP>
```

Timeslot bitfield identifies which timeslot(s) in the trunk to be used for tracing, i.e. 2timeslot.

For example:

- 0x00000002 = timeslot 1
- 0x00000004 = timeslot 2

- 0x00000006 = timeslot 1 and 2
- 0x00010000 = timeslot 16
- 0x01000000 = timeslot 24
- 0xFFFFFFFF7 = timeslot 1-31 (for capture SS7 HSL)

DumpType can be RAW, FORMAT or TEXT2PCAP.

In a RAW dump type, the output file will show the HDLC packets as binary only.

In a FORMAT dump type, the output file will show the decoded HDLC according to MTP2, MTP3 and ISUP specifications.

Using TEXT2PCAP dump type, the tbsigtrace will print the HDLC packets out as individual bytes, which can be formatted by the text2pcap.exe tool (available from Wireshark) into a capture file that can be opened by the Wireshark analyzer.

For example, the following is a command line for text2pcap.exe:

```
$ text2pcap -t %H:%M:%S. -l 139 ss7trace01_00_00000002_001.txt
ss7trace01_00_00000002_001.cap
```

ss7trace01\_00\_00000002\_001.cap is ready to be opened by Wireshark.

More than one SS7ANALYZER lines can be placed in the simscript.txt to capture than one SS7 signaling links.

### 6.7.3 SIP Analyzer Specific Parameters

```
TUCLANALYZER <adapter selector> <Ethernet port:eth0|voip0> <Transport:1 for udp|0 for
any> <Port:5060> <RemoteIPMask: 255.255.255.255 to trace all peers> <
DumpType:FORMAT>
```

The DumpType can only be FORMAT.

In a FORMAT dump type, the output file will show the decoded SIP messages

An example SIP capture:

```
TUCLANALYZER 1 voip0 1 5060 255.255.255.255 FORMAT
```

---

**Note** TUCL is a TCP/UDP adaptation layer

---

## 6.7.4 Working Example

The following is a working example:

```

Start of Menu
1. Get list of adapters and select 1 or 2 adapters
2. Load script file for setting LAPD loopbacks and other configs
10. Close all opened dump files (new ones will be reopened)
0. Quit
1
Get adapter list
List of available TB640 adapters:
1 Adapters available:
-----
Adapter #1, Name: TB000001 SlotId: 4, ShelfId: 31
Adapter #2, Name: TB000002 SlotId: 5, ShelfId: 31
-----
Which Adapter to use? <enter> (0 to end) 2
Which Adapter to use? <enter> (0 to end) 0
Start of Menu
1. Get list of adapters and select 1 or 2 adapters
2. Load script file for setting LAPD loopbacks and other configs
10. Close all opened dump files (new ones will be reopened)
0. Quit
2
Load script file
Which file?
1. Default file (simscript.txt)
2. Enter new filename
1
Tuc1Analyzer 1          eth0      udp      5060      255.255.255.255      FORMAT
Q921ANALYZER 1 0 0x00010000 FORMAT
SS7ANALYZER  1 1 0x00000002 TEXT2PCAP
End of Commands
Start of Menu
1. Get list of adapters and select 1 or 2 adapters
2. Load script file for setting LAPD loopbacks and other configs
10. Close all opened dump files (new ones will be reopened)
0. Quit

```

## 6.8 General Debugging Tips

Logs are important because they enable us to find out about the exact environment in order to repeat the problem.

Network configuration is important because it tells us:

- If the host applications (or TB applications) are running on a host having more than 2 Ethernet interfaces or having more than 1 IP address on the same Ethernet interface. The TBX\_GW\_ADDRESS\_0 and TBX\_GW\_ADDRESS\_1 must be set to match with the subnet used for eth0 and eth1 of the TB hardware products.

If you need to separate different systems running on the same network, the communication port TBX\_GW\_PORT used on the Tmedia units and the application can be changed.

To set the TBX\_GW\_PORT on the Tmedia units, do the following:

- telnet to the hardware and do set\_boot to change the gateway port.

The default value is 12358.

To set the TBX\_GW\_PORT for the pre-compiled TB applications:

- set the TBX\_GW\_PORT config.txt file of the TB applications. If zero is used, the application will look for the environment variable TBX\_GW\_PORT for the gateway port value. If the variable is missing, the default port 12358 will be used.

To set the TBX\_GW\_PORT for user application:

- set the un32GwPort parameter in the TBX library parameters. If zero is used, the application will look for the environment variable TBX\_GW\_PORT for the gateway port value. If the variable is missing, the default port 12358 will be used.

