
Nortel Symposium

Network Manager's Guide

Reference Guide
for
Installing, Configuring, and Maintaining the
Symposium TAPI Service Provider
for Meridian 1 Release 2



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Reference Guide for the Symposium TAPI Service Provider
for Meridian 1 Release 2**

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About this Guide

This *Network Manager's Guide* describes how to install and maintain the Symposium TAPI Service Provider for Meridian 1 Release 2. The Symposium TAPI Service Provider for Meridian 1 Release 2 is also referred to as the Symposium TAPI Service Provider in this document. Information in this document is intended for use by Meridian 1 users who have bought or developed a TAPI-compliant application and need a Symposium TAPI Service Provider platform to support the deployment of the application or for application developers who want to write TAPI-compliant applications for deployment on the Meridian 1.

Note: Exercise caution while performing tasks that may disrupt service. These tasks include taking the Meridian Link off-line, resetting the Meridian Link, reloading the Meridian 1 Windows NT Service driver and changing initialization parameters.

This guide is divided into the following chapters and appendices:

- Chapter 1, "Overview," provides an overview of the Symposium TAPI Service Provider and summarizes features supported by the Symposium TAPI Service Provider.
 - Chapter 2, "Installation," summarizes the installation process and describes in detail how to complete the Symposium TAPI Service Provider installation.
 - Chapter 3, "Configuration" provides information on configuring the Symposium TAPI Service Provider, using the Configurator application.
 - Chapter 4, "Microsoft TAPI 2.1 Upgrade and TCMAPP Configuration," provides the steps to upgrade Microsoft TAPI to 2.1 and to set up the TCMAPP.
 - Chapter 5, "Additional Tools," describes the ACDProxy Service provided with the Symposium TAPI Service Provider. Also, some tips on using IVR and Microsoft Outlook are included.
 - Chapter 6, "Troubleshooting Tools," details the Troubleshooting applications provided with the Nortel Symposium TAPI Service Provider.
 - Chapter 7, "Troubleshooting Tips," provides possible problems and the actions to take to resolve these problems.
- The Appendices provide additional information that may be useful when using the Symposium TAPI Service Provider.

This guide also contains a Glossary that lists telephony services terms and definitions used in this document. A Table of Contents and Index provide assist you in locating the desired information.

Document Conventions

The following conventions are used in this document:

1. The individual keys that users are instructed to press appear inside angle brackets.
For example: <Enter> or <F1>
2. “**Press,**” “**Choose,**” or “**Click on**” means to position the cursor over an option, then press and release the left mouse button to activate control and carry out an action.
3. “**Select**” means to position the cursor over an option, then press and release the left mouse button to highlight the selection.
4. “**Double-click**” means to position the cursor over an option, then press and release the left mouse button twice.
5. Information that users are instructed to type appears in bold, italic print.
For example: Type *User Id* or Enter *User Id*
6. Menu commands and options that are displayed on the window appear in bold print, such as the **Exit** option located on the **File** menu on the Menu bar.
7. Window, screen, dialog box, or data entry field names display in italic print, such as, the *Open* field on the *Run* dialog box.
8. “**Button**” refers to a click or push button displayed on the window that is clicked on or pressed to carry out an action. **For example:** Click on the **OK** button or Click on 
9. “**Check box**” refers to a square box displayed on the window that is clicked on to select or to clear an option. **For example:** -- option not selected or -- option selected
10. “**Option**” or “**Radio**” button refers to a circle displayed on the window that is clicked on to select or to clear an option. **For example:** -- option is not selected or -- option is selected
11. **Note:** Identifies important User information and special instructions.

Note: Notes display in paragraphs separated from other text.

Online Documentation

The User documents for the Symposium TAPI Service Provider for Meridian 1 Release 2 (Symposium TAPI Service Provider) are provided electronically as online documents. One or more of these documents are contained on the Symposium TAPI Service Provider CD ROM in the **DOC** directory. The online documents are described in the following table:

 Document Name	File Name	Description
<i>Network Manager's Guide for the Symposium TAPI Service Provider for Meridian 1 Release 2</i>	ntmgr.pdf	This user's guide provides information on installing, configuring, and using Symposium TAPI Service Provider for Meridian 1.
<i>Programmer's Guide Volume 1 for the Symposium TAPI Service Provider for Meridian 1 Release 2</i>	prmgr.pdf	This document contains information that is helpful to developers who are writing applications that may use the Symposium TAPI Service Provider for Meridian 1. This document may or may not be available on your CD ROM.
<i>IVR/CTI Systems Integration</i>	prmgrV3.pdf	This document provides information on IVR/CTI Systems Integration and Networking using the Nortel Symposium TAPI Service Provider.
<i>Implementation and Planning Guide for the Symposium TAPI Service Providers</i>	ImplemR2.pdf	A planning guide for implementing Windows TAPI compliant applications that use the Nortel Symposium TAPI Service Provider.

The Adobe Acrobat Reader must be installed to access the online documentation. After installing the Adobe Acrobat Reader, double-clicking on the .PDF file opens the online document in the *Acrobat Reader* window. For information on using the Adobe Acrobat Reader, refer to Appendix A.

Update Policy

This is the second release of the *Network Manager's Guide for the Symposium TAPI Service Provider for Meridian 1 Release 2*. Whenever the Symposium TAPI Service Provider software is reissued or revised, updates of this guide will include the new capabilities.

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Chapter 1 Overview

This chapter provides general information about the Symposium TAPI Service Provider to acquaint you with the TAPI Service Provider environment, architecture, features, applications, and feature interactions.

Symposium TAPI Service Provider Environment

The Symposium TAPI Service Provider software works in a distributed client/server environment that logically integrates the telephone on a user's desktop with client and server-based applications. The telephone is physically connected to the switch and is not physically connected to the PC. Users' desktops do not require any special telephones, connectors, PC circuit packs, or new wiring.

The Symposium TAPI Service Provider for Meridian 1 is a full function service provider for Microsoft's Telephony application Programming Interface (TAPI) Release 2.0 and 2.1 for Windows NT, Windows 95, and Windows 98. Release 1 of the Symposium TAPI Service Provider provided comprehensive support of Meridian 1 teletext and agent functions, coordinated screen transfer (local and remote), open interface for integration with Interactive Voice Response (IVR) systems for caller entered information, sophisticated applications-based call routing, and the new Meridian Link 5 call processing features. The second release of the Symposium TAPI Service for Meridian 1 extends this capability by providing a direct connection to the Meridian 1 switch without a Meridian Link module.

Symposium TAPI Service Provider for Meridian 1 Release 2 consists of software that runs on a Windows NT Server running 4.0 or greater software (with Service Pack 4 installed) that supports a Telephony Application Programming Interface (TAPI) on a Windows NT or Windows 95 client. A PC application, acting on behalf of a user, can use the API to monitor and control calls at a device associated with the user. TAPI is a set of C-language routines that support telephony control capabilities for the central office switches.

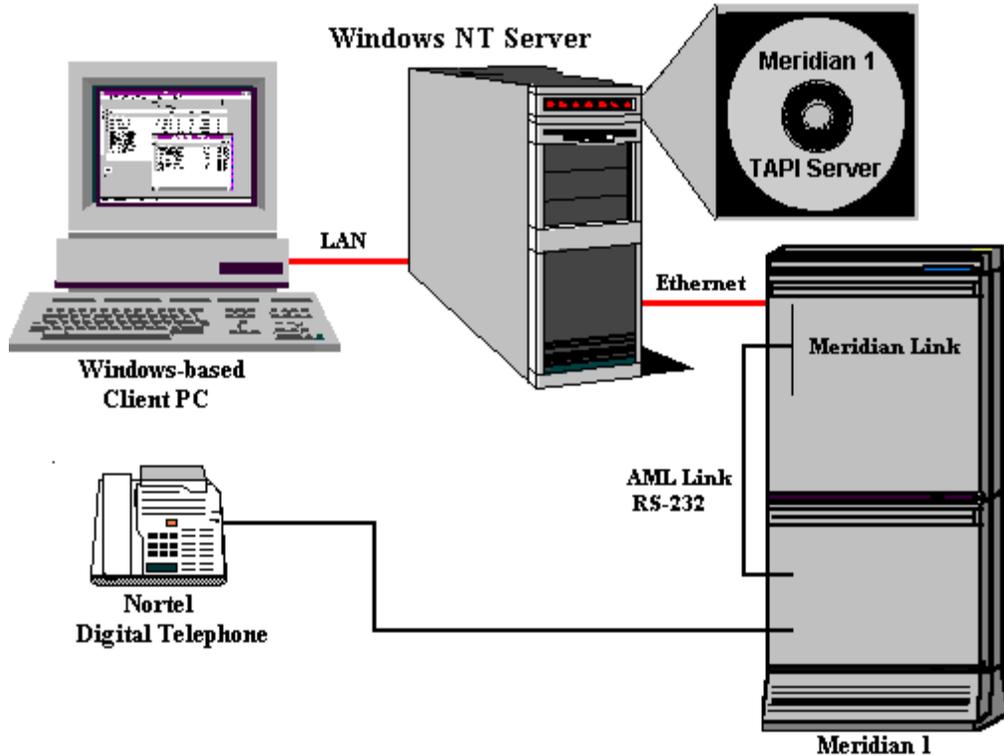


Figure 1 Symposium TAPI Service Provider for Meridian 1

Product Overview

The Nortel Symposium TAPI Service Provider for Meridian 1 Release 2 product includes all of the functionality of Release 1 plus it adds support for an ethernet, TCP/IP-based ELAN connection as its call control link to the Meridian 1 PBX. This new transport uses the ELAN functionality provided on X11 Release 23 and higher PBXs.

System Architecture for Meridian 1

To support multiple CTI server environments where a customer may have another Link-compatible application that must monitor common devices, Release 2 of the Symposium TAPI Service Provider for Meridian 1 integrates with the Meridian 1 using the conventional Meridian Link Module and TCP/IP link over Ethernet. Similarly, to support installations served by the Symposium Call Center Server (SCCS), Symposium TAPI Service Provider integrates with the Meridian 1 using the SCCS version of Meridian Link and the TCP/IP link over Ethernet. To support Release 23 and late non-SCCS Meridian 1 systems, Release 2 interfaces to Meridian 1 directly using the Release 22 TCP/IP version of the ELAN.

Conventional Meridian Link Module Configuration

A typical Symposium TAPI Service Provider for Meridian 1 Release 2 configuration (shown in Figure 1) with conventional Meridian Link consists of the following three parts:

- A Meridian Link Intelligent Peripheral Equipment (IPE) Module or an Application Module (AM), in which resides the Meridian Link application. The IPE or AM should be connected to the Customer's supplied LAN.
- A Microsoft NT LAN with a Windows NT Server running 4.0 (with Service Pack 4 installed) or above and, if applicable, at least one PC-based client workstation running Windows NT 4.0, Windows 95 or Windows 98.
- A client workstation that contains an application (such as Nortel Symposium Call Manager or Symposium Agent) that uses call control and call monitoring functions.

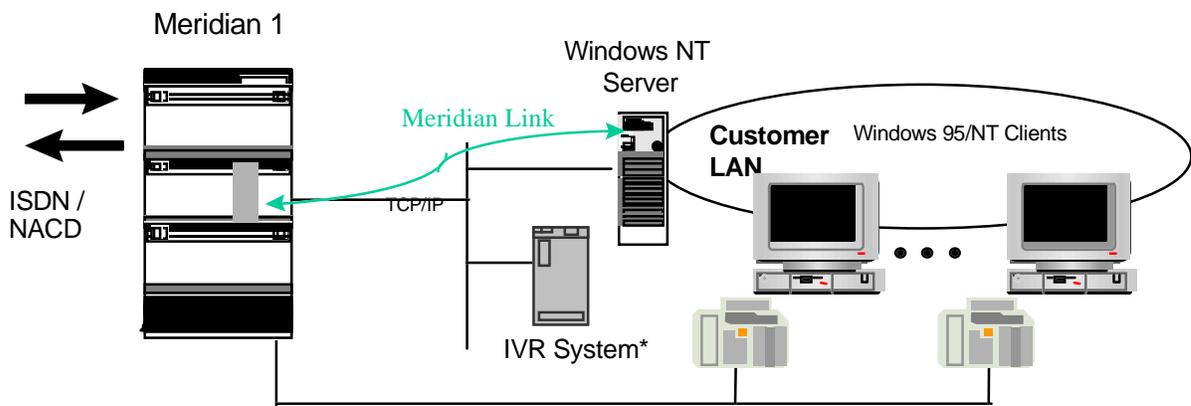


Figure 2: Conventional Meridian Link-based Configuration

A Meridian 1 station set connected to a standard Meridian 1 line card is associated with each PC client. These telephones are referred to as “associated sets.”

Symposium Call Center Server Configuration

When you have deployed the Symposium Call Center Server, Release 2 of the Symposium TAPI Service Provider integrates with the Meridian 1 via the Symposium Server version of Meridian Link (MLSM), using the TCP/IP link over Ethernet as illustrated in figure 3.

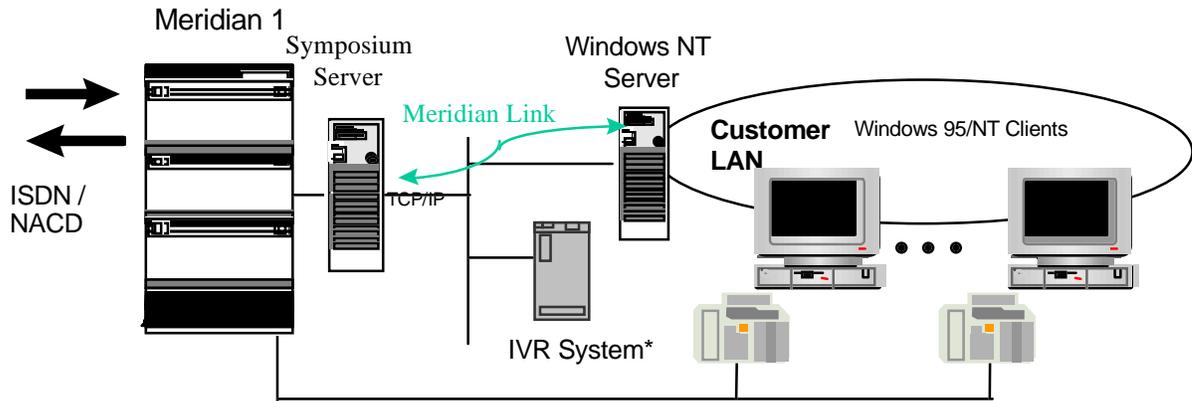


Figure 3 Symposium Call Center Server Configuration

The Symposium Server simultaneously provides Symposium Call Center skills-based routing and call center reporting services.

Direct Connect Configuration

When you do not otherwise require Meridian Link or Symposium Call Center Servers, Release 2 of the Symposium TAPI Service Provider introduces a new direct integration with the Meridian 1 Release 23 and later systems utilizing a direct ELAN-based connection directly to the Meridian 1 CPU as illustrated:

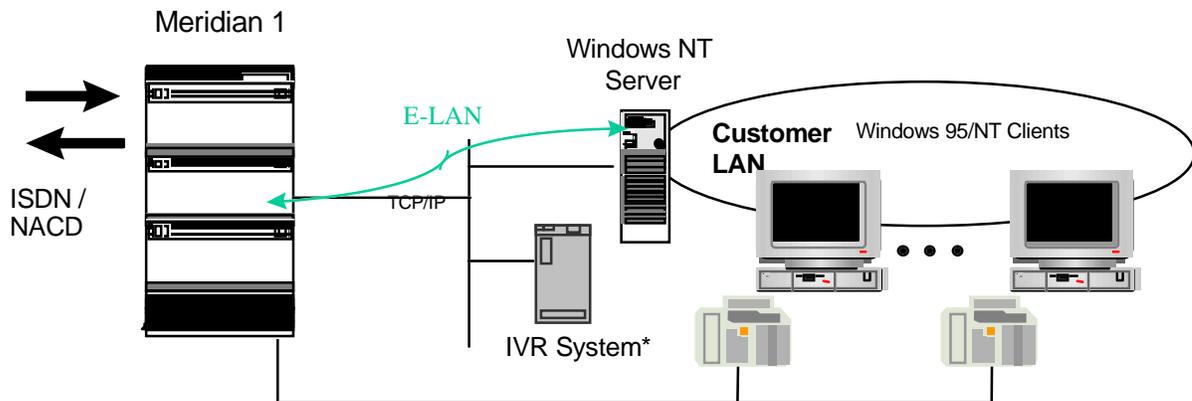


Figure 4 Direct Connect Configuration

Using the Direct Connect option, up to 16 TAPI Servers can be connected to a single Meridian 1 system. Each TAPI Server must monitor and control independent devices.

IVR and Networking

The Nortel Symposium TAPI Service Provider for Meridian 1 Release 2 provides for server to server networking over WAN or LAN as shown in Figure 5. The open interface allows for obtaining information collected by IVR Systems. The Information is passed to TAPI-compliant applications using the standard TAPI interface. The Symposium TAPI Service Provider works transparently with multiple Window NT or Novell TSAPI servers. This environment is commonly used for Network Automatic Call Distribution (NACD). Up to 512 bytes are passed with a call locally or between servers in a Network ACD configuration.

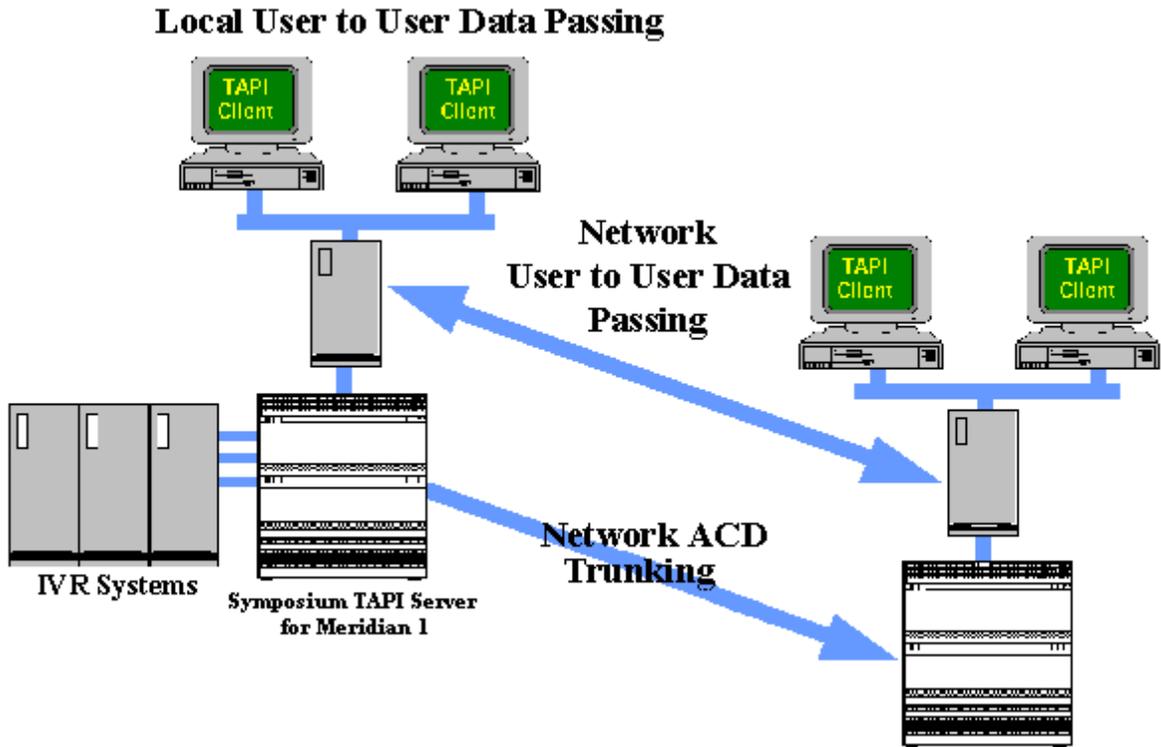
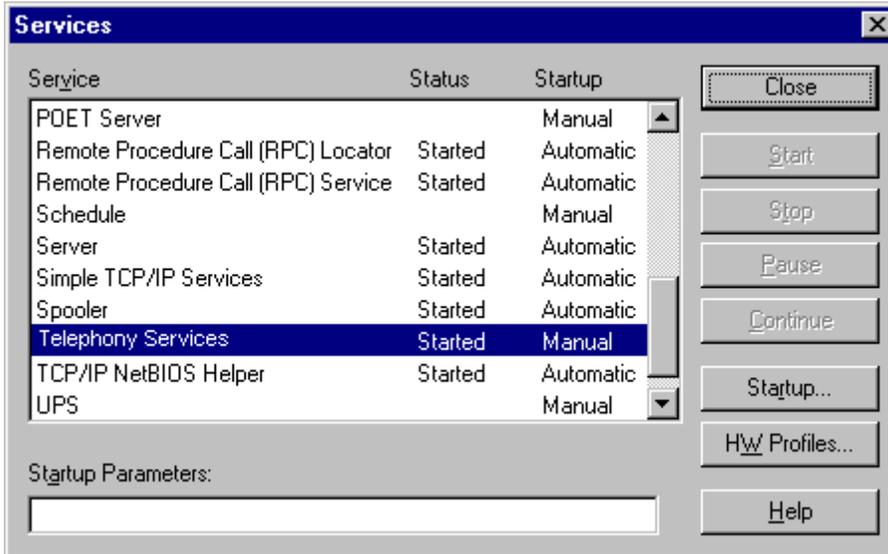


Figure 5 IVR and Networking Configuration

Microsoft TAPI Server (TAPISRV) and the Client

Typically, the Microsoft TAPI Server (TAPISRV) is a separate service available to the client. Access to the TAPISRV is provided by installing the Microsoft Windows Remote Service Provider, a telephony module responsible for routing the TAPI requests to a specific TAPI Service Provider. When the TAPISRV is installed, opening the Control Panel, double-clicking on the **Services** icon to open the *Services* window displays the TAPISRV as Telephony Services.



TAPI-compliant applications on the client issue TAPI messages. The TAPISRV communicates to the clients via a Local Area Network (LAN) through TCP/IP. TAPISRV routes the TAPI messages from the TAPI-compliant application on the client to the Symposium TAPI Service Provider. The Symposium TAPI Service Provider for Meridian 1 converts the TAPI messages to corresponding switch messages through the Meridian Link IPE module or direct ELAN-based connection to the Meridian 1. Likewise, the Symposium TAPI Service Provider converts the Meridian 1 switch to TAPI messages for routing to the client application via the TAPISRV.

Meridian Link Overview

Nortel's Meridian Link product enables an application in a host computer to use the call control and call monitoring functions of a Meridian 1 system. The Symposium TAPI Service Provider extends Meridian Link to a client application in a Windows NT client-server local area network (LAN) using TCP/IP on an Ethernet connection. The Symposium TAPI Service Provider supports Meridian Link Version 5 and Symposium Call Center System Meridian Link Service Module (MLSM).

Meridian Link R5C provides the following new functionality:

- 31 digit DNIS: This allows an application to collect the dialed digits of a call arriving on DID or TIE trunk from the external network. This provides users with a means of identifying the purpose of the call. This requires X11 R24 or higher.
- SFN (Login) with Agent ID: This provides an application with an event message when an operation is performed on an AST/Acquired ACD set. It is an unsolicited message sent to the host application when an agent logs in by manually pressing the MSB key on the ACD set or invoke the ACD set feature through the Meridian Link Set Feature Invocation (Login) message. This requires X11 R24 or higher.

Administration and Configuration

Symposium TAPI Service Provider for Meridian 1 Configurator application provides two types of configuration processes for the Administrator. The first method automatically translates and populates the Symposium TAPI Service Provider database tables with information you download from Overlays 20, 21, and 23 on the Meridian 1 switch. The Configurator application displays this information in the configuration dialog boxes for viewing and maintenance. This configuration process is detailed in the “Automatic Configuration Process” section located in Chapter 3.

For instances where it becomes necessary to add, to delete, or to modify the database information, the Configurator application provides access to the configuration dialog boxes. The fields on the configuration dialog boxes allow for adding, modifying, and deleting the information contained in the database tables. The “Customized Configuration” section in Chapter 3 provides information on accessing the configuration dialog boxes. Also, Chapter 3 contains detailed information on configuring the Provider, Host, Control DN, and Log Styles tables. These sections contain information on the dialog boxes associated with the table configurations.

The FLEXIm License Manager allows you to configure the License Manager Server and the License file that you received when you purchased the Meridian 1 TAPI Service Provider. The license file is necessary for the Meridian 1 TAPI Service Provider to work.

The Administrator has the capability to use a sharable centralized database with the use of a network connection. This database can either be shared on a file server or by a database server in a client server architecture. Access restrictions are determined by the privileges assigned within the Windows NT server configuration.

Features of Release 2

Symposium TAPI Service Provider for Meridian1 Release 2 is provided in kits to meet the specific needs of the users. Your kit may or may not contain the following features.

Basic Call Control

Basic Call Control includes support for the following features:

- Make Call
- Answer Call
- Release Call
- Hold Call
- Unhold Call
- Conference Call
- Transfer Call (Blind and Supervised)
- Monitoring of Call Events

Enhanced Call Control

This section outlines the enhanced call control features in Symposium TAPI Service Provider for Meridian 1 Release 2. The basic TAPI functionality (for example, lineOpen) is not included here.

Note: These features are not supported by the Direct Connect option.

- Call information structure updates
- CDN Treatments/Call Routing Features
- CDN Call Model
- Initiate call from Phantom TN (X11 R20)

Automatic Call Distribution

Automatic Call Distribution (ACD) is a set of feature packages based on software that provides call distribution in a call center environment. Some of the features include the following:

- The ability to setup one main number and distribute the calls to a group of agents
- The ability to set up a supervisor position for an ACD group
- The ability to monitor the quality of the service being provided to incoming callers
- The ability to gather information on the calls such as, hold time, time in queue, and the number of agents logged in a queue.

Nortel provides a separate application called ACDProxy Service. This application allows the agents to log in, log out, and go ready or not ready. ACDProxy Service also registers the ACD Queue numbers so an application does not have to be launched prior to an agent logging in to a queue. The setup procedures for the ACDProxy Service are located in Chapter 5.

Note: Microsoft Service Pack 4 is required for the ACD Proxy Service to work. Ensure the TCM Application is setup before configuring the ACDProxy Service. Refer to the “Setting up the TCM Application” section located in Chapter 4 for additional information.

The following ACD Features are supported:

- Login/Logout
- Ready/Not Ready
- Make set busy
- Make set in service
- Walkaway
- Walkaway Return

Device Control

The following features are provided to manipulate a device:

- Forward Calls
- Set the message waiting indicator of a device
- Validate a device
- Event management

Direct Connect Option

The Symposium TAPI Service Provider for Meridian 1 Release 2 connects to the switch via a direct ELAN-based connection over Ethernet using TCP/IP protocol.

Open and Integrated IVR Units

The Symposium TAPI Service Provider offers an open interface to IVR systems that allows IVR systems to pass call related data, such as caller entered digits to the TAPI Service Provider then on to TAPI-compliant applications. IVR modules run on both versions of Symposium (open and integrated IVR) machines. The IVR feature is enabled when configuring the Service Provider properties. Refer to the “Configuring the Host Table” section located in Chapter 3.

Note: Whereas the Nortel Symposium TAPI Service Provider supports Predictive Dialing and other Call Data applications, the IVR information in this document is not necessarily IVR specific. The information applies to Predictive Dialing as well as other applications, except as noted.

Predictive Dialing

The Symposium TAPI Service Provider supports outbound and predictive dialing application products that utilize the TAPI Service Provider interface for call control and monitoring. Outbound and predictive dialing applications and tools allow call centers to perform telemarketing, collections, telesales, and account management for various industries efficiently by improving agent productivity and helping supervisors better manage their workforce.

Single Feature Access

Single feature access allows an application to access a specific key on the set. This is useful when there is a second call on the line and the user would like to Display the caller ID information. This is used for other features as well. An important feature is the ability to press the Supervisor Key.

Troubleshooting Tools

The Symposium TAPI Service Provider provides extensive command tracing and debug capabilities to assist technical personnel in troubleshooting the Logger application. When experiencing problems, technical personnel may request you to use the Logger tool to create a trace of the application activities.

During the troubleshooting session, the Logger application writes status and error message data items (as defined on the configuration dialog boxes) to the scrollable *Logger* window and, when full, to the overflow file. You have the option of saving the information in overflow file for support personnel to use for diagnostic and troubleshooting purposes. The Logger application contains print options that allow you to print the file or a highlighted section on the window.

Symposium TAPI Service Provider Feature Interactions

Users of TAPI-compliant applications running in a Symposium TAPI Service Provider for Meridian 1 environment must be aware of the results of some specific feature interactions. The following sections provide the feature interactions with the Symposium Call Center Server, the Direct Connect option, and other applications.

Feature Interactions with the SCCS

Users of TAPI-compliant applications running in a Symposium TAPI Service Provider for Meridian 1 Release 2 environment using Meridian Link Service (MLS) on Symposium Call Center Server (SCCS) must be aware of the some specific features that are not available that include:

1. Not Ready with Optional Disconnect
This feature allows an application to invoke the NotReady stats for a set without disconnecting the call.
2. Enhanced Time Stamp IE
This feature is used in StatusChange.
3. Set Feature Notification messages for Ready/Not Ready, Login/LogOut, and Walk Away/Return.

Feature Interactions with the Direct Connect Feature

Users of TAPI-compliant applications running in a Symposium TAPI Service Provider (including the Direct Connect) environment must be aware of the results of some specific feature interactions:

1. You should use your application's interface to perform all of your call control activities in X11 pre-release 23. If you use the application's interface to perform some call control activities and the features on your telephone set to perform others, you will encounter unexpected results. Specifically, the TAPI-compliant application
 - Does not support multiple users putting the call on hold. The Symposium TAPI Service Provider cannot outpulse digits after establishing a call. If a Symposium TAPI Service Provider application station calls another Symposium TAPI Service Provider for Meridian 1 application station, only one user can put the call on hold.
2. Symposium TAPI Service Provider supports analog telephone sets slightly differently from digital telephone sets. More specifically, for analog telephone sets, Symposium TAPI Service Provider for Meridian.
 - Does not recognize call activity associated with an analog set's directory number if a call to an analog ACD set is abandoned.
 - Does not support a TAPI-compliant application's answering of calls for analog sets; users of analog sets must lift the handset to answer calls or otherwise cause the line to go off hook
 - Supports a TAPI-compliant application hanging up the telephone of an analog set but the handset cradle must be returned to the cradle before it is picked up again.
3. Other feature interactions include the following:
 - Symposium TAPI Service Provider does not support Multiple Appearance Directory Numbers (MADNs).
 - Symposium TAPI Service Provider does not display the called number (when dialing from the set) until the called party answers.
 - Symposium TAPI Service Provider does not support MCRs (multiple call ring) and MCNs (multiple call no ring).
 - Symposium TAPI Service Provider does not support speed dial feature access codes.
 - Symposium TAPI Service Provider does not recognize callers that hang up during a supervised transfer or conference call.
 - Symposium TAPI Service Provider does not recognize calls that have been manually transferred from a telephone set that has not been configured with the associated set (AST) feature.
 - Symposium TAPI Service Provider does not support the X11 Release 22 Group Call feature.

Feature Interactions with Other Software Products

The Nortel Symposium TAPI Service Provider for Meridian 1 Release 2 is compatible with many other software products. Some examples include two new Nortel products, which were released in 1998, the Nortel Symposium Call Manager and the Symposium Agent. Refer to the user documentation provided with these products for detailed information.

Microsoft Outlook 97 Version 8.02.4212 or above works with the Symposium TAPI Service Provider for Meridian 1 Release 2. Additional information for configuring Microsoft Outlook 97 is provided in the “Microsoft Outlook 97” section located in Chapter 5.

Chapter 2 Installation

This chapter provides information on installing the Symposium TAPI Service Provider. It includes what you should know before installing the Symposium TAPI Service Provider, the hardware and software requirements, an overview of the installation process for the Conventional installation, the Symposium Call Center Server installation, and the Direct Connect option installation, and the steps involved in the Symposium TAPI Service Provider software installation.

Installation Summary of the Conventional Installation

This section summarizes the baseline requirements and the steps for the conventional installation with the Meridian Link. It is important to follow the list of procedures in the order in which they appear.

Note: For information on the installation process with the Symposium Call Center Server, refer to the “Installation Summary of the Symposium Call Center Server” section. For information on the Nortel TAPI Service Provider Direct Connect option, refer to the “Installation Summary of the Direct Connect Option” section.

Baseline Requirements

Whereas Symposium TAPI Service Provider for Meridian 1 Release 2 supports Call ID, the Meridian 1 PBX with a minimal release level of 19 is required. If Voice Processing functions are required, a Meridian Mail system of Release 8 or higher is necessary. Meridian 1 options 11 through 81 are supported. The supported machine types include ST, RT, NT, and XT. If you are using the Direct Connect Option, refer to the “Direct Connect Option Baseline Requirements” section. Likewise, if you are using the Symposium Call Center Server, refer to the “Symposium Call Center Server” section.

Required options and hardware include the following:

- Meridian Link IPE Module or AEM
- ESDI Card (QPC513 Vintage G or later)
- Integrated Messaging (IMS) [35]
- Command and Status Link (CSL) [77]
- ISDN/AP for 3rd Parties (IAP3P) [153]
- Meridian Link (Release 5 or higher) - Meridian Link Packages only
- Meridian Link OA&M [1] - Meridian Link Packages only
- Inbound Call Management [Meridian Link package 97]
- Outbound Call Management [Meridian Link package 98]
- Call ID [247]

Note: Use of the AEM requires a hardware upgrade to make the ethernet port accessible.

Additional options that might be required but not limited to, depending on the TAPI application:

- Basic Automatic Call Distribution (ACD) [40,41,45]
- Dialed Number Identification Service (DNIS) [Meridian Link package 98]
- ACD usage reports [42]
- ACD load management [43]
- Host Enhanced Voice Routing [Meridian Link package 101]
- Host Enhanced Routing [Meridian Link package 100]
- ACD D used for ACD MAX applications [50]
- Enhanced ACD routing (EAR) [214] - for Host Enhanced Routing
- Customer Controlled Routing (CCR) [215] - for Host Enhanced Routing
- Integrated Services Digital Network (ISDN) [145] - for CLID
- Primary Rate Access (PRA) [146] - for CLID
- ISDN Signaling Link (ISL)

The Symposium TAPI Service Provider is designed to be hardware independent. Therefore, all that is required is a system that runs the Windows NT Server 4.0 or higher operating system. This may or may not be a Symposium Call Center Server system.

Minimum Server PC Requirements

The **minimum** hardware level of the server PC is as follows:

- Pentium 200 MHz CPU
- CD ROM
- 64 Megabytes of RAM
- 10 Megabytes of free disk space for the Symposium TAPI Service Provider, support tools and database (Microsoft TAPI software is already present on the Windows NT server)
- Ethernet card (dedicated LAN to Meridian 1)
- LAN card (for client PC LAN connection)
- Mouse
- VGA or SVGA Display (800X 600 pixels)

Other server activity may affect the Symposium TAPI Service Provider performance. While a dedicated TAPI NT server is not required, some large, time critical applications may warrant one.

The **minimum** software requirements are as follows:

- Windows NT 4.0 Server Software (do not use Beta NT 4.0 software) with Service Pack 4 installed.

Note: If you install Microsoft TAPI 2.1 for Windows NT 4.0, Service Pack 4 must be installed. Service Pack 4 is not provided on the CD ROM with the Symposium TAPI Service Provider software. Service Pack 4 is available from the Microsoft Web page. You must install it yourself. Refer to the Readme.txt file provided with Microsoft TAPI 2.1 software for additional information.

If you have Service Pack 4 installed, upgrading the Server to Microsoft 2.1 is unnecessary.

- Microsoft TAPI 2.1 files
- Symposium TAPI Service Provider software

Overview of the Meridian Link (Conventional) Installation Process

It is important to follow the list of procedures in the order in which they appear. If you are upgrading from a previous version of the Symposium TAPI Service Provider, be sure to remove this version before installing the new version. Be sure to read the Release notes provided with upgrades and patches before installing them.

1. Verify that Windows NT 4.0 (with Service Pack 4 installed) or greater server is installed and running, that all user IDs and passwords are configured properly, and that users can log in to the TAPI NT server.
2. Install and configure TCP/IP software on the TAPI NT server. Refer to your Windows NT installation TCP/IP documentation.
3. Verify that the Meridian 1 PBX is equipped with X11 Release 19 or later and includes all software packages needed to support Meridian Link Release 5. Refer to *Meridian 1 System Installation Procedures* (553-3001-210) and *Meridian Link/ Customer Controlled Routing Installation and Upgrade Guide* (553-3202-210).

- (a) Use LD 22 to obtain a printout:

At the **REQ** prompt, type **PRT** and press **<Return>**.

At the **TYPE** prompt, type **PKG** and press **<Return>**.

- (b) Verify that the following packages are installed:

IAP3P, 153 Application Module Link

MLM, 209 Meridian Link Module

EAR, 214 Enhanced ACD Routing

CALLID, 247 Call ID

4. Configure the Meridian 1 to support Meridian Link.

Refer to the “Meridian 1 configuration for Meridian Link/CCR” chapter in the *Meridian Link/Customer Controlled Routing Installation and Upgrade Guide* (553-3202-210). Also, refer to “Appendix B: Configuration Files” in this guide for sample configurations of how the system parameters look when configuration is performed properly.

- (a) In LD 17, at the ADAN prompt, configure the AML of Meridian Link as follows:

BPS = 19200

IADR = 3

RADR = 1

- (b) Use LD 22 to print out the VAS. Select an unused VSID.

- (c) In LD 17, at the VAS prompt, configure the selected VSID to the AML number of the Meridian Link. In this load, also set the following:

SECU = YES

CONF = DIR

- (d) In LD 15, at the AML_DATA prompt, set up VSID to the VSID set in LD 17 for your Meridian Link.

- (e) Each telephone DN, that is to be monitored by the TAPI Service Provider, needs to have the AST (using LD 11) configured to the value of the key. IAPG assigns AST DNs to a status message group defined in LD 15. We recommend that the default be set to 1 to send all messages (default 0 sends no messages). For example, if the keys you choose to control are 00 and 03, set the AST values for 00 and 03. To have other TAPI Service Provider call control features, such as transfer and conference, they must be programmed on the set.

- (f) For users who are using ACD functionality, configure the ACD queue. In LD 23 (ACD), the VSID must be defined in order to receive Meridian Link messages. When an event like an incoming ACD call occurs, and the VSID is correctly defined, a Meridian Link message reflects this activity. The VSID value range is 0-15 as defined in the X11 input/output guide.

(g) Use LD 22 to print out your configuration as follows:

At the REQ prompt, type **PRT** and press <Return>.

At the TYPE prompt, type **CFN** and press <Return>.

Find the ADAN for the AML.

Compare it with the ADAN for AML7 listed in the example provided in Appendix B.

Find the listing for VAS and locate the VSID for the AML.

Compare it with VSID07 example that is listed in Appendix B.

Note: All telephones being used with Symposium TAPI Service Provider must have six-party conference assigned to the sets to support holding of calls from the TAPI application in X11 Release 22. Refer to the *Meridian SLI X11 Input/Output Guide*, PO842663, or contact your system administrator for assistance.

The Multiple Appearance Destination Number (MADN) feature is not supported with the Symposium TAPI Service Provider for Meridian 1.

5. If you are running X11 Release 22 or above, omit this step. If you do not have X11 Release 22 or above, install and configure a Phantom DN. Phantom DNs are used to support Hold functions in the Meridian TAPI Service Provider.

Refer to the “Installing and Configuring the Phantom DN” section later in this chapter.

6. Verify that the setting of port 5 of the IPE Module complements the setting of the ESDI port of the Meridian 1. For example, if the ESDI port of the Meridian 1 is set to DCE, port 5 of the IPE Module must be set to DTE.

Note: Complete step 6 before going to step 7.

7. Install the Meridian Link IPE Module or Application Module.

Refer to the “Hardware installation” chapter in the *Meridian Link/Customer Controlled Routing Installation and Upgrade Guide (553-3202-210)*.

This completes installation of all hardware needed to support Symposium TAPI Service Provider for Meridian 1.

8. Install the Meridian Link operating system.

Refer to Procedures 6 and 7 in the “Software installation, update, and upgrade procedures” chapter of the *Meridian Link/Customer Controlled Routing Installation and Upgrade Guide (553-3202-210)*.

9. Install the Meridian Link Release 5 application.

10. Verify that the Meridian link is up by performing “Procedure 12: Verifying the link status,” located in the *Meridian Link/Customer Controlled Routing Installation and Upgrade Guide (553-3202-210)* and includes the following steps (you must be logged in as mluser):

a. Type **status link 0** and press <Return> to verify the status of the link to Meridian 1.

The response “Link 0: Up” indicates the link is functioning properly.

b. Type **status link 1** and press <Return> to verify the status of the link to the host computer.

The response “Link 1: UP” indicates that the link is functioning properly.

c. Type **status link 2** and press <Return> to verify the status of the link to the host computer.

The response “Link 2: Up” indicates that the link is functioning properly.

Note: If you receive a different response to a, b, or c, that what is mentioned, refer to the *Application Module and Intelligent Peripheral Equipment Module Diagnostic and Maintenance Guide (553-3211-510)*.

11. Verify that the Meridian Link supports TCP/IP by performing the following procedure on the TAPI server system console:
 - (a) Type *ping [IPE TCP/IP Address]*
For example: *ping [47.480.49.50]*
If you are successful, a message is displayed that states the Host was contacted.
If not successful, the displayed message states the Host was not contacted. Proceed to the Troubleshooting section.
 - (b) To close the ping window, press <Esc>.
12. Configure the switch to support TAPI Server outbound trunk monitoring. Refer to the “Configuring the Switch to Support Outbound Trunk Monitoring” section for detailed information.
13. Install the Security Device provided with the Symposium TAPI Service Provider. The TAPI Service Provider will not work if the Security Device is not installed. Refer to the “Installing the Security Device” section for detailed information.
14. Install the Symposium TAPI Service Provider software on the server. Add the Symposium TAPI Service Provider in Windows NT. This procedure is outlined in the “Installing the Symposium TAPI Service Provider” section.

Note: If you are upgrading from a previous version of the Symposium TAPI Service Provider for Meridian 1, be sure to remove the previous version of software before installing the current software. Refer to the “Removing Symposium TAPI Service Provider Software” section located in Chapter 7 for detailed information on removing the Symposium TAPI Service Provider software.

Also, before reinstalling the Nortel Symposium TAPI Service Provider, ensure that the TAPISRV.exe is not running and that the Telephony Service has been stopped. Refer to the “TAPI Server (TAPISRV) and the Client” section located in Chapter 1 for additional information on the Telephony Services (TAPISRV). You can verify the status of the TAPISRV (Telephony Services) by the following opening the Control Panel and double-clicking on the **Services** icon to display the *Services* dialog box.

15. Configure the Symposium TAPI Service Provider for Meridian 1. This procedure is detailed in Chapter 3.
16. Run the Microsoft TAPI Browser or the Microsoft Dialer to verify the Symposium TAPI Service Provider is up on the Windows NT server.
17. Install and configure TAPI-compliant application(s). Refer to the application’s user documentation. The following Figure shows a typical installation.

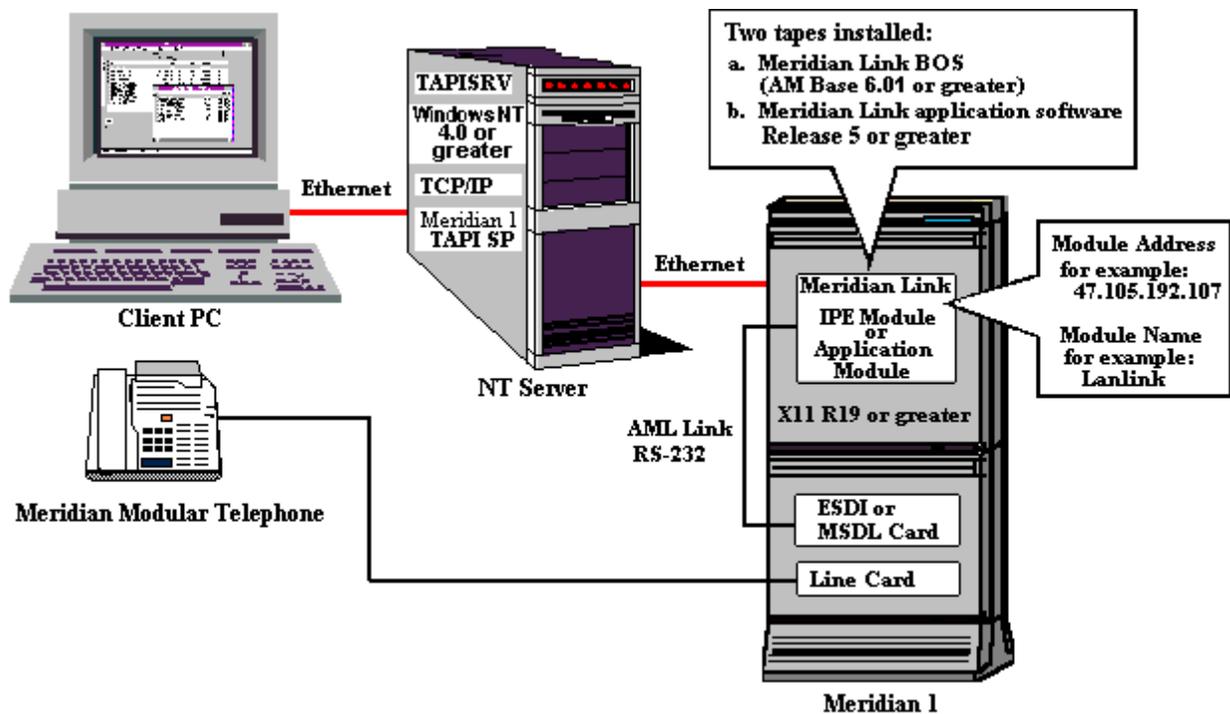


Figure 6 Typical Symposium TAPI Service Provider for Meridian 1 installation

18. Upgrade the Microsoft TAPI to 2.1. (Refer to Chapter 4 of this document for detailed information.)

19. Configure the TCMAPP. (Refer to Chapter 4 of this document for detailed information.)

This completes the installation and setup of the Symposium TAPI Service Provider for Meridian 1 Release 2. For additional information, refer to the following:

- *Meridian Link/CCR IPE Module Installation Photo Guide, H029*
- *Meridian ACD packages A-C2 and Network ACD, P0800525*
- *Meridian Link and Customer Controlled Routing Engineering Guide, P0724947*
- *Application Module and Intelligent Peripheral Equipment Module Advanced Maintenance Guide Package, P0724945*

Configuring the Switch to Support Outbound Trunk Monitoring

To monitor the trunk for the status events of answered and disconnected, ensure the following:

- On the Meridian 1, the trunk must be set up as AST
- On the Meridian 1, IAPG must be set up to select the appropriate events (1 = all events)
- The CTI application must register the trunk to be monitored

The status change messages for the monitored trunk can only be sent when the trunk statuses are detected, that is, when the trunk is equipped with answer supervision and disconnect supervision. If the digital trunk interface is not used, the SUPN prompt must be set to *yes* in Load 14 so the answer and disconnect supervision is allowed.

Software requirements:

The switch software must be Issue 24 or above.

The Meridian Link must be Version 6.41 or above.

Call Scenarios:

When a Inbound call is received on this trunk, call information is now available for the call. No database configuration is needed.

When a Outbound call is made on this trunk (as configured) and route 118 (example only) is being monitored by the TAPI Service Provider (database configuration is needed), the outbound Trunk ID (route and member call information) is now available from dwTrunk info from the lineGetCallInfo structure.

The following is an example of a route member (for route 118) that is ASTed and IAPG is set to 1.

```
ld 21
PT1000

REQ: prt
TYPE: trk
TN 5 1
DATE
PAGE

DES LAB_61C
TN 005 01
TYPE TIE
CDEN SD
CUST 0
NCOS 0
RTMB 118 1
B-CHANNEL SIGNALING
TGAR 1
AST YES
IAPG 1
CLS CTD DTN WTA LPR APN THFD HKD
P10 VNL
TKID
DATE 23 NOV 1998

NACT
```

Installing and Configuring the Phantom DN

Note: It is not necessary to install and configure Phantom DNs if you are running X11 Release 22 or above.

Whereas Meridian Link does not support Hold functions, Phantom DNs must be configured on the Meridian 1 to support Hold functions from the TAPI application running on a client PC. Configurations of Phantom DNs vary depending on the version of X11 software installed in the Meridian 1.

For a detailed description of the Phantom DN feature, refer to the chapter on “Phantom TNs” in the *X11 Features and Services* (553-3001-305).

X11 Release 19

1. Use LD 10 to configure a standard analog set (see the following sample configuration).

For more information on using LD10, refer to *X11 Administration Programs* (P0800600).

```
REQ                NEW
TYPE :            500
TN                4 0 2 12
CDEN              <CR>
DES              FANTOM
CUST 0           <CR>
DN                2678 (Phantom DN)
  MARP           <CR>
  CPND          <CR>
  VMB           <CR>
AST              <CR>
IAPG            <CR>
HUNT            <CR>
TGAR            <CR>
LDN             <CR>
NCOS            <CR>
RNPG            <CR>
SGRP            <CR>
CLS             DTN
SCI             <CR>
MLWU_LANG       <CR>
PLEV            <CR>
FTR             <CR>
```

2. Short the tip and ring leads of the analog port (TN).
3. Write down the Phantom DN and enter it into a *Phantom DN* field when you install the Symposium TAPI Service Provider for Meridian 1.

X11 Release 20 or later

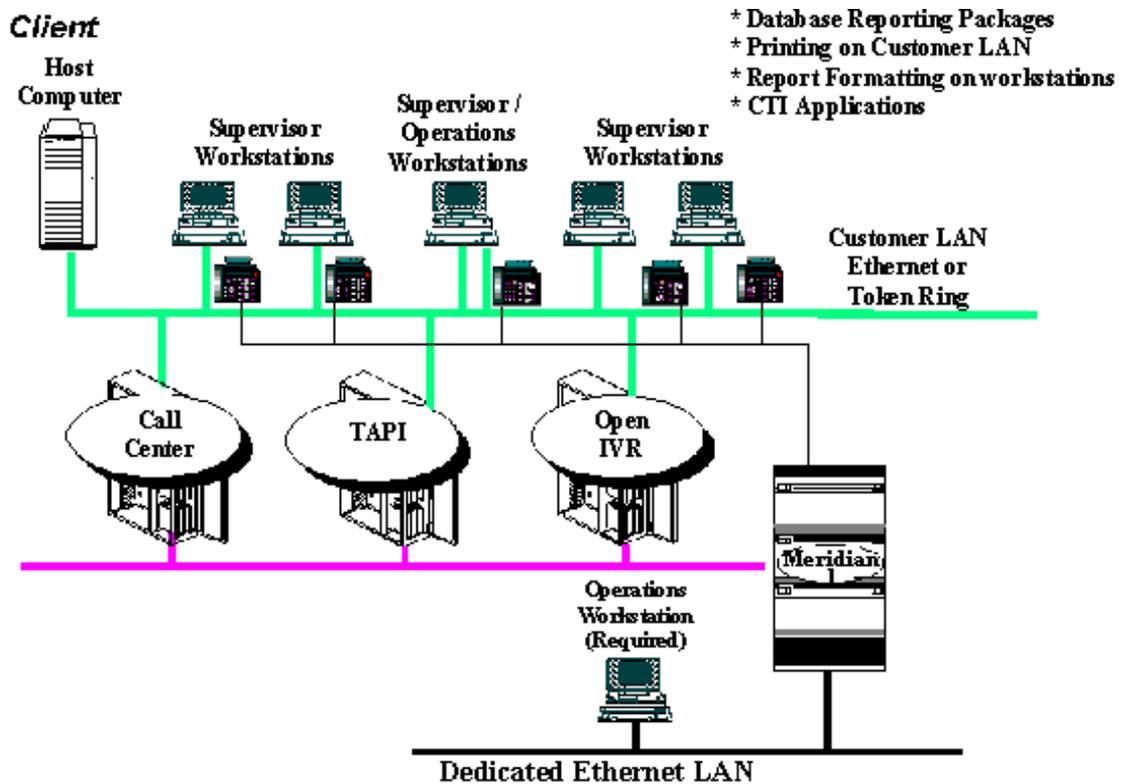
The Phantom TN (PHTN) feature is available as package 254. If the Meridian 1 PBX is not equipped with this package, use the procedure for X11 Release 19 or earlier.

For detailed information on how to configure a phantom TN/DN, refer to *X11 Features and Services* (553-3001-305).

Installation Summary of the SCCS

This section summarizes the baseline requirements and the steps for the SCCS installation. It is important to follow the list of procedures in the order in which they appear.

To support installations served by the Symposium Call Center Server (SCCS), the Symposium TAPI Service Provider integrates with the Meridian 1 using the SCCS version of Meridian Link and the TCP/IP link over Ethernet. The following figure provides an overview of the Symposium Call Center System:



Baseline Requirements

Before installing the Symposium TAPI Service Provider for Meridian 1, ensure the following:

- Symposium Call Center Server is fully functioning, and the TAPI Server is connected on the CLAN. You must know the CLAN TCP/IP address to complete the software installation. The defaults for the Meridian Link setup on the TCP/IP are used for the Symposium Call Center Server.
- MLSM (Meridian Link) service is running on the SCCS server.

Overview of the SCCS Installation Process

It is important to follow the list of procedures in the order in which they appear. Be sure to read the Release notes provided with the software, the software upgrades or software patches before installing them.

1. Verify that Windows NT 4.0 (with Service Pack 4 installed) or greater server is installed and running, that all user IDs and passwords are configured properly, and that users can log in to the TAPI NT server.
2. Verify that the Symposium Call Center is fully functioning, that all user IDs and passwords are configured properly, and that users can log in to the TAPI NT server.
3. Configure the telephone User ID's and Passwords needed for skillset routing if the SCCS is used for skillset routing. If the SCCS server is only used for MLSM (Meridian Link), then you do not need to configure the phones.
4. Configure to support SCCS link.
Each telephone DN, that is to be monitored by the TAPI Service Provider, needs to have the AST

(using LD 11) configured to the value of the key. For example, if the keys you choose to control are 00 and 03, set the values for 00 and 03. To have other TAPI Service Provider call control features, such as transfer and conference, they must be programmed on the set.

Note: Defining a VSID in LD 23 (ACD) is not possible or necessary when using SCCS. When an event such as an incoming ACD call occurs, a message reflecting this activity is sent on the AML/ELAN without a VSID defined in LD 23. The AML/ELAN value range is 16-31.

5. Install the Security Device provided with the Symposium TAPI Service Provider. The TAPI Service Provider will not work if the Security Device is not installed. Refer to the “Installing the Security Device” section for detailed information.
6. Install the Symposium TAPI Service Provider software on the server. Add the Symposium TAPI Service Provider in Windows NT.

Note: If you are upgrading from a previous version of the Symposium TAPI Service Provider for Meridian 1, be sure to remove the previous version of software before installing the current software. Refer to the “Removing Symposium TAPI Service Provider Software” section located in Chapter 7 for detailed information on removing the Symposium TAPI Service Provider software.

This procedure is outlined in the “Installing the Symposium TAPI Service Provider Software” section located in this chapter

7. Configure the Symposium TAPI Service Provider for Meridian 1. This procedure is detailed in Chapter 3.
8. Run the Microsoft TAPI Browser or the Microsoft Dialer to verify the Symposium TAPI Service Provider is up on the Windows NT server.
9. Install and configure TAPI-compliant application(s). Refer to the application’s user documentation.
10. Upgrade the Microsoft TAPI to 2.1. (Refer to Chapter 4 of this document for detailed information.)
11. Configure the TCMAPP. (Refer to Chapter 4 of this document for detailed information.)

CLAN Configuration Information

Networking with the Symposium TAPI Service Provider for Meridian 1 over a Customer’s LAN (CLAN) requires special consideration. An example of this type of networking is when using the Meridian Link on the Symposium Call Center Server (SCCS) which functions only on the CLAN. It is important to configure the TAPI Service Provider on as quiet a CLAN as possible. When the CLAN contends with heavy traffic, certain Symposium TAPI Service Provider for Meridian 1 functions, such as screen-pops, may not function properly. Restricting all unnecessary data traffic from reaching the Symposium TAPI Service Provider enhances the performance and reduces wasted processing time.

Quiet CLAN

One option for configuration is the “Quiet” CLAN. Isolating the Symposium TAPI Service Provider for Meridian 1 from the SCCS server and the CLAN on a quiet CLAN helps restrict traffic to the TAPI Service Provider.

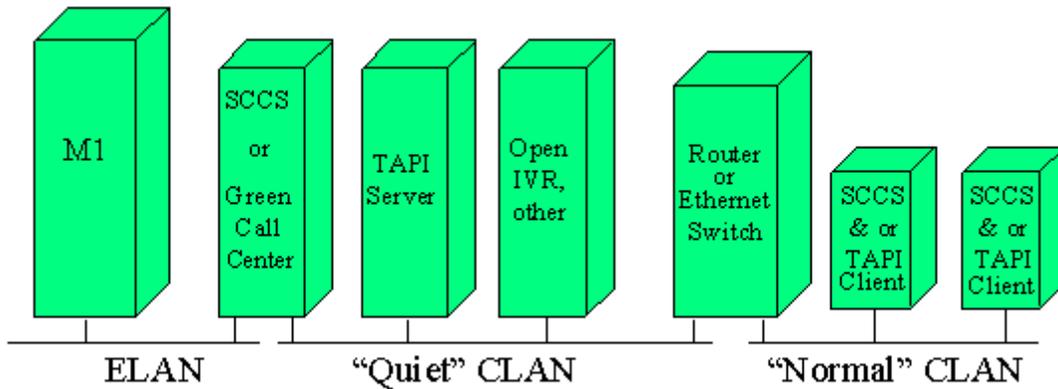


Figure 7 "Quiet" CLAN

In the Quiet CLAN configuration, the M1 and the SCCS are on the ELAN, which is isolated because the SCCS is not acting as a Router. The Quiet CLAN carries only traffic which is telephony centric or involves either the SCCS CLAN NIC or Symposium TAPI Service Provider. This limited traffic is assured by the Router as it passes any messaging from the client machines destined for either the SCCS or Symposium TAPI Service Provider.

Installation Summary of the Direct Connect Option

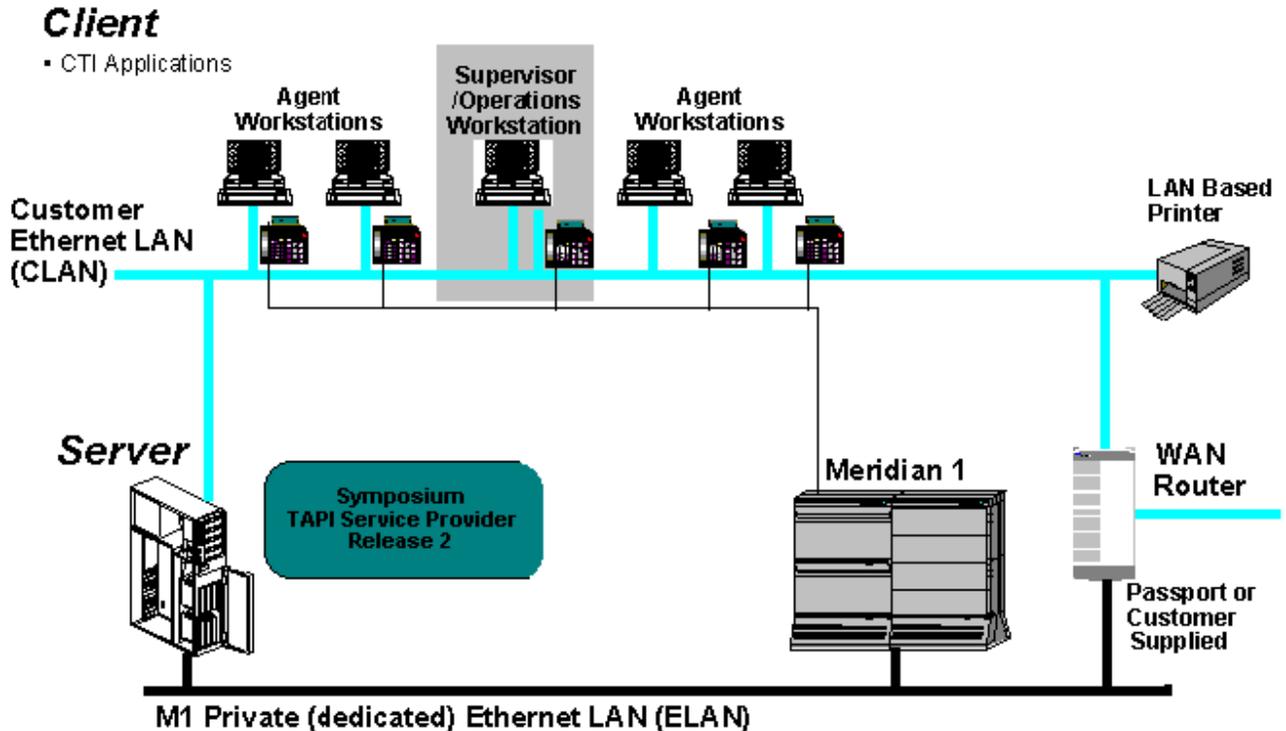
The Meridian 1 is hardware-equipped with an Ethernet controller on each of the I/O processor (IOP) cards. The Ethernet interface is provided by the IOP pack with an AUI cable on the back panel. A unique Ethernet address must be assigned to the Ethernet controller on the IOP card.

On a single CPU M1 system, there is only one IOP, which contains an Ethernet interface. Single CPU systems use only a Primary IP address. On a redundant or dual CPU M1 system, two IP addresses must be specified: Primary and Secondary. Normal operation will use the Primary IP address. Split mode operation will use the Secondary IP address.

The Meridian 1 private Ethernet is used by all Meridian 1 devices for system access and control. An internal gateway must be used to isolate the Meridian 1 private Ethernet from the customer LAN. Routing information is required if an internet gateway or router connects a Meridian 1 private network to the customer's LAN.

ELAN addresses are dynamically assigned by the Meridian 1. Each application connects to ELAN using the IP address and Port number 8888. The Meridian 1 assigns the appropriate ELAN address for each application. Resources for the Direct Connect option are acquired by Associated sets (AST). All unsolicited messages (USM) are requested as part of the acquire. ACD DN's are acquired for monitoring abandoned calls.

The following is an example of an ELAN configuration.



Direct Connect Option Baseline Requirements

TAPI Service Provider Direct Connect Option works in conjunction with Meridian 1 C-processor based systems (11C, 51C, 61C, 81, 81C). Other hardware and software requirements include the following:

- X11 Release 23.30 or above
- Symposium TAPI Direct Connect Option, if number of Associated Stations (ATs) are over the initial 20
- ELAN connection (there is only one ELAN per Meridian 1 - if you already have the Meridian Administration Terminal (MAT) 5 or above connected to the system via ELAN, no other hardware is required.
- Ethernet Cable (NT7D90DA)- to connect from the ethernet port on the backplane of the NT5D21 CoreNet, NT6D60 Core, or NT9D11 CoreNet Module to J23 at the module I/O panel.
- IOP (NT6D63BA) or IOP/CDMU (NT5D20BA) card - to configure an Ethernet port on the Meridian 1 system.
- Dedicated LAN

Overview of the Direct Connect Option Installation Process

Verify that all baseline requirements are met. It is important to follow the list of procedures in the order in which they appear.

1. Verify that Windows NT 4.0 (with Service Pack 4 installed) or greater server is installed and running, that all user IDs and passwords are configured properly, and that users can log in to the TAPI NT server.

2. Configure to support Direct Connect.
Each telephone DN, that is to be monitored by the TAPI Service Provider, needs to have the AST (using LD 11) configured to the value of the key. For example, if the keys you choose to control are 00 and 03, set the values for 00 and 03. To have other TAPI Service Provider call control features, such as transfer and conference, they must be programmed on the set.

Note: Defining a VSID in LD 23 (ACD) is not possible or necessary when using the Direct Connect option. When an event such as an incoming ACD call occurs, a message reflecting this activity is sent on the AML/ELAN without a VSID defined in LD 23. The AML/ELAN value range is 16-31.

3. Configure the hardware for the Ethernet Port. Refer to the “Hardware Configuration for the Ethernet Port” section.
4. Configure the software for the Ethernet Port. Refer to the “Software Configuration for the Ethernet Port” section.
5. Install the Security Device provided with the Symposium TAPI Service Provider. The TAPI Service Provider will not work if the Security Device is not installed. Refer to the “Installing the Security Device” section for detailed information.
6. Install the Symposium TAPI Service Provider software on the server. Add the Symposium TAPI Service Provider in Windows NT.

Note: If you are upgrading from a previous version of the Symposium TAPI Service Provider for Meridian 1, be sure to remove the previous version of software before installing the current software. Refer to the “Removing Symposium TAPI Service Provider Software” section located in Chapter 7 for detailed information on removing the Symposium TAPI Service Provider software.

This procedure is outlined in the “Installing the Symposium TAPI Service Provider Software” section located in this chapter

7. Configure the Symposium TAPI Service Provider for Meridian 1. This procedure is detailed in Chapter 3.
8. Run the Microsoft TAPI Browser or the Microsoft Dialer to verify the Symposium TAPI Service Provider is up on the Windows NT server.
9. Install and configure TAPI-compliant application(s). Refer to the application’s user documentation.
10. Upgrade the Microsoft TAPI to 2.1. (Refer to Chapter 4 of this document for detailed information.)
11. Configure the TCMAPP. (Refer to Chapter 4 of this document for detailed information.)

Hardware Configuration of the Ethernet Port

The following steps should be followed to hardware configure an Ethernet port on the Meridian 1 system:

1. For systems configured with the NT5D20BA, IOP/CMDU card:
 - a. Identify the card slot location of the NT5D20BA, IOP/CMDU card in your system:
 - In NT5D21 CoreNet Modules, the IOP/CMDU will be located in either slot 16, or slot 17.
 - In NT6D60 Core Modules, the IOP/CMDU will be located in slot 16.
 - In NT9D11 CoreNet Modules, the IOP/CMDU will be located in slot 16.
 - b. Connect the NT7D90DA, Ethernet cable to the backplane. Be sure to align the connector exactly with the bottom row of backplane pins:
 - Connect the cable to the backplane at location 17F, if the IOP/CMDU is installed in slot 17.
 - Connect the cable to the backplane at location 16F, if the IOP/CMDU is installed in slot 16.

2. For systems configured with the NT6D63BA, IOP card :
 - a. Confirm the card slot location of the NT6D63BA, IOP card in your system:
 - In NT6D60 Core Modules, the IOP will be located in slot 16.
 - In NT9D11 CoreNet Modules, the IOP will be located in slot 16.
 - b. Connect the NT7D90DA, Ethernet Cable to the backplane. Be sure to align the connector exactly with the bottom row of backplane pins:
 - Connect the cable to the backplane at location 16F.

**NT7D90DA Ethernet cable.
Connects to backplane at location 17F (or 16F).**

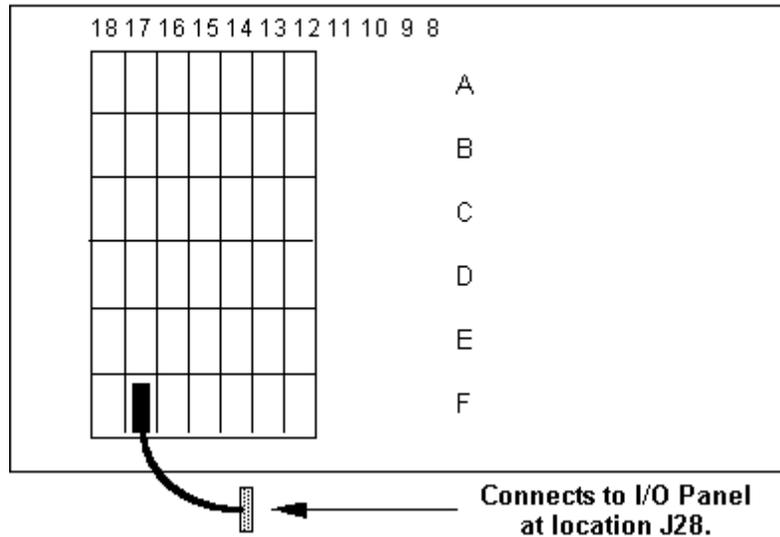


Figure 8 Ethernet Cable Connection on Direct Connect Option

3. Connect the 10BaseT connector on the NT7D90DA cable to the module I/O panel at location J28.
4. For a dual CPU machine, repeat steps 1-3 above to configure the Ethernet port in the second CPU.

Note: Additional equipment will be required to configure and connect the MAT Release 5 application to the Ethernet port at the I/O panel. Please refer to the *MAT Release 5 Common Services User Guide Release 5.0* (part number A0858266) for further detail.

Software Configuration of the Ethernet Port

The following steps should be followed to configure Ethernet ports in software for the Meridian 1 system.

1. >LD117
2. >NEW HOST M1SERVER_A 47.1.1.10
 - (Where 47.1.1.10 is the IP address of the active IOP or IOP/CMDU card.)
 - (Where M1SERVER_A is the host name for the IP address.)
3. >CHG ELNK ACTIVE M1SERVER_A

4. >CHG MASK 255.255.255.0

- (Where 255.255.255.0 represents the local subnet mask.)

For a dual CPU machine, repeat the process for the backup, inactive CPU:

5. >LD117

6. >NEW HOST M1SERVER_B 47.1.1.11

(Where 47.1.1.11 is the IP address of the standby IOP or IOP/CMDU card.)

(Where M1SERVER_B is the host name for the IP address.)

7. >CHG ELNK INACTIVE M1SERVER_B

8. Manually INIT the system to activate the newly entered IP address information.

If you have a default gateway in the network, define the routing table by completing the following steps. The routing table provides the Meridian 1 with the IP addresses of the gateway server so that the Meridian 1 can send return messages to the gateway for forwarding to the requesting client.

9. >LD117

10. NEW ROUT 0.0.0.0 47.1.1.250

- (0.0.0.0 should be entered to identify the default route.)
- (Where 47.1.1.250 is the IP address of the gateway .)

Primary IP Address Procedures

Instructions are provided for the activation, validation, and recovery procedures for the Primary IP Address.

Primary IP Address Activation Procedure

Manually INIT the system to activate the connection to the IP address configured in OVL 117.

Note: A manual initialization must be performed to establish a connection to the primary IP address. Once the connection is established, another manual initialization is only required if the primary IP address is changed, or if the revised parallel upgrade process is not followed (see section 8.0 of this bulletin).

Primary IP Address Validation Procedure

The following procedure should be followed to validate that the primary IP address is active. The technician will compare the IP configured in overlay 117 with the actual IP used in overlay 137. If these two IP addresses are identical, then the system is using the correct IP address. Otherwise, the IP address is invalid, and the recovery procedure needs to be performed. Refer to the “Primary IP Address Recovery Procedure” section for additional information.

Example:

Active host name and IP address: "PRIMARY_IP" "47.48.49.50"
Inactive host name and IP address: "SECONDARY_IP" "47.48.49.51"

To Perform the Primary IP Address Validation Procedure:

1. Load overlay 117
>LD 117<cr>
OAM000
2. Type "PRT ELNK<cr>" to display the IP address configured.
=> PRT ELNK<cr>
ACTIVE ETHERNET: "PRIMARY_IP" "47.48.49.50" ; <= IP configured
INACTIVE ETHERNET: "SECONDARY_IP" "47.48.49.51"
OK
3. Load overlay 137
>LD 137<cr>
CIOD000
4. Type "STAT ELNK<cr>" to display Ethernet and network status
.STAT ELNK<cr>
ELNK ENABLED
Ethernet (In unit number 0):
Host: PRIMARY_IP
Internet address: 47.48.49.50 ; <=actual IP used
Broadcast address: 47.48.49.255
Ethernet address: 00:00:75:32:1e:ca
Netmask: 0xff000000; Subnetmask: 0xfffff000
33520 packets received; 12308 packets sent
0 input errors; 0 output errors
0 collisions

Primary IP Address Recovery Procedure

If the connection to the Primary IP Address as configured in OVL 117 is lost, it can be reestablished by following the steps:

1. Manually INIT the system to reestablish a connection to the primary IP address.
2. Perform the "Primary IP Address Validation Procedure" (see section 6.0 above) to confirm the Ethernet connection.

Revised Parallel Upgrade Procedure

The Parallel Upgrade procedure that must be followed to ensure the primary IP address remains active following a software upgrade. Please refer to the *MAT Release 5 Common Services User Guide Release 5.0* (part number A0858266) for further detail.

To Perform the Parallel Upgrade Procedure:

1. The M1 is put into split mode with side 0 handling call processing.
2. Software install floppy is inserted in side 1 CMDU or IOP/CMDU.
3. Side 1 is sysloaded to enter software installation.

Note: At this point, side 1 takes the secondary IP address as its active IP address, since side 0 still has control over the primary IP address.

4. Software install is completed on side 1.
5. Call processing is switched from side 0 to side 1 by completing the following steps in quick succession:
 - a. Faceplate disable the IOP or IOP/CMDU card on side 0 (which will relinquish side 0 control over the primary IP address).
 - b. Faceplate disable the CNI cards in side 0.
 - c. Faceplate enable the CNI cards in side 1.
 - d. INIT side 1, to switch call processing from side 0 to side 1.

Note: At this point, side 1 will seize control of the primary IP address.

6. Software install floppy is inserted in side 0 CMDU or IOP/CMDU.
7. Faceplate enable the IOP or IOP/CMDU card on side 0.
8. Side 0 is sysloaded to enter software installation.
9. Continue with software installation on side 0, and complete the remainder of the parallel upgrade.
 - Once back in redundant mode, an INIT (planned, or unplanned) will result in the active CPU seizing the primary IP address.
 - Upon switchover, the primary IP address will be seized by the new active (formerly standby) CPU.

Sample of Meridian 1 ELAN Print Outs

```

LD 117
=> PRT HOST
ID Hostname IP Address
1 LOCAL_PPP_IF 137.135.192.4
2 REMOTE_PPP_IF 100.1.1.1
3 SECONDARY_IP 47.106.100.2
4 OPTION61C 47.106.100.1

=> STAT HOST
*** Active Internet Host Table ***
ID Hostname IP Address
-- localhost 127.0.0.1
4 OPTION61C 47.106.100.1
1 LOCAL_PPP_IF 137.135.192.4
2 REMOTE_PPP_IF 100.1.1.1
3 SECONDARY_IP 47.106.100.2

=> PRT MASK
SUBNET MASK: "255.255.240.0"

>LD 137
STAT ELNK

ELNK ENABLED
Ethernet (In unit number 0):
Host: OPTION61C
Internet address: 47.106.100.1
Broadcast address: 47.106.111.255
Ethernet address: 00:00:75:32:31:ad
Netmask: 0xffff0000; Subnetmask: 0xffff0000
81212 packets received; 99819 packets sent
0 input errors; 0 output errors
0 collisions

>LD 22
REQ PRT
TYPE ADAN

ADAN ELAN 16
CTYP ELAN
DES NUMBER1
N1 128
ADAN ELAN 17
CTYP ELAN
DES elan2
N1 512
ADAN ELAN 18
CTYP ELAN
DES edlan3
N1 512
...
REQ PRT
TYPE VAS
...

VSID 16
DLOP
ELAN 16
SECU YES
INTL 0001
MCNT 9999

VSID 17
DLOP
ELAN 17
SECU YES
INTL 0001
MCNT 9999

VSID 18
DLOP
ELAN 18
SECU YES
INTL 0001
MCNT 9999

VSID 19
DLOP
ELAN 19
SECU YES
INTL 0001
MCNT 9999

VSID 20
DLOP
ELAN 20
SECU YES
INTL 0001
MCNT 9999

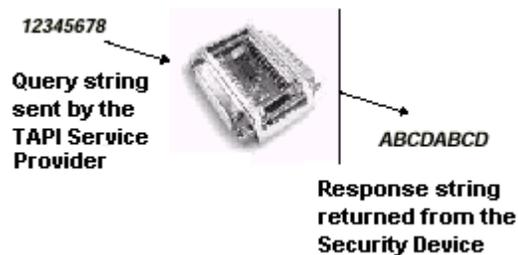
...
>LD 48
STAT ELAN

SERVER TASK: ENABLED
ELAN #: 16 DES: NUMBER1
APPL_IP_ID: 47.106.100.11 LYN7: ACTIVE EMPTY
APPL ACTIVE
ELAN #: 17 DES: elan2
APPL_IP_ID: 47.106.100.255 LYN7: DOWN DSBL
ELAN #: 18 DES: edlan3
APPL_IP_ID: 47.106.100.50 LYN7: ACTIVE EMPTY
APPL ACTIVE
ELAN #: 19 DES: elan4
APPL_IP_ID: 0.0.0.0 LYN7: DOWN DSBL
ELAN #: 20 DES: elan5
APPL_IP_ID: 0.0.0.0 LYN7: DOWN DSBL

```

Installing the Security Device

The Security Device must be installed on the machine where the TAPI Service Provider is (or will be) installed. The Security Device provides software protection so that when the Security Device is not attached, the TAPI Service Provider for Meridian 1 will not run.



The Security Device has a 25-pin connector that attaches the end of the Security Device labeled ↑COMPUTER↑ to a parallel printer port of an IBM PC/XT/AT, PS/2, or true IBM-compatible computer.

The Security Device can be attached to any parallel port. Tighten the screws to connect the Security Device securely to the port. If a printer is connected to the computer, attach a shielded printer cable to the outside connector of the Security Device.

If the computer is close to a wall or another obstacle, you can attach an extension cable to the port, then attach the Security Device to the cable. Use a straight-through DB-25 male-to-DB-25 female cable.

Installing the Symposium TAPI Service Provider Software

Ensure the baseline requirements are met before installing the Symposium TAPI Service Provider for Meridian 1 Release 2. If you are upgrading from a previous version of the TAPI Service Provider for Meridian 1, be sure to remove the previous version before installing the current version. Information is provided in the “Removing TAPI Service Provider Software” section located in Chapter 7.

You must have administrative rights to install this software and be familiar with the TAPISRV operation. Before reinstalling Symposium TAPI Service Provider software, be sure that the TAPI SERV.exe (Telephony Services) is not running and that the Telephony Service has been stopped. You can verify this by accessing the Control Panel and double-clicking on the Services icon to display the *Services* dialog box.

Note: Do not install the Symposium TAPI Service Provider software using the **Add/Remove** program on the Control Panel. Using the Add/Remove program displays a warning to close all open windows (including the Control Panel) before continuing with the installation. Follow the directions as provided in this section for completing the installation.

Special installation instructions may be required if, after installing the Symposium TAPI Service Provider software, the need arises to upgrade or to install a patch for the installed software. These instructions are contained in the Release Notes provided with the new software.

Note: TCP/IP must be configured and operational on both the Meridian 1 host link and on the TAPI Service Provider.

Installing the Symposium TAPI Service Provider for Meridian 1 Release 2 consists of accessing the *Select Installation* dialog box, selecting the type of installation you prefer, and before completing the installation, selecting to view or not view the Readme.txt file. Choosing to view the Readme.txt file displays it on your desktop when the installation is complete.

Note: Do not minimize the install shield or other dialog boxes during installation. You are required to enter information during the installation process on certain dialog boxes and these dialog boxes do not display if you minimize the program.

To Install the Symposium TAPI Service Provider Software:

1. Access the *Select Installation* dialog box:
 - a. Log on to the Windows NT Server.
 - b. Insert the Symposium TAPI Service Provider CD ROM into the CD ROM driver.
 - c. Run the **Setup.exe** program.
Select **Run** from the Start menu to display the *Run* dialog box.

Type the CD ROM drive\setup.exe
For example, *E:\setup.exe*

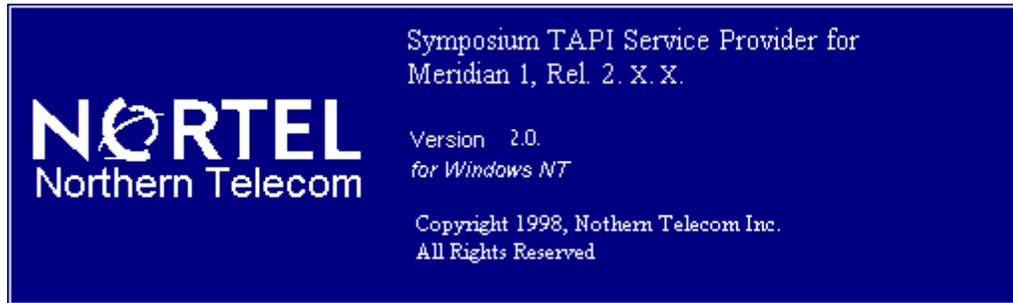
Note: We do not recommend that you install the Symposium TAPI Service Provider software using the **Add/Remove** program on the Control Panel. Using the Add/Remove program displays a warning to close all open windows (including the Control Panel) before continuing with the installation.

Or

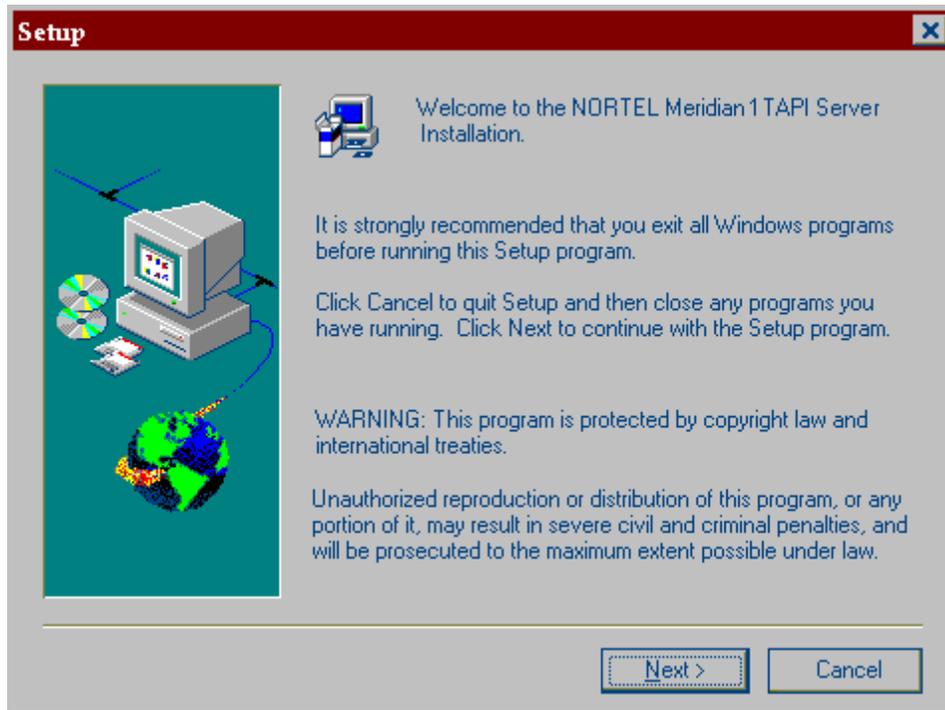
From the *Windows NT Explorer* window, click on the CD ROM drive to display the folders and files.

Double-click on the **Setup.exe** file.

The Meridian TAPI Service Provider installation process begins.



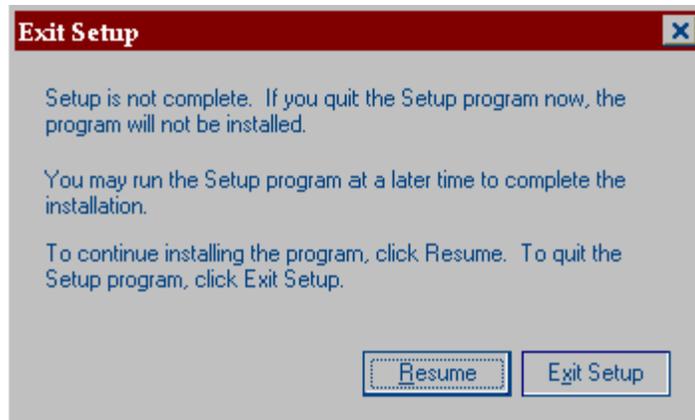
The *Welcome* screen is displayed.



- d. Click on the **Next >** button to continue the installation process.

Or

Click on the **Cancel** button located on any installation dialog box to cancel the installation at any time.

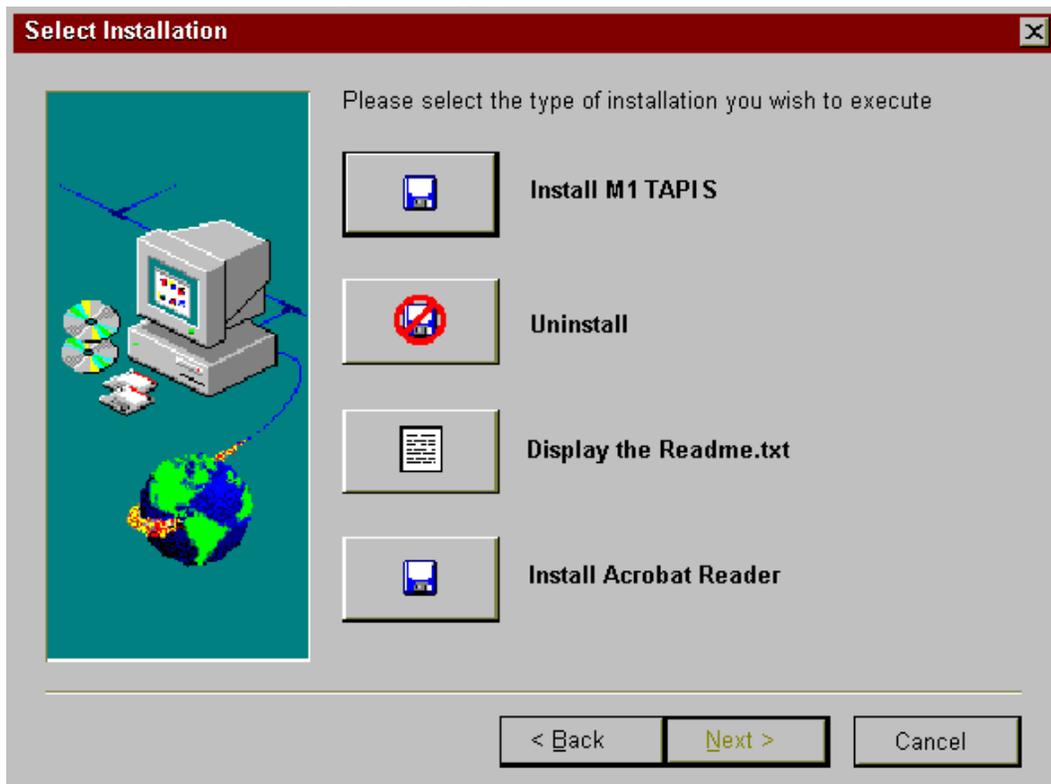


Click on the **Exit Setup** button to cancel the installation process.

Or

Click on the **Resume** button to continue the installation process.

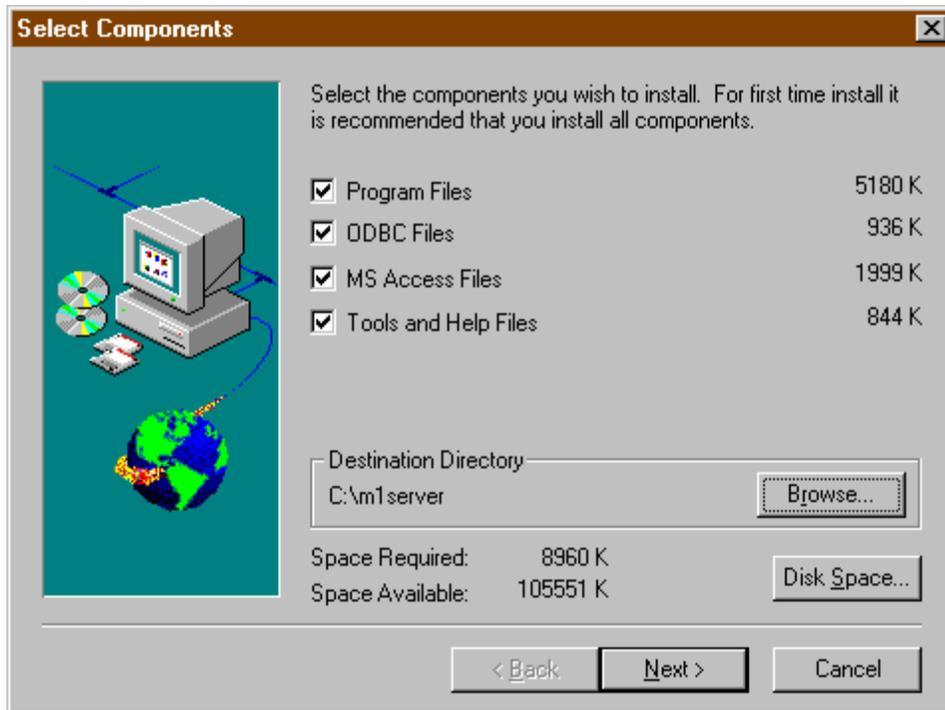
The *Select Installation:* dialog box is displayed.



2. Click on the **Install M1TAPIS** button.

Note: From this dialog box, you have the option to uninstall the Symposium TAPI Service Provider software, to display the Readme.txt file or to install the Acrobat Reader.

3. Click on the **Next >** button.
The *Select Components* dialog box is displayed.



4. The option to install the available files is designated by a check mark in the check box. Click on the check box to deselect the option. Ensure a check mark is displayed in the check boxes of the files you wish to install.
5. Ensure that the destination directory is correct. The default directory is displayed. If the default directory is not correct, click on the **Browse** button to access the *Choose Directory* dialog box.



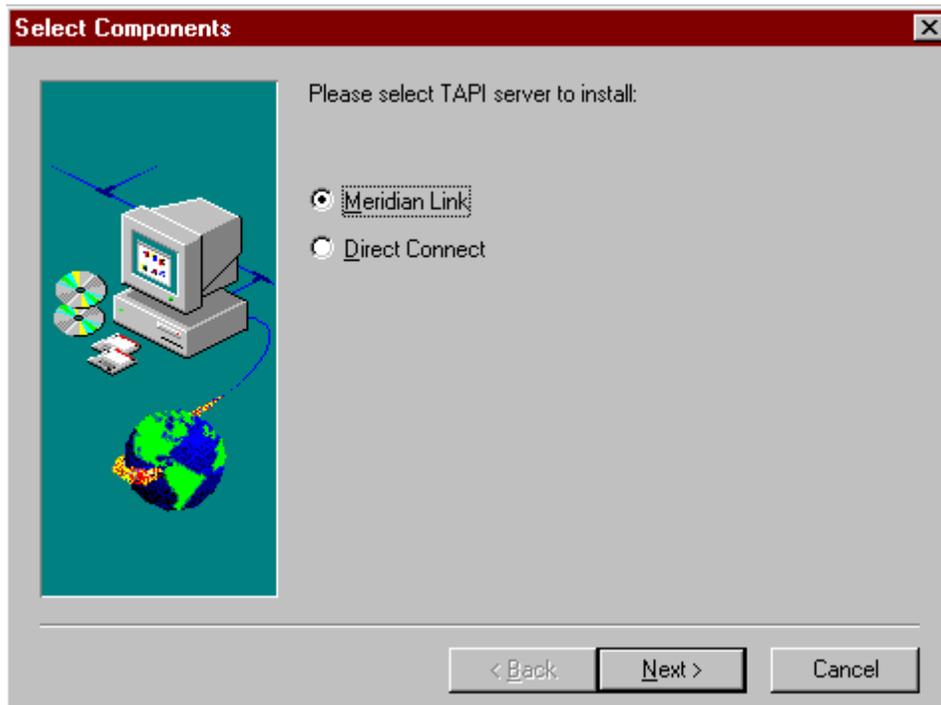
Type or Select the *desired path and directory* and click on the **OK** button.

6. The *Select Components* dialog box displays the available disk space. If the selected directory does not have enough disk space, click on the **Disk Space...** button. The *Available Disk Space* dialog box is displayed.



- a. Click on the down arrow located next to the *Drive* listbox to display the list of available drives.
 - b. Select the new drive.
 - c. Click on the **OK** button to close the *Available Disk Space* dialog box.
7. Click on the **OK** button located on the *Select Components* dialog box to continue the installation. If you selected the **Tools and Help Files** check box, the *Enter Password* dialog box is displayed. Enter the *password* for the accessing the *Programmer's Guide* document and press **Next Or**
Press **Next** to continue the installation.

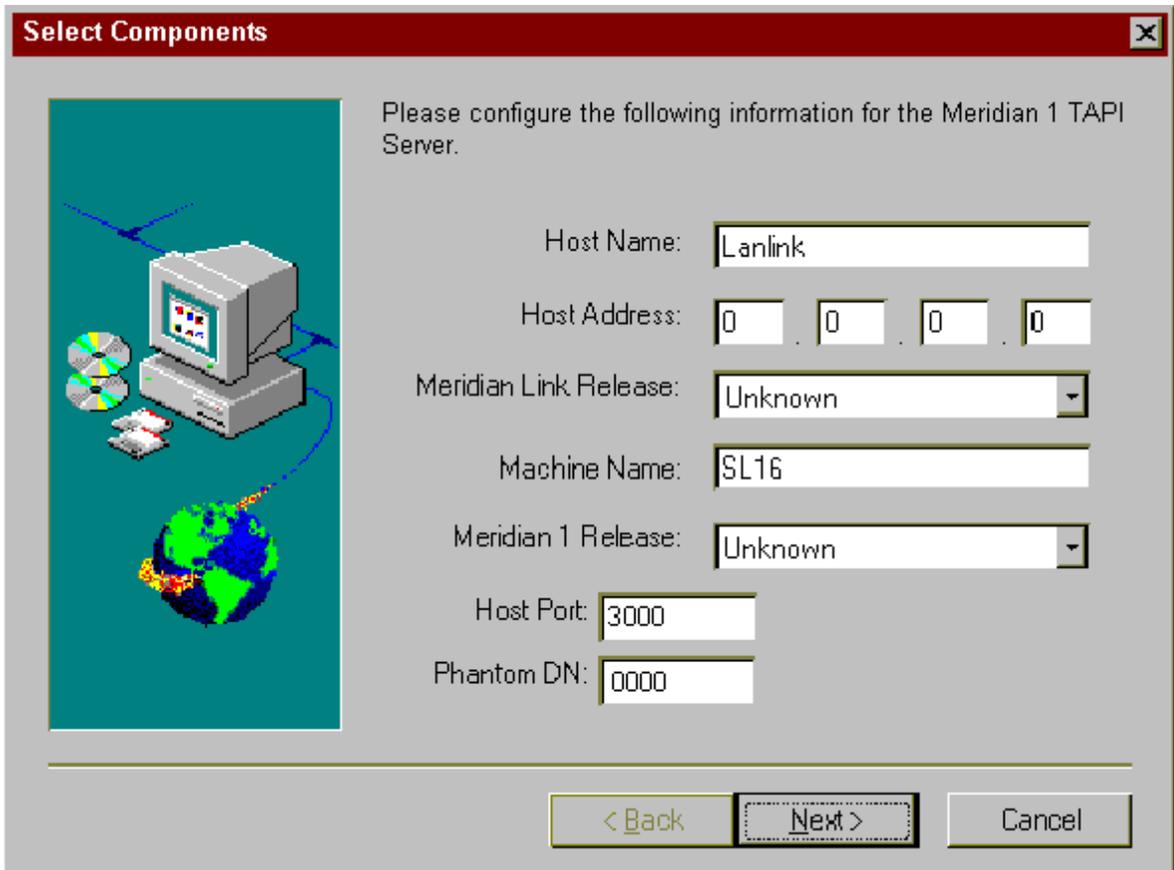
If you selected the **Program files** check box, the following dialog box is displayed.



Click in the Radio button to select the type of Symposium TAPI Service Provider to install. The default is **Meridian Link**. For the Symposium Call Center Server, select the **Meridian Link** option.

The Symposium TAPI Service Provider installation files are copied to the designated directory.

When the files are copied, the following dialog box is displayed.



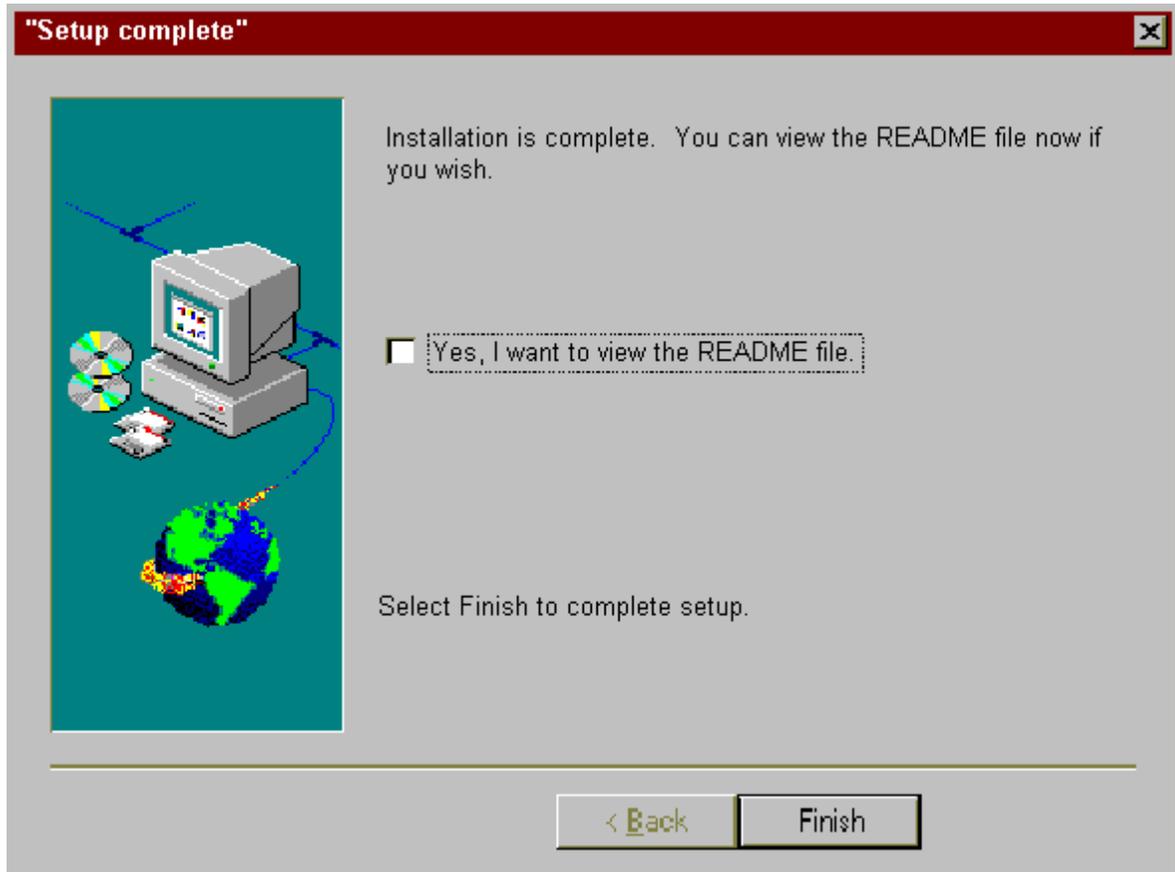
8. Perform the following configurations on this dialog box:
 - a. Verify the following **defaults** and change them only if they do not contain the correct information:
 1. *Host Name*: The default is **Lanlink**.
This name must match the name configured in Meridian Link.
For Meridian Link, SCCS, and Direct Connect, accept the default.

Note: We recommend that you do not change this field as changing this field may cause your system to malfunction.

 2. *Machine Name*: The default is **SL16**.
This name must match the Meridian 1 name configured in Meridian Link.
For Meridian Link, SCCS or Direct Connect, accept the default **SL16**.
 3. *Host Port*: The default is **3000**.
The host port must match the one configured in Meridian Link.
For Meridian Link or SCCS, accept the default 3000.
Enter **8888** if you are installing the Direct Connect option.
 - b. Enter the **Host address** in the fields provided. This is the TCP/IP address for the following:
 1. Meridian Link module (Meridian Link), or
 2. SCCS CLAN (SCCS server), or
 3. the Meridian IELAN (Direct Connect).
 - c. Click on the down arrow next to the *Select the Meridian Link Release* field to display the list of available releases and select the Meridian Link Release you have installed.
 - d. Click on the down arrow next to the *Meridian 1 Release* field to display the list of available releases and select the Meridian 1 release you have installed.

- e. If you configured in step 5 of the “Overview of the Complete Installation Process” section, click in the *Phantom DN* field and enter the **configured Phantom DN number**. This is not necessary if you have X11 Release 22 or above.
- f. Click on the **Next >** button.

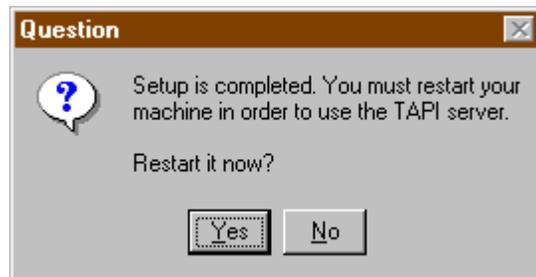
The installation is complete. If you selected the **Tools and Help Files** option on the *Select Components* dialog box, you are provided the option to read the Readme.txt file now.



- 9. Click on the **Yes I want to view the README file** check box to display the Readme.txt file on the desktop. The Readme.txt file provides valuable information on the Symposium TAPI Service Provider for Meridian 1. We recommend that you read this file before configuring and using the Symposium TAPI Service Provider for Meridian 1. Click on the **Finish** button. The *Information* dialog box is displayed.

Or

If you did not select the **Tools and Help Files** option on the *Select Components* dialog box, the following Information dialog box is displayed.



Click on the **Yes** button.

The *NORTEL MITAPIS* program group is displayed on the Program list.

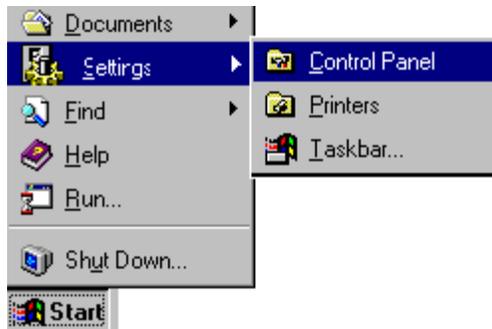


Adding the Symposium TAPI Service Provider Driver in Windows NT

After installing the Symposium TAPI Service Provider software files, you add the Symposium TAPI Service Provider driver in Windows NT by accessing the *Telephony Properties* dialog box and selecting the Symposium TAPI Service Provider for Meridian 1.

To Add the Symposium TAPI Service Provider Driver in Windows NT:

1. Access Windows.
2. Access the *Telephony* dialog box.
 - a. Click on or drag the mouse button cursor to the **Start** button  located on the window Taskbar.
The **Window** menu displays the options.
 - b. Click or drag the mouse button cursor to the **Settings** option.
The *Settings* options are displayed.



- c. Click or drag the mouse button cursor on **Control Panel**.
The *Control Panel* window opens.



- d. Double-click on the **Telephony** icon.
The *Telephony Drivers* dialog box displays the list of installed telephony drivers.

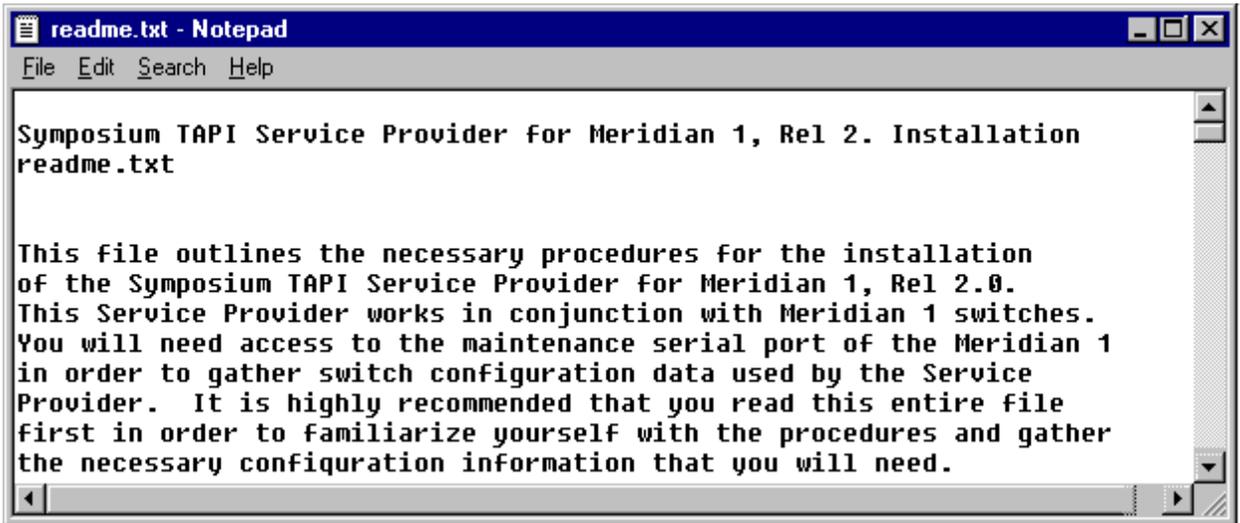
Note: When installing the Symposium TAPI Service Provider for the first time, it is not on the list.

3. Click on the **Add...** button.
The *Add Driver* dialog box is displayed.
 4. Click on **Meridian 1 TAPI Service Provider** to select it.
Meridian 1 TAPI Service Provider is highlighted.
 5. Click on the **Add** button.

6. Click on the **C**lose button to close the dialog boxes.

Viewing the Readme.txt File

If you selected to read the Readme.txt document during installation, it displays on the desktop when the installation is complete.



If you did not select to view the Readme.txt file during the installation process, you can access the file from the *NORTEL MITAPIS* program list.

To Access the Readme.txt File:

Click on **Start** and select the Select **Readme.txt** from the *NORTEL MITAPIS* program list.



The Readme.txt file is displayed on the desktop with the Notepad application. The Notepad application provides the option to print the Readme.txt file by selecting the **P**rint option from the **F**ile menu.

You are now ready to configure the Symposium TAPI Service Provider and the License. Refer to Chapter 3 for detailed information on configuring the Symposium TAPI Service Provider and the License.

Chapter 3 Configuration

This chapter provides an overview of the Configurator application and the FLEXIm License Manager. It includes the tasks necessary to configure the Symposium TAPI Service Provider and the License. The License must be configured before initializing the Meridian 1 TAPI Service Provider.

The Configurator Application Overview

The Configurator application allows you to populate and maintain the Symposium TAPI Service Provider database tables. These tables include entries for each controllable telephone. The Configurator application contains a series of configuration dialog boxes that display the database information and allow for adding, modifying, and deleting this information. In addition, when you have multiple customer numbers (0 and 1), you can maintain customer information in separate databases.

The Configurator application provides an easy method to download information from the Meridian 1 switch and use this information to populate the Symposium TAPI Service Provider database. After you download information files from the Meridian 1 switch, the Configurator application translates these files and populates the Symposium TAPI Service Provider database. Accessing the Configurator application displays the database information in the various configuration dialog boxes. These dialog boxes allow you to maintain the database tables by adding, modifying, or deleting the information contained in the fields.

Note: The Configurator dialog boxes contain information that was downloaded from the Meridian 1 switch or information that was manually entered. Adding, modifying, or deleting information on the configuration dialog boxes does **NOT** affect the switch. Likewise, changes to the switch do **NOT** automatically change the information on the configuration dialog boxes (Symposium TAPI Service Provider database).

In addition, you have the option to populate the Symposium TAPI Service Provider database tables manually without downloading the Meridian 1 switch files. You access the configuration dialog boxes and manually enter the information in the fields provided on the various configuration dialog boxes. Depending upon the number of phones your Windows NT server controls, the information required for the database tables may be extensive. As such, manually populating the Symposium TAPI Service Provider database would be very time consuming.

As an Administrator, you are provided the ability to share this centralized database with a network connection. This database can either be shared on a file server or by a database server in a client-server architecture. Access restrictions are determined by the privileges assigned within the Windows NT server configuration.

This chapter contains the following sections to assist you in configuring the Symposium TAPI Service Provider database:

- *Running the Configurator Application* - Provides information on starting the Configurator Application. This application accesses the *MIS Configuration* dialog box. This dialog box provides access to the configuration dialog boxes and to the Convert Text File tool that is used in the Automatic Configuration process.
- *Downloading the Symposium TAPI Service Provider Database Information* - Lists the steps involved in acquiring the Meridian 1 switch information and adding the information to the database file.

- *Configuring the Symposium TAPI Service Provider Database Information* - Lists the steps for accessing the Symposium TAPI Service Provider *Configuration* dialog box. This dialog box provides access to the configuration dialog boxes used to configuration the database tables. In addition, the sections contain detailed information on configuring each database table and the dialog boxes used to configure the database tables.

Running the Configurator Application

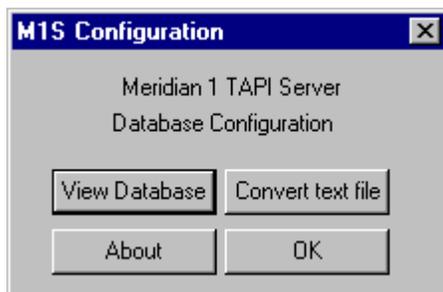
Running the Configurator application displays the *MIS Configuration* dialog box. This box provides push buttons that to access the configuration dialog boxes and the Convert Text File tool. The **Convert Text File** conversion tool is used during the Automatic Configuration process. The **View Database** button is used to access the configuration dialog boxes.

To Run the Configurator Application:

Select the **Config Database** program from the *NORTEL MITAPIS* program group.



The *MIS Configuration* dialog box is displayed.



Downloading and Translating Meridian 1 Switch Information

The Configurator application automatically translates and populates the Symposium TAPI Service Provider for Meridian 1 database tables from downloaded Meridian 1 switch information. This process saves valuable time when extensive information is required for the database tables. However, if you do not want to download information from the Meridian 1 switch, proceed to the “Configuring the Symposium TAPI Service Provider for Meridian 1 Database Information” section in this chapter. This section provides you with the information to manually enter the required information.

Note: The dialog boxes in the Configurator application contain information that was downloaded from the Meridian 1 switch or information that was manually entered. Adding, modifying, or deleting information on the configuration dialog boxes does **NOT** affect the switch. Likewise, changes to the switch do **NOT** automatically change the information on the configuration dialog boxes (Symposium TAPI Service Provider database).

Downloading and translating Meridian 1 switch information consists of the following steps:

1. Create the configuration information text file (download.txt) that receives the information that is downloaded from the Meridian 1 switch overlay programs.

- Download the switch configuration information to the configuration information text file (download.txt) created in the first step.

This step involves capturing your Meridian 1 switch configuration information and adding the information to a configuration database on the server. The Symposium TAPI Service Provider uses this information to control the telephone sets. The following overlay programs contain the Meridian 1 switch configuration information:

Overlay Program	Request	Type	
Overlay 20 (LD 20)	PRT	TNB	to list all the used Terminal Number Blocks
Overlay 21 (LD 21)	PRT	RDB	to list Route Data Blocks (Customer number and route number)
Overlay 23 (LD 23)	PRT	CDN	to list all Control Directory Number Blocks configured within the switch

- Convert the Text file (download.txt) and populate the Host, Provider, and Log style tables in the database with the information obtained from the switch.

Step 1: Creating the Switch Configuration Information Text File

To Create the switch configuration information text file:

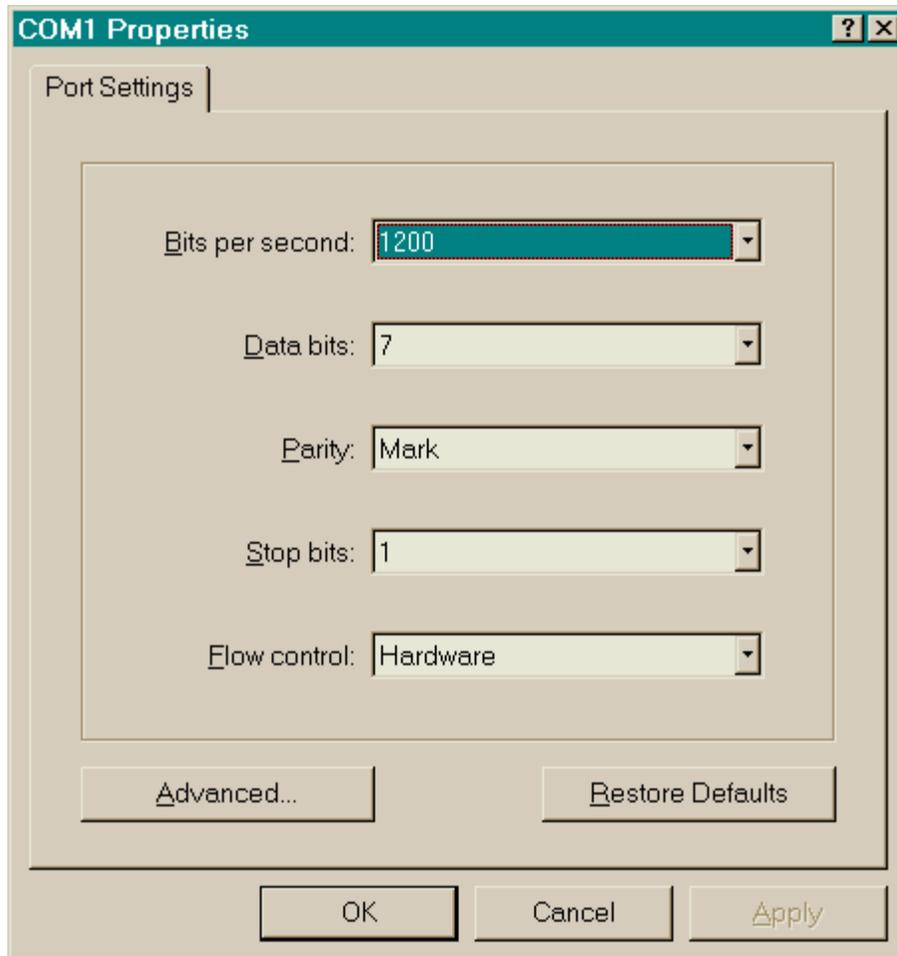
- Create a text file (**download.txt**) using Notepad.exe or another text file editor.
- Save the text file in the **c:\M1Server** directory.

Step 2: Downloading the Switch Configuration Information

To Download the Switch Configuration Information to the Text File:

- Connect to your Meridian 1 switch (either remote or direct) using the **Terminal.exe** or the **Hyperterminal.exe** program included in Windows NT. The Terminal application (using a baud rate of 1200) dials the modem number of your Meridian 1 switch.

The *Port Settings* dialog box is displayed (for demonstration purposes, the dialog box is from the Hyperterminal.exe program).



2. Log on to the switch.
3. Save the switch configuration information to the **download.txt** file (created in Step 1: Creating the Switch Configuration Information Text File)
 - a. Under the *Transfers* menu,
 - select the **Receive Text File** option if using the **Terminal.exe** program.
 - Or**
 - select the **Capture Text** option if using the **Hyperterminal.exe** program.
 - b. Select the **download.txt** file (located in the c:\MIServer directory).

Note: The commands listed in steps c, d, and e are the relevant commands for this process. Other commands may appear on your display. If so, press <return> until a command listed is displayed.

- c. Capture the LD 20 information:

At this command	Type this response
>	LD 20
REQ:	PRT
TYPE:	TNB
CUST	0 (or customer number if not 0)
~	
DES	<return>

Wait for the Load 20 to finish. This is usually be a lengthy process. Return to the ready (>) prompt, for example, type ****.

- d. Capture the LD 21 information:

At this command	Type this response
>	LD 21
REQ:	PRT
TYPE:	RDB
CUST	0 (or customer number if not 0)
~	
ACOD	<return>

Wait for the Load 21 to finish. This is usually be a lengthy process. Return to the ready (>) prompt, for example, type ****.

- e. Capture the LD 23 information:

At this command	Type this response
>	LD 23
REQ:	PRT
TYPE:	CDN
CUST	0 (or customer number if not 0)
~	
CDN...	<return>

Wait for the Load 23 to finish. This is usually be a lengthy process.

4. Turn off the text file receive option.

If you are using the **Terminal.exe** program, select the **Stop** button.

Or

If you are using the **Hyperterminal.exe** program, select the **Capture Text Stop** option on the *Transfers* menu.

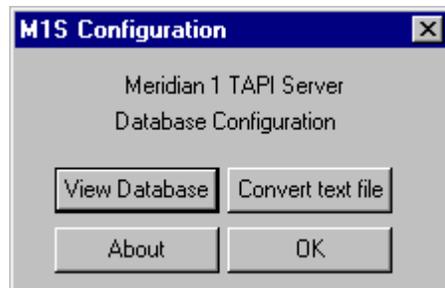
5. Close the Terminal application. The server information is saved to the disk.

Step 3: Converting the Text File

To Convert the Text File:

1. Run the Configurator application. Refer to the “Running the Configurator Application” section in this chapter.

The *MIS Configuration* dialog box is displayed.



2. Click on the **Convert text file** button.
The *Open* dialog box is displayed.
3. Select the **c:\MISERVER\download.txt** file and click on the **Open** button.
The *Text File Translator Status* dialog box is displayed.



4. Click on the **Start** button.
5. When the file translation is complete, click on the **Close** button.

Note: This process adds all downloaded Meridian 1 switch information to the Meridian TAPI Service Provider database. Certain information may be added that is not necessary or may be omitted, so configuring the database tables is necessary to accurately reflect your circumstances. For example, if you are monitoring IVR ports, they must be set on the *TN Table* dialog box or the Symposium TAPI Service Provider for Meridian 1 assumes they are analog. Also, the download process downloads all CDNs. You must delete any CDNs not used by this program.

The Configurator application provides configuration dialog boxes for viewing, adding, modifying and deleting the information contained in the Symposium TAPI Service Provider *for* Meridian 1 database tables. Refer to the “Configuring the TAPI Service Provider Database Information” section for information on accessing the configuration dialog boxes.

Creating an Additional Database

When you have multiple customer numbers (0 and 1), you have the option to create an additional Symposium TAPI Service Provider database. You will follow the same steps for the downloading and translating the Meridian 1 switch information. However, the new database must either have a different name or be located in a different directory than the first database.

Also, when downloading the switch configuration information, you must type the correct customer number, for example, type 1 instead of 0.

Note: If you create an additional database, be sure the correct database file is loaded before you access the Configurator application to view the database information. There is no way to switch databases after accessing the Configurator application. You must close the Configurator application, reload the correct database file, and reopen the Configurator application.

This function is recommended for experienced database administrators only.

Configuring the TAPI Service Provider Database Information

The Configurator application provides a series of dialog boxes for configuring the Symposium TAPI Service Provider database information. If you did not download Meridian 1 switch information, the fields are blank and allow you to enter all required information. However, if you downloaded Meridian 1 switch information, this information is displayed in the fields on the dialog boxes. It may be necessary to configure this downloaded information to reflect your particular circumstances.

Note: The information displayed in the configuration dialog boxes is information contained in the Symposium TAPI Service Provider database. This information was downloaded from the Meridian 1 switch or manually entered. Adding, modifying, and deleting information on the configuration dialog boxes do **NOT** affect the switch or the set configuration. Likewise, changes to the switch configuration do **NOT** automatically change the information in the configuration dialog boxes (Symposium TAPI Service Provider database).

The “Verifying the Symposium TAPI Service Provider is Installed and Configured Properly” section located in Chapter 5, provides helpful information on ensuring the Symposium TAPI Service Provider is properly installed and configured.

Configuring the Symposium TAPI Service Provider Database information consists of the following steps:

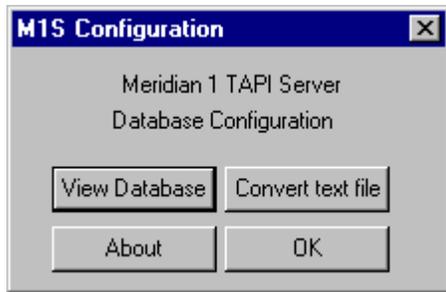
1. Start the Configurator application to access the *Database Configuration* dialog box.
2. Configure the Provider table by accessing the *Provider Table* dialog box and adding, modifying, or deleting the information.
3. Configure the Host table by accessing the *Host Table* dialog box (and, in turn, the *Treatment Table*, *TN*, *Phone Styles*, and *DN Table* dialog boxes) and adding, modifying, or deleting the information. Select IVR (on the TN table dialog box), if necessary.
4. Configure the Control DN table by accessing the *CDN* dialog box and adding, modifying, or deleting the information. Delete any CDNs not controlled by this program.
5. Configure the Log Styles table by accessing the *Log Styles* dialog box and creating new log styles. Logging styles are used by the Logger application to determine which data items are logged for troubleshooting purposes. The logging styles are selected on the configuration dialog boxes. Selecting the default “1” style allows the Logger application to log all data items. (Selecting the default “0” turns off the logging on all data items. Creating a new Log style allows you to select specific data items for logging purposes.

Accessing the Database Configuration Dialog Box

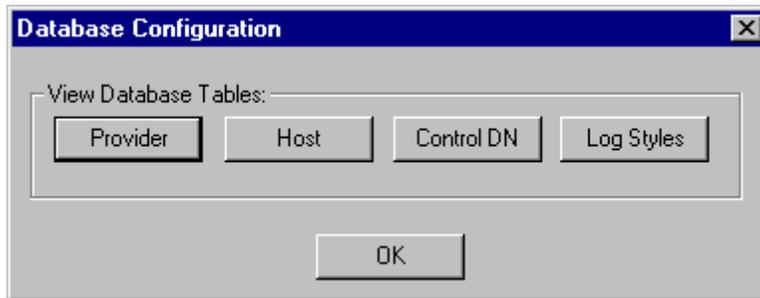
The *Database Configuration* dialog box provides access to the configuration dialog boxes.

To Access the *Database Configuration* dialog box:

1. Run the Configurator application. Refer to the “Running the Configurator Application” section. The *MIS Configuration* dialog box is displayed.



2. Click on the **View Database** button.
The *Database Configuration* dialog box is displayed.



The *Database Configuration* dialog box buttons provide access to the following dialog boxes:

Button	Dialog Box
Provider button	<i>Provider</i> dialog box - Provides access to the <i>Log Style Table</i> for the Provider table
Host button	<i>Host Table</i> dialog box - Provides access to the <i>Treatment Table</i> dialog box * Provides access to view the <i>Log Style Table</i> for the Treatment table - Provides access to the <i>TN Table</i> dialog box * Provides access to the <i>Phone Style</i> dialog box + Provides access to view the <i>Log Style Table</i> for the LineStyle (Phone) table + Provides access to view the <i>Log Style Table</i> for the Address Style (Phone) table * Provides access to the <i>DN Table</i> dialog box + Provides access to view the <i>Log Style Table</i> for the DN table * Provides access to view the <i>Log Style Table</i> for the TN table - Provides access to view the <i>Log Style</i> table dialog box for the Host table
Control DN button	<i>CDN</i> dialog box
Log Styles button	<i>Log Styles</i> dialog box

Each table allows you to add, edit, or delete information as necessary.

Configuring the Provider Table

The *Provider* dialog box allows you to add or modify the provider database information. The *Provider* dialog box displays information on the application currently registered with the Meridian Link Module.

In addition, you have the option to select the style that this information is displayed in the Logger application for troubleshooting purposes. Two default styles (0=no data items display, 1=all data items display) are provided. Refer to the “Configuring the Log Style Table” section for information on creating additional styles.

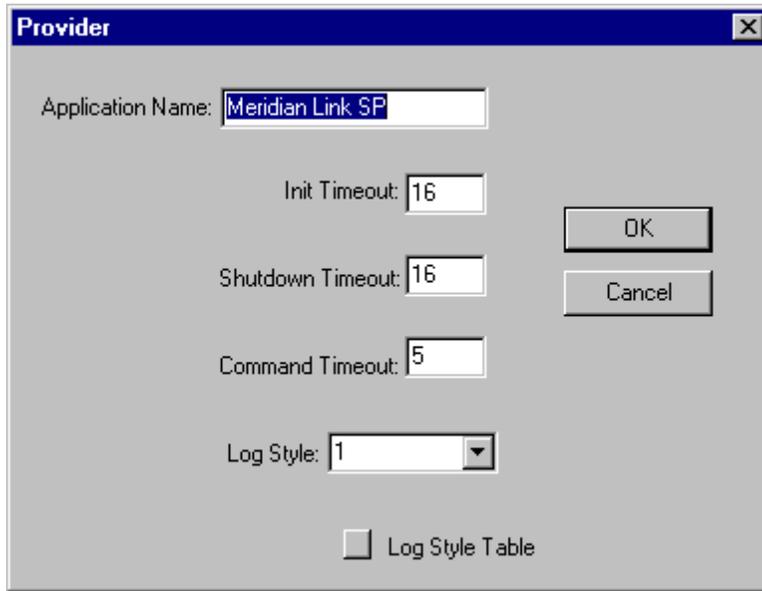
Configuring the Provider Table consist of the following three steps (detailed information is provided for each step):

1. Access the *Provider* dialog box.
2. Add or modify the information.
3. Close the *Provider* dialog box.

To Access the *Provider* dialog box:

From the *Database Configuration* dialog box (refer to the “Accessing the *Database Configuration* Dialog Box” section):

Click on the **Provider** button.
The *Provider* dialog box is displayed.



The *Provider* dialog box fields and buttons:

Provider Data Fields	Description
Application ID	A maximum of 20 ASCII characters that uniquely identifies the originating application from other application registered with the Meridian Link Module.
InitTimeout	The length of time the application will wait during the initialization process to establish communication before generating an error (default = 16).
ShutdownTimeout	The length of time the application will wait for shut down to be complete before generating an error (default = 16).
Command Timeout	The length of time the service provider will wait for command responses before generating an error (default = 5)
Provider Log Style	The Number of the Log Style that is defined for this application (default = 1).
Provider Buttons	Description
Log Style Table	Displays the <i>Log Styles</i> dialog box with the data items that will be logged and transferred to the <i>Logger</i> window when the <i>Logger</i> application is running.

To Modify the *Provider* dialog box information:

1. Click in the field to be changed and enter the information.
2. Select the Log Style.
 - a. Click on the down arrow located in the Log Style field to display the available log styles.
 - b. Click on the desired style.

Clicking on the **Log Style Table** button displays the selected data items associated with the selected Log Style. Refer to the “Configuring the Log Styles Table” for information on creating additional log styles.

To Close the *Provider* dialog box:

1. Click on the **OK** button to close the *Provider* dialog box and save the information.
Or
Click on the **Cancel** button to close the *Provider* dialog box and cancel any changes. The *Database Configuration* dialog box is displayed.
2. Click on the **OK** button to close the *Database Configuration* dialog box. The *MIS Configuration* dialog box is displayed.
3. Click on the **OK** button to exit the Configurator application.
Or
Click on a button to view another database table information.

Configuring the Host Table

The *Host Table* dialog box allows you to add or modify the Host/Machine/Association information contained in the database. The *Host Table* dialog box displays information that the Symposium TAPI Service Provider needs regarding the Meridian Link and the Meridian 1. The buttons located at the bottom of the *Host Table* dialog box provide access to additional dialog boxes for adding and maintaining specific database information.

Note: Adding, modifying, and deleting the information on the Treatment, TN, or DN configuration dialog boxes changes the information contained in the Symposium TAPI Service Provider database. This does not affect the Meridian 1 Switch or the set configuration. Likewise, changes to the switch configurations are not automatically reflected in the Symposium TAPI Service Provider database or on these dialog boxes.

In addition, you have the option to select the style that this information is displayed in the Logger application for troubleshooting purposes. Two default styles (0=no data items display, 1=all data items display) are provided. Refer to the “Configuring the Log Style Table” section for information on creating additional styles.

Configuring the Host Table consist of the following four steps (detailed information is provided for each step):

1. Access the *Host Table* dialog box.
2. Add or modify the information on the *Host Table* dialog box.
3. Access the other dialog boxes associated with the Host database information.
 - a. Access the *Treatment Table* dialog box and add or modify the information.
 - b. Access the *TN Table* dialog box and add or modify the information.
From the *TN Table* dialog box, access the *Phone Style* dialog box and add or modify the phone style information associated with the TN displayed on the *TN Table* dialog box.
From the *TN Table* dialog box, access the *DN Table* dialog box and add or modify the DN information associated with the TN displayed on the *TN Table* dialog box.
4. Close the *Host Table* dialog box.

To Access the *Host Table* Dialog Box:

From the *Database Configuration* dialog box (refer to the “Accessing the *Database Configuration* Dialog Box” section):

Click on the **Host** button.

The *Host Table* dialog box is displayed.

Host Table

Host

Host Name:

Host Address: . . .

Meridian Link Release:

OK

Quit

Machine

Machine Name: Host Port:

Meridian 1 Release: Phantom DN:

Association

Customer Number: Monitor All DN's

Registration Password:

Monitor No DN's

Polling Interval:

Services

Inbound Call Processing

Outbound Call Processing Enhanced Routing

Log Style:

Trunk Table Treatment Table TN Table Log Style Table

Click on the down arrow located next to the *Meridian Link Release*, *Meridian 1 Release*, and *Log Style* fields to display the available information in those fields.

The *Host Table* dialog box fields, check boxes, and buttons:

Host Section Data fields	Description
Host Name	A maximum of 20 ASCII character ID that uniquely identifies the originating host that corresponds to the registered application. We recommend that you do not change the default field. The name in this field must match the Meridian Link configuration. This field is case sensitive.
Host Address	The TCP/IP address of the host for the following: Meridian Link module (Meridian Link), or SCCS CLAN (SCCS server), or the Meridian IELAN (Direct Connect).
Meridian Link Release	Displays a list of available Meridian Link software release numbers.
Machine Section Data fields	Description
Machine Name	A maximum 20 ASCII character ID that uniquely identifies the Meridian 1 that is associated with the registering application. This must match the Meridian Link configuration.
Host Port	Indicates the host port number. The host port must match the one configured in Meridian Link. For Meridian Link or SCCS, accept the default. Enter 8888 if you are installing the Direct Connect option
Meridian 1 Release	Displays a list of available Meridian 1 release numbers (5.0 or greater).
Phantom DN	A reserve directory number configured on the switch for call features hold, transfer, redirect or conference.
Association Data Section fields	Description
Customer Number	Integer that identifies the assigned customer number on the Meridian 1. (Values = 0 - 99)
Registration Password	An optional field for a minimum 4-character and a maximum 16-character string (ASCII number). The password is to be included if the application requires a password associated with the specific application registration.
Polling Interval	An integer number in 10 second units represented in HEX. (i.e., 1 = 10 seconds - 60 = 600 seconds)
Monitor all DNs button	Clicking on this button selects the option to monitor all DNs. This is the default. (The check box on the <i>DN Table</i> dialog box contains a check mark.)
Monitor No DNs button	Clicking on this button deselects the option to monitor all DNs. (The check box on the <i>DN Table</i> dialog box is empty.)
Services Check boxes	Description
Inbound Call Processing	Meridian 1 service associated with the application.
Outbound Call Processing	Meridian 1 service associated with the application.
Enhanced Routing	Meridian 1 service associated with the application.
Log Style	The Number of the Log Style that is defined for this application (default = 1).
Host buttons	Description
Trunk Table	Displays the <i>Trunk Table</i> dialog box. This dialog box contains information pertaining to the Trunk table route numbers.
Treatment Table	Displays the <i>Treatment Table</i> dialog box. This dialog box contains information pertaining to the Meridian 1 routes.
TN Table	Displays the <i>TN Table</i> dialog box. This dialog box contains information pertaining to the TN mappings within the Meridian 1 switch. In addition, the <i>TN Table</i> dialog box provides access to the <i>Phone Styles</i> and <i>DN Table</i> dialog boxes are provided.
Log Styles Table	Displays the <i>Log Styles</i> dialog box with the data items that will be logged and transferred to the <i>Logger</i> window when the <i>Logger</i> application is running.

To Add or Modify the Information on the *Host Table* Dialog Box:

1. Verify the displayed information in the following fields:

Host Name: The default is **Lanlink**.

The name in this field **must** match the Meridian Link configuration and it is case sensitive. For Meridian Link, SCCS, and Direct Connect, accept the default.

Note: We recommend that you do not change this field as changing this field may cause your system to malfunction.

Host Address: The TCP/IP address for the following:

Meridian Link module (Meridian Link), or
SCCS CLAN (SCCS server), or
the Meridian 1ELAN (Direct Connect).

Meridian Link Release: The displayed release is the correct Meridian Link release.

Machine Name: The default is **SL16**.

This name must match the Meridian 1 name configured in Meridian Link. For SCCS and Direct Connect, accept the default **SL16**.

Host Port: The default is **3000**.

The host port must match the one configured in Meridian Link. For Meridian Link or SCCS, accept the default. Enter **8888** if you are installing the Direct Connect option.

Meridian 1 Release: Displays a list of available Meridian Link software release numbers.

2. Click in the field and enter the information for the following:

Phantom DN

Customer Number

Registration Number

Polling interval

3. Click on the button to select to **Monitor** or to **Not Monitor all DNs**. The *DN Table* dialog box provides the option to monitor a specific DN.
4. Select the Services by clicking in the check box to display a check mark. (Selecting all services is recommended.)
5. Select the Log Style.
 - a. Click on the down arrow located in the Log Style field to display the available log styles.
 - b. Click on the desired style.

Clicking on the **Log Style Table** button displays the selected data items associated with the selected Log Style. Refer to the “Configuring the Log Styles Table” for information on creating additional log styles.

To Access the Other Dialog Boxes associated with the Host database table:

1. Access the *Trunk Table* dialog box and add or edit the information. Refer to the “Trunk Table Dialog Box” section for detailed information on this dialog box.
2. Access the *Treatment Table* dialog box and add or edit the information. Refer to the “Treatment Table Dialog Box” section for detailed information on this dialog box.

3. Access the *TN Table* dialog box and add or edit the information. Refer to the “TN Table Dialog Box” section for detailed information on this dialog box.

To Close the *Host Table* dialog box:

1. Click on the **OK** button to close the *Host Table* dialog box and save the information.
Or
Click on the **Cancel** button to close the *Host Table* dialog box and cancel any changes.
The *Database Configuration* dialog box is displayed.
2. Click on the **OK** button to close the *Database Configuration* dialog box.
The *MIS Configuration* dialog box is displayed.
3. Click on the **OK** button to exit the Configurator application.
Or
Click on a button to view another database table information.

Trunk Table Dialog Box

The Trunk Table database information is used to monitor outbound trunk routing. The *Trunk Table* dialog box allows you to add the route or routes to be monitored.

To monitor the trunk for the status events of answered and disconnected, ensure the following:

- On the Meridian 1, the trunk must be set up as AST
- On the Meridian 1, IAPG must be set up to select the appropriate events (1 = all events)
- The CTI application must register the trunk to be monitored

The status change messages for the monitored trunk can only be sent when the trunk statuses are detected, that is, when the trunk is equipped with answer supervision and disconnect supervision. If a digital trunk interface is used, the answer supervision and disconnect supervision are available. However, if a Universal trunk card is used, the SUPN prompt must be set to *yes* in Load 14 so the answer supervision and the disconnect supervision are allowed.

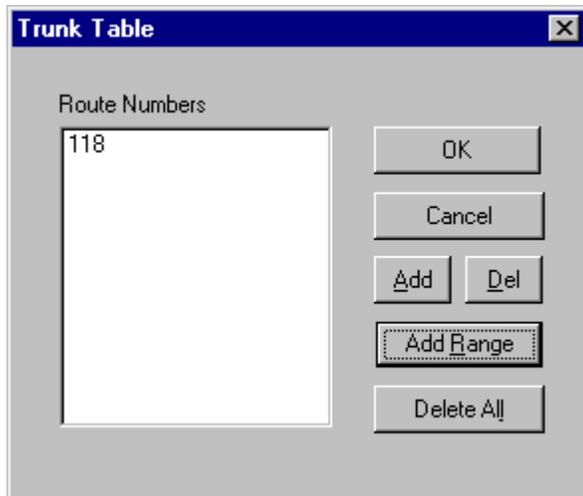
Note: Adding, modifying, or deleting a Route on this dialog box changes only the information contained in the Symposium TAPI Service Provider database. This does not affect the switch configuration.

Configuring the Trunk Table may consist of the following (detailed information is provided for each step):

1. Access the *Trunk Table* dialog box.
2. Add a new Route or Range of Routes to the Trunk table.
3. Delete the Route information on the Trunk table.
4. Close the *Trunk Table* dialog box.

To Access the *Trunk Table* dialog box:

From the *Host Table* dialog box, click on the **Trunk Table** button.
The *Trunk Table* dialog box is displayed.

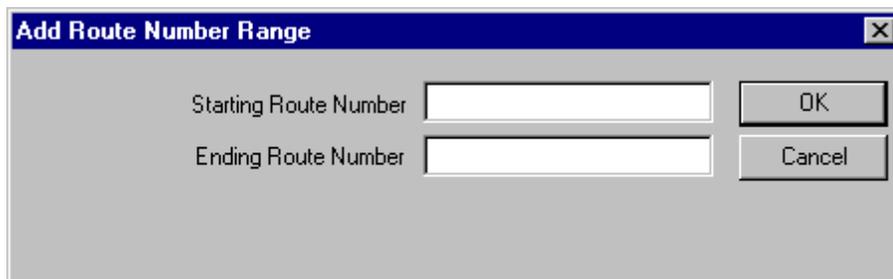


The *Trunk Table* dialog box fields and buttons:

Trunk Data fields	Description
Route Numbers	Displays the Route Numbers that are configured.
Treatments buttons	Description
Add	Displays a <i>Add Route Number</i> dialog box to enter information for adding a new Route number.
Del	Deletes the selected Route(s).
Add Range	Displays the <i>Add Route Number Range</i> dialog box for adding a range for the Route Numbers.
Delete All	Deletes all of the Route Number information contained in the Symposium TAPI Service Provider database.

To Add a Route Number Range:

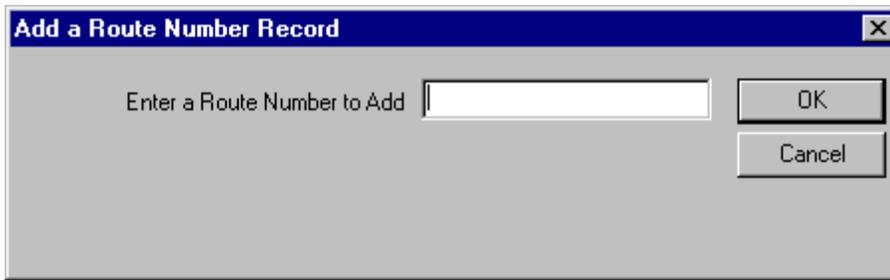
1. From the *Trunk Table* dialog box, click on the **Add Range** button to display the *Add Route Number Range* dialog box.



2. Enter the *starting route number* and the *ending route number* in the fields provided.
3. Click on the **OK** button.

To Add a Route Number Record:

1. From the *Trunk Table* dialog box, click on the **Add** button to display the *Add Route Number Record* dialog box.



2. Enter the *Route Number* information for a new route.
3. Click on the **OK** button.

To Delete the Route Number Information:

From the *Trunk Table* dialog box, click on the Route number to highlight it and click on the **Del** button.

Or

Click on the **Delete All** button to delete all Route numbers.

To Close the *Trunk Table* dialog box:

Click on the **OK** button to save the changes and close the *Trunk Table* dialog box.

Or

Click on the **Cancel** button to close the *Trunk Table* dialog box without saving any changes.

Treatments Table Dialog Box

The Treatments database information is used by the routing applications. The *Treatments Table* dialog box allows you to create a new treatment type and to modify an existing treatment type.

Note: Adding, modifying, or deleting a Treatment on this dialog box changes only the information contained in the Symposium TAPI Service Provider database. This does not affect the switch configuration.

Configuring the Treatments Table may include the following (detailed information is provided for each step):

1. Access the *Treatments Table* dialog box.
2. Add a new Treatment to the Treatments table.
3. Modify the treatment information on the Treatments table
4. Delete the treatment information on the Treatments table.
5. Close the *Treatments Table* dialog box.

To Access the *Treatments Table* dialog box:

1. From the *Host Table* dialog box, click on the **Treatments Table** button.
The *Treatments Table* dialog box is displayed.



- Click on the down arrow located next to the *Treatment Name* field to display the available information in that field.

The *Treatments Table* dialog box fields and buttons:

Treatments Data fields	Description
Treatment Name	User-define name to label this treatment. (Maximum length of 32 characters)
Route Number	0 - 511
Treatment Log Style	The Number of the Log Style that is defined for this application (default = 1).
Treatments Radio buttons	Description
Treatment Type	
Music	To select to play music.
RAN	To select to play a recorded message.
Treatments buttons	Description
Add	Displays a dialog box to enter information for adding a new treatment name.
Del	Deletes the displayed Treatment.
Delete All	Deletes all of the <i>Treatments Table</i> information contained in the Symposium TAPI Service Provider database.
Log Styles Table	Displays the <i>Log Styles</i> dialog box with the data items that will be logged and transferred to the <i>Logger</i> window when the <i>Logger</i> application is running.

- Click on the down arrow next to the *Treatment Name* field to display the Treatment Names in the database *Treatments Table*.

To Add a New Treatment to the *Treatments Database* table:

- Click on the **Add** button.
The *Add New Treatment* dialog box is displayed.
- Type the **new Name** in the edit field.
- Click on the **OK** button to close the dialog box.
- Enter the **Route Number**.
- Select the Log Style.

Clicking on the **Log Style Table** button displays the selected data items associated with the selected Log Style. Refer to the “Configuring the Log Styles Table” for information on creating additional log styles.

6. Click in the **Music** or **RAN** radio button to select the Treatment Type.

To Modify the Information Associated with a Treatment name:

1. Click on the down arrow next to the *Treatment Name* field to display the list of treatments.
2. Click on the treatment name you wish to edit.
The treatment name displays in the *Treatment Name* field.
3. Make changes to the Route number, Log style, or Treatment Type.

To Delete a Treatment from the Treatments Database table:

1. Click on the down arrow next to the Treatment Name field to display the list of treatments.
2. Click on the treatment name you wish to delete.
The treatment name displays in the Treatment Name field.
3. Click on the **Del** button to delete the displayed treatment from the Treatments database table.
Or
Click on the **Delete All** button to delete all Treatments from the Treatments database table.

To Close the *Treatments Table* dialog box:

Click the **OK** button to close the dialog box and save the changes.

Or

Click on the **Cancel** button to close the dialog box without saving the changes.

The *Host Table* dialog box is displayed.

To Quit the Configurator application.

1. Click on the **Quit** button to exit the Configurator application.
The *MIS Configuration* dialog box is displayed.
2. Click on the **OK** button to close the *MIS Configuration* dialog box and exit the Configurator application.

TN Table Dialog Box

The *TN Table* dialog box reflects the TN and DN mappings within the switch. This dialog box allows you to create a user-defined reference for a terminal number in the TN database table. In addition, the *TN Table* dialog box provides access to the *Phone Styles* and *DN Table* dialog boxes.

Note: Adding, modifying, or deleting a TN on this dialog box changes only the information contained in the Symposium TAPI Service Provider database. This does not affect the switch configuration.

Configuring the TN Table may consist of the following (detailed information is provided for each step):

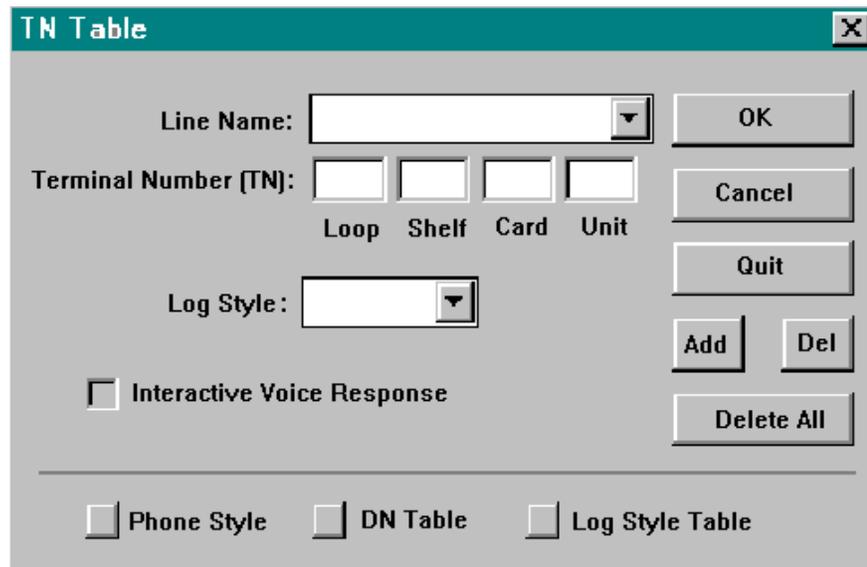
1. Access the *TN Table* dialog box.
2. Add or modify the information in the fields.
 - a. Adding a Terminal Number to the TN database table.
 - b. Deleting a Line Name from the TN database table.
 - c. Deleting the TN Table information from the TN database table.

3. Access the other dialog boxes to add or modify information.
 - a. Access the *Phone Styles* dialog box to add or modify the information.
 - b. Access the *DN Table* dialog box to add or modify the information.
4. Close the *TN Table* dialog box.

To Access the *TN Table* dialog box:

From the *Host Table* dialog box, click on the **TN Table** button.

The *TN Table* dialog box is displayed.



Click on the down arrow located next to the *Line Name* field to display the available information in that field.

The *TN Table* dialog box fields and buttons:

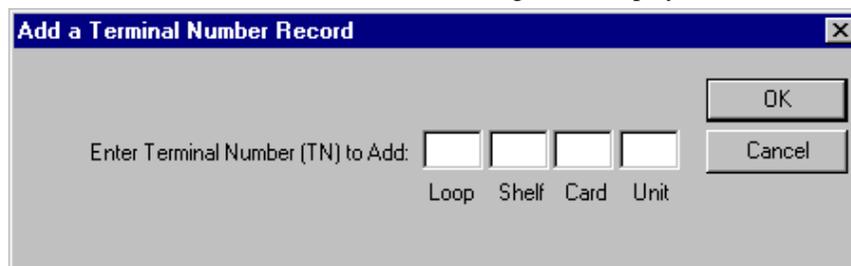
TN Data fields	Description
Line Name	List of Line Names that reference terminal numbers.
TN Number	The line card number configured in the Meridian 1 switch. This defines the location of the telephone by loop, shelf, card and unit.
TN Log Style	The Number of the Log Style that is defined for this application (default = 1).
Check Boxes	Description
Interactive Voice Response	Check box for when the Terminal Number is an Interactive Voice Response port. This check box is active only when the Symposium TAPI Service Provider provides the optional IVR.

TN Table dialog box fields and buttons, cont.

TN buttons	Description
Add	Displays a dialog box to enter information for adding a new TN in the <i>TN Line Name</i> field.
Del	Deletes the displayed Line Name.
Delete All	Deletes all of the TN Table information contained in the Symposium TAPI Service Provider database.
Phone Style	Displays the <i>Phone Styles</i> dialog box to add or edit the phone style information associated with the displayed Line Name in the <i>Line Name</i> field.
DN Table	Displays the <i>DN Table</i> dialog box to add or edit the DN Table information associated with the displayed Line Name in the <i>Line Name</i> field.
Log Style Table	Displays the <i>Log Styles</i> dialog box with the data items that will be logged and transferred to the <i>Logger</i> window when the <i>Logger</i> application is running.

To Add a Terminal Number to the TN Database Table:

1. Click on the **Add** button.
The *Add a New Terminal Number Record* dialog box is displayed.



2. Type the Loop, Shelf, Card, and Unit numbers.
3. Click on the **OK** button.
The *TN Table* dialog box is displayed.
4. Select the Log Style for the TN.
5. Check the **Interactive Voice Response** check box, if applicable.
6. Access the *Phone Style* and *DN Table* dialog boxes and add or modify the information associated with this Terminal Number.

To Delete a Line Name from the TN Database Table:

1. Click on the down arrow next to the *Line Name* field to display the list of Line Names.
2. Click on the line name you wish to delete.
The Line name displays in the *Line Name* field.
3. Click on the **Del** button to delete the displayed Terminal Number from the TN Table in the database.

To Delete a the TN Table Information from the Symposium TAPI Service Provider Database:

1. Click on the **Delete All** button.
2. Confirm the delete action on the confirmation dialog box.
The information is deleted.

To Access Another Configuration Dialog Box:

1. Select the desired Line Name. The Terminal Number is displayed.
2. Click on the **Phone Style** button or on the **DN Table** button to access the dialog box associated with the button.

Refer to the “Phone Style Dialog Box” section or the “DN Table” section for detailed information on these dialog boxes.
3. Make additions or changes as necessary.
4. Click on the **OK** button to close the dialog box and return to the *TN Table* dialog box.

To Close the *TN Table* Dialog Box:

1. Click the **OK** button to close the dialog box and save the changes.
Or
Click on the **Cancel** button to close the dialog box without saving the changes.

The *Host Table* dialog box is displayed.

To Quit the Configurator application.

1. Click on the **Quit** button to exit the Configurator application.
The *MIS Configuration* dialog box is displayed.
2. Click on the **OK** button to close the *MIS Configuration* dialog box and exit the Configurator application.

Phone Styles Dialog Box

The *Phone Styles* dialog box information is used for telephone configuration. This dialog box reflects the TAPI controllable feature keys and allows you to select the options for the Terminal Number displayed on the *TN Table* dialog box.

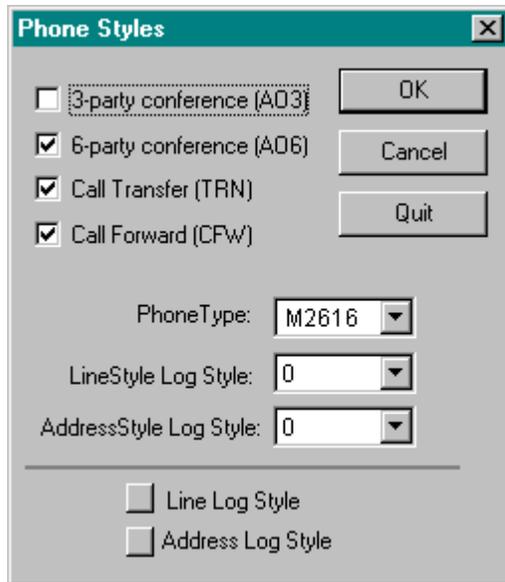
Configuring the Phone Styles may consist of the following (detailed information is provided for each step):

1. Access the *Phone Styles* dialog box.
2. Set the options for a phone type.
3. Close the *Phone Styles* dialog box.

To Access the *Phone Styles* dialog box:

1. From the *Host Table* dialog box, click on the **TN Table** button.
The *TN Table* dialog box is displayed.
2. Select the desired Terminal Number. The selected TN is displayed in the *Line Name* field on the *TN Table* dialog box.
3. Click on the **Phone Style** button located on the bottom of the *TN Table* dialog box.

The *Phone Styles* dialog box displays the information associated with the selected TN on the *TN Table* dialog box.



Click on the down arrow located next to the *Phone Type*, *LineStyle Log Style*, or *AddressStyle Log Style* fields to display the available information in that field.

The *Phone Styles* dialog box fields, check boxes and buttons:

Phone Styles Data fields	Description
Phone Type	Displays a list of available telephone model types.
LineStyle Log Style	The Number of the Log Style that is defined for the Line (default = 1).
AddressStyle Log Style	The Number of the Log Style that is defined for the Address (default = 1).
Phone Styles Check boxes	Description
3-party conference (AO3)	Check this box to assign a 3-party conference to the phone associated with the Line Name displayed on the <i>TN Table</i> dialog box.
6-party conference (AO6)	Check this box to assign a 6-party conference to the phone associated with the Line Name displayed on the <i>TN Table</i> dialog box.
Call Transfer	Check this box to assign the call transfer option to the Line Name displayed on the <i>TN Table</i> dialog box.
Call Forward	Check this box to assign a call forward option to the Line Name displayed on the <i>TN Table</i> dialog box.
Phone Styles buttons	Description
LineStyle Log Style	Displays the <i>Log Styles</i> dialog box with the data items that will be logged and transferred to the <i>Logger</i> window when the <i>Logger</i> application is running.
AddressStyle Log Style	Displays the <i>Log Styles</i> dialog box with the data items that will be logged and transferred to the <i>Logger</i> window when the <i>Logger</i> application is running.

To Set the Options for a Phone Type:

1. Click in the check boxes to select (with a check mark) or deselect (blank) the option.
2. Select the desired phone type.
 - a. Click on the down arrow located next to the *Phone Type* field.
The list of available phone types is displayed.
 - b. Click on the desired phone type to select it.
3. Select the LineLog style and the Address Log style.

To Close the *Phone Styles* dialog box:

Click the **OK** button to close the dialog box and save the changes.

Or

Click on the **Cancel** button to close the dialog box without saving the changes.

The *TN Table* dialog box is displayed. Closing the *TN Table* dialog box displays the *Host Table* dialog box.

To Quit the Configurator application.

1. Click on the **Quit** button to exit the Configurator application.
The *MIS Configuration* dialog box is displayed.
2. Click on the **OK** button to close the *MIS Configuration* dialog box and exit the Configurator application.

DN Table Dialog Box

The *DN Table* dialog box is used for telephone configuration. This dialog box displays the DN information for the Terminal Number that is displayed on the *TN Table* dialog box. The *DN Table* dialog box allows you to add or modify the DN database information. The *DN Table* dialog box presents one or two DNs. The number of DNs is limited by the number of AST devices per telephone.

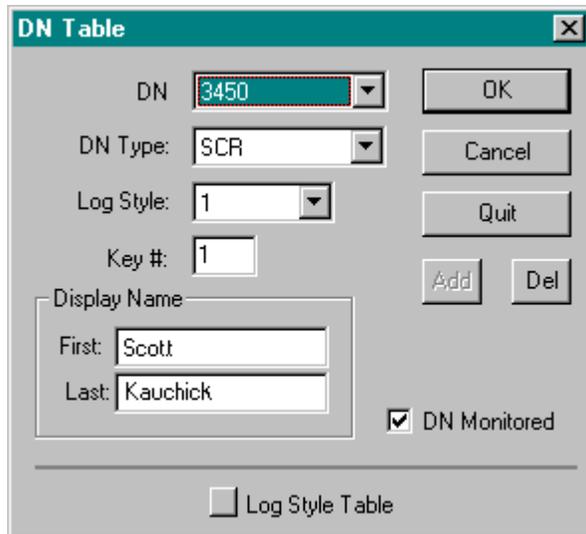
Note: Adding, modifying, or deleting a DN on this dialog box changes only the information contained in the **Symposium TAPI Service Provider** database. This does not affect the switch or the set configuration.

Configuring the DN Table may consist of the following (detailed information is provided for each step):

1. Access the *DN Table* dialog box.
2. Add, change, or delete the DN database table information.
 - a. Adding a DN to the DN database table
 - b. Changing the information associated with a DN on the DN database table
 - c. Deleting a DN from the DN database table
3. Close the *Phone Styles* dialog box.

To Access the *DN Table* dialog box:

1. From the *Host Table* dialog box, click on the **TN Table** button.
The *TN Table* dialog box is displayed.
2. Click on the **DN Table** button located on the bottom of the *TN Table* dialog box.
3. Select the desired TN. The selected TN is displayed in the *Line Name* field on the *TN Table* dialog box.
The *DN Table* dialog box displays the information associated with the TN selected on the *TN Table* dialog box.



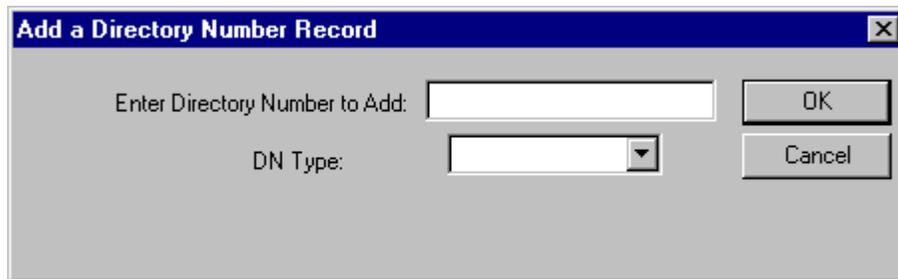
Click on the down arrow located next to the *DN*, *DN Type*, or *Log Style* fields to display the available information in that field.

The *DN Table* dialog box fields, check boxes, and buttons:

DN Data fields	Description
DN Number	Indexing will start a zero, this is used by Symposium TAPI Service Provider.
DN Type	Displays the list of DN types that include SCR (single call ring), SCN (single call no ring), MCR (multiple call ring), and MCN (multiple call no ring).
DN Log Style	The Number of the Log Style that is defined for the application (default = 1).
Key #	DN key number on the phone
Display Name	Displays the name that appears on the phone's display.
DN Check boxes	Description
Interactive Voice Response	This box is active when your version of Symposium TAPI Service Provider includes the IVR option.
DN Monitored	Selects (with check mark) or deselects (blank) the displayed DN for monitoring. The <i>Host Table</i> dialog box provides a button for selecting this option for all DNs.
DN buttons	Description
Add	Displays a dialog box to enter information for adding a new DN in the <i>DN</i> field.
Del	Deletes the displayed Line Name.
Log Style Table	Displays the <i>Log Styles</i> dialog box with the data items that will be logged and transferred to the <i>Logger</i> window when the <i>Logger</i> application is running.

To Add a DN to the Database:

1. Click on the **Add** button.
The *Add a Directory Number Record* dialog box is displayed.



2. Enter *the Directory Number* and *DN Type* in the fields provided.
3. Click on the **OK** button to close the *Add a Directory Number Record* dialog box.
The new number displays in the *DN Number* field
4. Select the Log style.
5. Add or modify the other fields as required.

To Change the Information Associated with a DN:

1. Click on the down arrow next to the *DN* field to display the list DNs.
2. Click on the DN you wish to edit.
The DN displays in the *DN* field.
3. Make changes as necessary.

To Delete a DN from the DN Database table:

1. Click on the down arrow next to the *DN* field to display the list of DNs.
2. Click on the DN you wish to delete.
The DN displays in the *DN* field.
3. Click on the **Del** button to delete the displayed DN from the DN Table in the database.

To Close the *DN Table* dialog box:

Click the **OK** button to close the dialog box and save the changes.

Or

Click on the **Cancel** button to close the dialog box without saving the changes.

The *TN Table* dialog box is displayed. Closing the *TN Table* dialog box displays the *Host Table* dialog box.

To Quit the Configurator application.

1. Click on the **Quit** button to exit the Configurator application.
The *MIS Configuration* dialog box is displayed.
2. Click on the **OK** button to close the *MIS Configuration* dialog box and exit the Configurator application.

Configuring the Control DN

The Control DN database information is used for host enhanced routing applications. The *CDN* dialog box allows you to add or modify the Control DN information contained in the database.

In addition, you have the option to select the style that this information is displayed in the Logger application for troubleshooting purposes. Two default styles (0=no data items display, 1=all data items display) are provided. Refer to the “Configuring the Log Style Table” section for information on creating additional styles.

Configuring the Control DN Table may consist of the following:

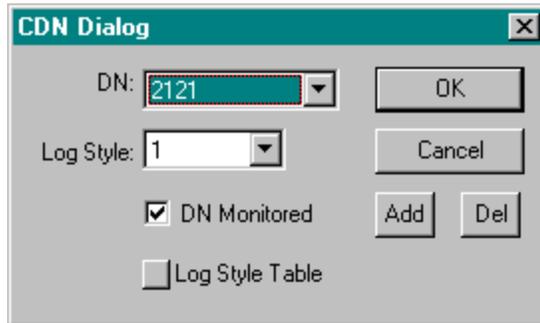
1. Access the *CDN* dialog box.
2. Add a new Control DN or modify an existing Control DN.
3. Close the *CDN* dialog box.

Note: Adding, modifying, or deleting a Control DN on this dialog box changes only the information contained in the Symposium TAPI Service Provider database. This does not affect the switch configuration.

To Access the *CDN* dialog box:

From the *Database Configuration* dialog box (refer to the “Accessing the Database Configuration Dialog Box” section):

Click on the **Control DN** button.
The *CDN* dialog box is displayed.

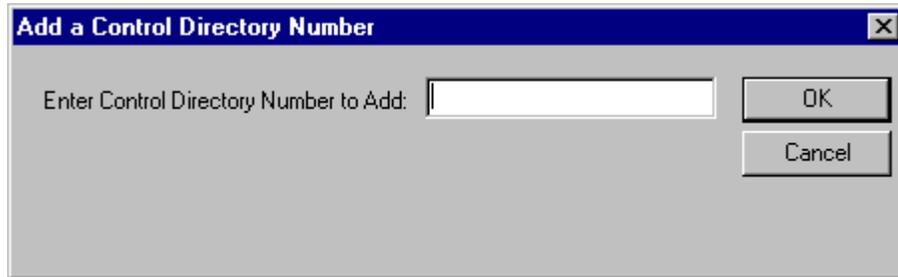


The *CDN* dialog box fields, check boxes, and buttons:

CDN Data fields	Description
DN	Indexing will start a zero, this is used by Symposium TAPI Service Provider.
Log Style Table	The Number of the Log Style that is defined for the application (default = 1).
CDN Check boxes	Description
DN Monitor	Selects (with check mark) or deselects (blank) the displayed DN for monitoring. The <i>Host Table</i> dialog box provides a button for selecting this option for all DNs.
CDN buttons	Description
Add	Displays a dialog box to enter information for adding a new Control DN in the <i>DN</i> field.
Del	Deletes the displayed Line Name.
Log Style Table	Displays the <i>Log Styles</i> dialog box with the data items that will be logged and transferred to the <i>Logger</i> window when the <i>Logger</i> application is running.

To Add a New Control DN:

1. Click on the **Add** button.
The *Add a Control Directory Number* dialog box is displayed.



2. Enter the new *Control Directory Number*.
3. Click on the **OK** button.
The *CDN* dialog box is displayed.
4. Select the Log Style.
 - a. Click on the down arrow located in the Log Style field to display the available log styles.
 - b. Click on the desired style.
Clicking on the **Log Style Table** button displays the selected data items associated with the selected Log Style. Refer to the “Configuring the Log Styles Table” for information on creating additional log styles.
5. Click in the **DN Monitor** check box to select or deselect the option to have this DN monitored.
A check mark in the check box means the option to monitor the DN is selected.

To Modify a Control DN:

1. Click on the down arrow located next to the *DN* field to display the available DNs.
2. Click on the desired DN to select it. The selected DN displays in the *DN* field.
3. Make changes as required.

To Delete the Control DN:

1. Click on the down arrow located next to the *DN* field to display the available DNs.
2. Click on the desired DN to select it. The selected DN displays in the *DN* field.
3. Click on the **Del** button.
The selected Control DN is deleted.

To Close the *CDN* dialog box:

1. Click the **OK** button to close the dialog box and save the changes.
Or
Click on the **Cancel** button to close the dialog box without saving the changes.
2. Click on the **OK** button to close the *Database Configuration* dialog box.
The *MIS Configuration* dialog box is displayed.
3. Click on the **OK** button to exit the Configurator application.
Or
Click on a button to view another database table information.

Configuring the Log Styles Table

The information on the Log Styles table is used by the Logger troubleshooting application. Each data item has a logging style assigned to it. There are two default log styles that cannot be modified or removed, log style “0” (for logging no items) and log style “1” (for logging all items). For troubleshooting purposes, you may be requested by technical support personnel to create additional log styles to trace specific data items. The *Log Styles* dialog box allows you to create these additional styles. Log styles are always numbered consecutively. For example, the first log style you create is number “2” (number 0 and number 1 already exist). If you create an additional log style, it is numbered “3.”

When deleting log styles, it is also important to remember that the numbers are always numbered consecutively. For example, if you decide to delete the logging styles as defined on log style “2” but keep the logging styles as defined on log style “3,” deleting “2” moves the logging styles on “3” to the “2” position. In addition, this action changes any dialog boxes that contained the “3” logging style to “2.”

Accessing the Logger application and running a program displays the logging information in the format selected on the configuration dialog boxes. From the *Logger* window, this information is saved to the overflow file. Refer to the “The Logger Troubleshooting Tool” section in Chapter 6 for detailed information on the Logger application.

Configuring the Log Styles Table may consist of the following:

1. Access the *Log Styles* dialog box.
2. Create a new Log Style or modify an existing (user-created) log style.
3. Close the *Log Styles* dialog box.

Note: You can view the *Log Styles* dialog box from many other dialog boxes. However, the add and delete options are available only when you access the *Log Styles* dialog box by selecting the **Log Styles** button on the *Meridian 1 TAPI Server Configuration* dialog box.

To Access the *Log Styles* Dialog Box:

From the *Meridian 1 TAPI Server Configuration* dialog box (refer to the “Accessing the *Database Configuration* Dialog Box” section):

Click on the **Log Styles** button.

The *Log Styles* dialog box is displayed.



Clicking on the **Log Styles** button located on the *Provider Table, Host Table, Treatments Table, TN Table, DN Table*, and the *CDN* dialog boxes displays the *Log Styles* dialog box. Clicking on the **LineStyle Log Style** and the **Address Log Style** buttons on the *Phone Styles* dialog box also displays the *Log Styles* dialog box.

Click on the down arrow located next to the *Log Style Number* field to display the available information in that field.

The Log Styles dialog box fields and buttons:

Log Style Data fields	Description
LogStyleNumber	Integer, 0 and 1 are defaults that cannot be edited or removed.
Config	TBD
Init	Check box to allow the logging of service provider initialization.
Shutdown	Check box to allow the logging of service provider shutdown.
TSPI Entry	Check box to allow the logging of entry points into the service provider.
TSPI Params	Check box to allow the logging of parameters passed to the service provider.
TSPI Msg	Check box to allow the logging of messages sent to the service provider.
Thread Msg	Check box to allow service provider thread messages to be logged.
CallInfo	Check box to allow call information to be logged.
CallStatus	Check box to allow call status information to be logged.
CallParams	Check box to allow call parameters to be logged.
Construct	Check box to allow the logging of the object list construction.
Destruct	Check this box to allow logging of the object list destruction.
ML Send Entry	Check box to allow the logging of entry points to the Meridian 1 message formatter.
MLSendParams	Check box to allow the logging of parameters to the Meridian 1 message formatter.
ML Recv Entry	Check box to allow logging of the entry points to the Meridian 1 message parser.
ML Recv Params	Check box to allow logging of the parameters to the Meridian 1 message parser.
ML Msg	Check box to allow raw messages to and from the Meridian 1 switch.
Agent Caps	Check box to allow agent caps to be log.
Agent Status	Check box to allow agent status information to be logged.
Dev Caps	Check box to allow device caps to be logged.
Dev Status	Check box to allow device status information to be logged.
Address Caps	Check box to allow address caps to be logged.
Address Status	Check box to allow address status to be logged.
Log Style Data buttons	Description
Add	Enters a new Log Style number in Log Style Number field and allows for selecting the data items to be logged.
Delete	Deletes a user-created Log Style number. (Log Styles 0 and 1 cannot be deleted)

To Create Additional Log Styles:

1. Click on the **Add** button.
The next consecutive number is displayed in the *Log Style Number* field.
2. Click on the **OK** button.
The *Database Configuration* dialog box is displayed.
3. Click on the **Log Styles** button.
The *Log Styles* dialog box is displayed.
4. Click in the check boxes next to the data items you wish to have the Logger application log and display.
5. Click on the **OK** button. The *Log Styles* dialog box closes and the changes are saved. The new Log Style is now an option on the configuration dialog boxes.

To Edit an Existing Log Styles (Styles 0 and 1 cannot be edited or deleted):

1. Click on the down arrow next to the *Log Style Number* field to display the list of existing Log Styles.
2. Click on the Log Style you wish to edit.
3. Click in the check boxes next to the data items you wish select or deselect. A check mark means the data item will be logged.
4. Click on the **OK** button. The *Log Styles* dialog box closes and the changes are saved.

To Delete an Existing Log Style (Styles 0 and 1 cannot be edited or deleted):

1. Click on the down arrow next to the *Log Style Number* field to display the list of existing Log Styles.
2. Click on the Log Style you wish to delete.
3. Click on the **Delete** button.
The user-created Log Style is deleted.
4. Click on the **OK** button. The *Log Styles* dialog box closes and the changes are saved.

To Close the *Log Styles* dialog box:

1. Click the **OK** button to close the dialog box and save the changes.
Or
Click on the **Cancel** button to close the dialog box without saving the changes.
The *Host Table* dialog box is displayed.
2. Click on the **OK** button to close the *Host Table* dialog box and save the changes.
Or
Click on the **Cancel** button to close the *Host Table* dialog box and cancel the changes.
3. Click on the **OK** button to close the *Database Configuration* dialog box.
The *MIS Configuration* dialog box is displayed.
4. Click on the **OK** button to exit the Configurator application.
Or
Click on a button to view another database table information.

Configuring the License

The FLEXlm License Manager allows you to configure the License Manager Server and the License file that you received when you purchased the Meridian 1 TAPI Service Provider. The license file is necessary for the Meridian 1 TAPI Service Provider to work.

Configuring the FLEXlm License Manager may consist of the following:

1. Installing the License file.
2. Accessing the *FLEXlm License Manager* window.
3. Configuring the License Manager.
4. Configuring the License file.
5. Starting the License Manager Server.
6. Viewing additional License Manager information.

Accessing the FLEXlm License Manager opens the *FLEXlm License Manager* main window. The *FLEXlm License Manager* main window provides tab pages that allow you to configure the License Manager Server and the License file and to view certain information regarding the Meridian 1 TAPI Service Provider license that you purchased.

Installing the License File

The License file (License.dat) is not automatically installed with the Meridian 1 TAPI Service Provider software. This file must be loaded on the TAPI Server. We recommend that you place the file in the Winnt\System32 folder. In addition, we recommend that you make a back-up copy of the license file before configuring it.

To Install the License File:

1. Make a back-up copy of the License.dat file.
2. Copy the file to the default directory: c:\Winnt\System32.

Accessing the FLEXlm License Manager Window

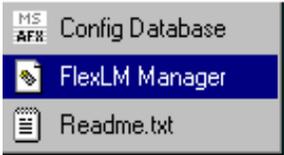
The FLEXlm License Manager is accessed from the Windows Start/Programs/Nortel M1TAPI program.

To Access the FLEXlm License Manager:

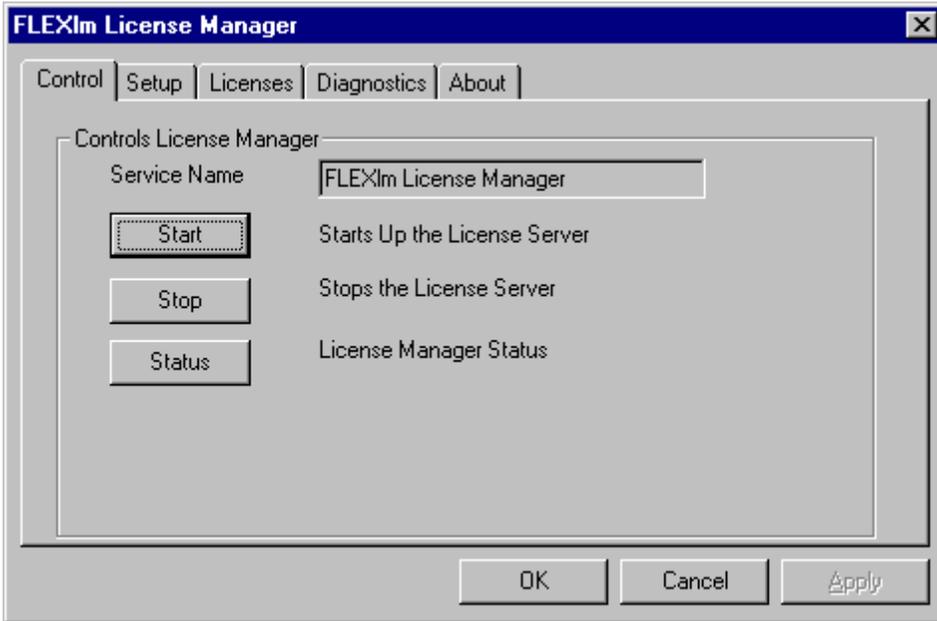
1. Select **NORTELM1TAPI** program from the Windows Start/Programs to display the options.



2. Click on the **FlexLM Manager** option.



The *FLEXlm License Manager* main window opens.



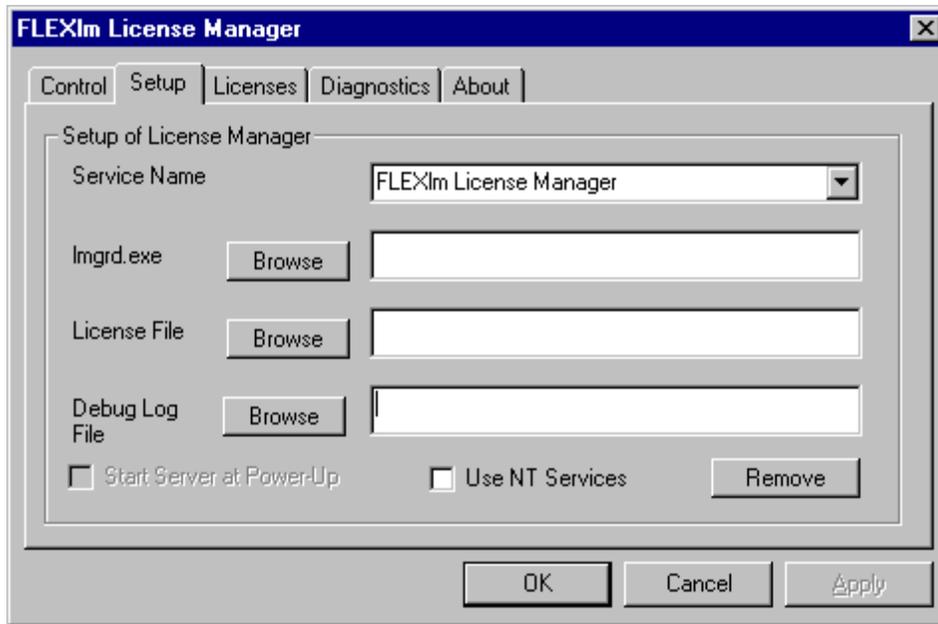
FLEXlm License Manager tab pages	Description
Control	Allows you to view the status of the License Manager and to start and to stop the License Manager.
Setup	Allows you to configure the License Manager.
Licenses	Allows you to view the License file and to modify it where necessary.
Diagnostics	Provides information regarding the License Manager.
About	Provides information regarding the version of FLEXlm License Manager installed on your machine.

Configuring the License Manager

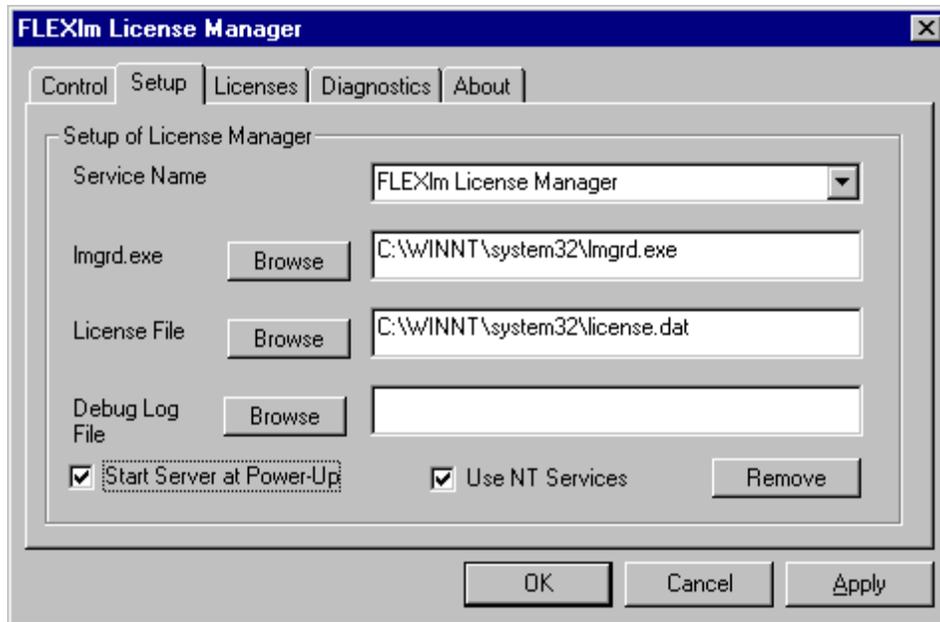
The License Manager is configured on the *Setup* tab page located on the *FLEXlm License Manager* window.

To Configure the License Manager:

1. Access the FLEXlm License Manager window. Refer to the “Accessing the FLEXlm License Manager Window” section.
2. Click on the **Setup** tab to display the Setup fields.



3. Click on the **Browse** button to locate the Imgrd.exe file. The default is the c:\Winnt\System32 directory.
4. Click on the **Browse** button to locate the License.dat file. This file is located in the directory where you copied it. The recommended location is the c:\Winnt\System32 directory.
5. Click on the check box to select to **Use NT Services** and to **Start the Server at Power-up**. The License Manager service must be started before the Meridian 1 TAPI Service Provider will start.

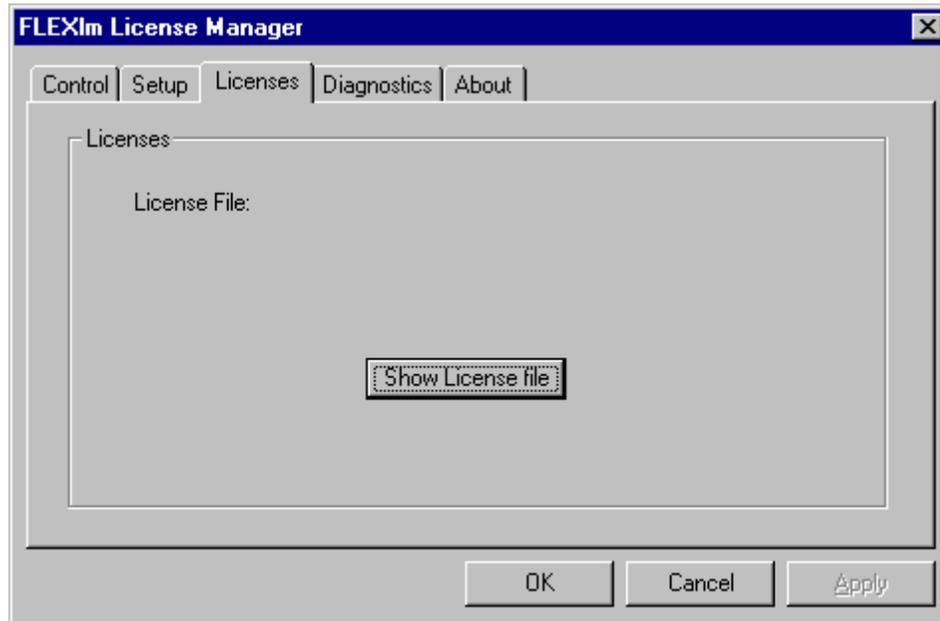


Note: Clicking on the **Remove** button will remove the License Manager from the NT Services. Unless the License Manager is started, the Meridian 1 TAPI Service Provider will not work. We recommend that you **do not** remove the License Manager from the NT Services.

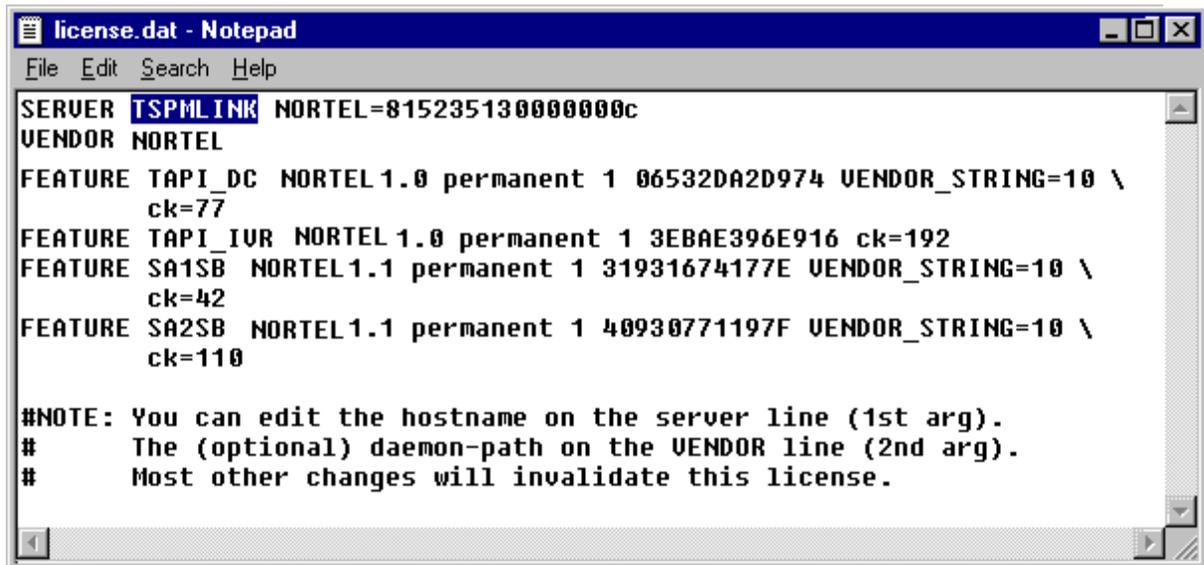
Configuring the License File

To Configure the License File:

1. Access the FLEXIm License Manager window. Refer to the “Accessing the FLEXIm License Manager Window” section.
2. Click on the **Licenses** tab to display the *Licenses* tab page.



3. Click on the **Show License file** button to display the License.dat file.

The image shows a screenshot of a Notepad window titled 'license.dat - Notepad'. The window has a menu bar with 'File', 'Edit', 'Search', and 'Help'. The main text area contains the following content:

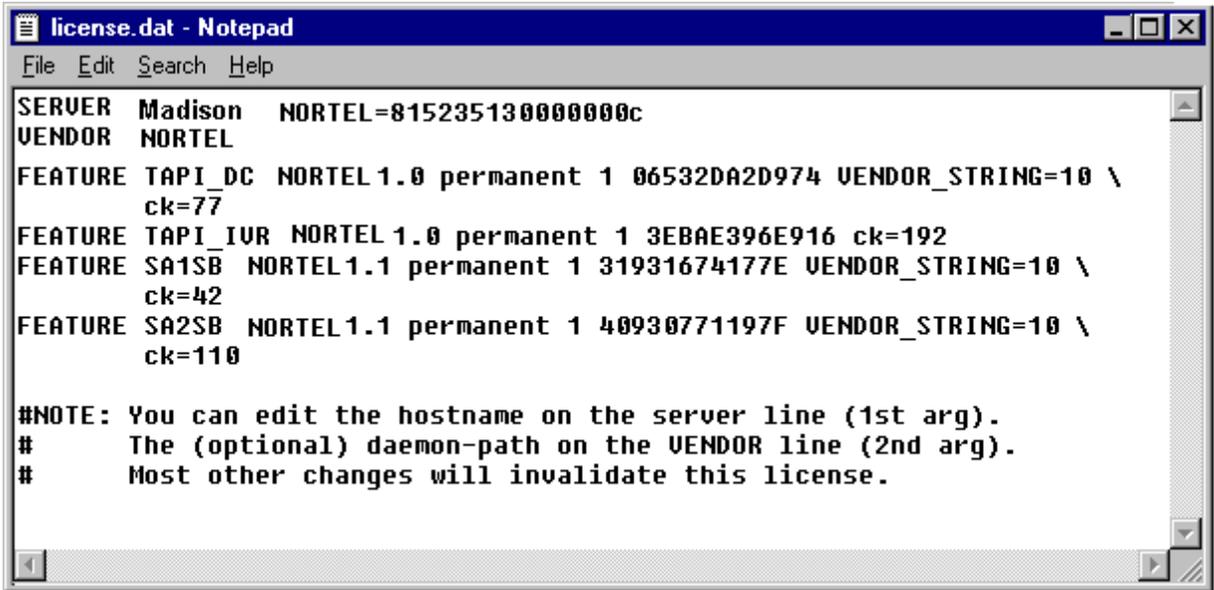
```
SERVER TSPMLINK NORTEL=815235130000000c
VENDOR NORTEL
FEATURE TAPI_DC NORTEL 1.0 permanent 1 06532DA2D974 VENDOR_STRING=10 \
ck=77
FEATURE TAPI_IUR NORTEL 1.0 permanent 1 3EBAE396E916 ck=192
FEATURE SA1SB NORTEL 1.1 permanent 1 31931674177E VENDOR_STRING=10 \
ck=42
FEATURE SA2SB NORTEL 1.1 permanent 1 40930771197F VENDOR_STRING=10 \
ck=110

#NOTE: You can edit the hostname on the server line (1st arg).
# The (optional) daemon-path on the VENDOR line (2nd arg).
# Most other changes will invalidate this license.
```

Note: The example of the License provided is for demonstration purposes only. Your license information will vary depending upon your purchase.

4. On the **Server** line, edit *TSPMLINK* to the name of your Host computer. This must be exact. If you do not know your Host computer name, refer to the “Viewing Additional License Manager Information” section.

Note: Edit only the field that you are instructed to edit. Editing other fields will corrupt the License.dat file and the Meridian 1 TAPI Service Provider will not work.



```
license.dat - Notepad
File Edit Search Help
SERVER Madison NORTEL=815235130000000c
VENDOR NORTEL
FEATURE TAPI_DC NORTEL 1.0 permanent 1 06532DA2D974 VENDOR_STRING=10 \
ck=77
FEATURE TAPI_IUR NORTEL 1.0 permanent 1 3EBAE396E916 ck=192
FEATURE SA1SB NORTEL 1.1 permanent 1 31931674177E VENDOR_STRING=10 \
ck=42
FEATURE SA2SB NORTEL 1.1 permanent 1 40930771197F VENDOR_STRING=10 \
ck=110

#NOTE: You can edit the hostname on the server line (1st arg).
# The (optional) daemon-path on the VENDOR line (2nd arg).
# Most other changes will invalidate this license.
```

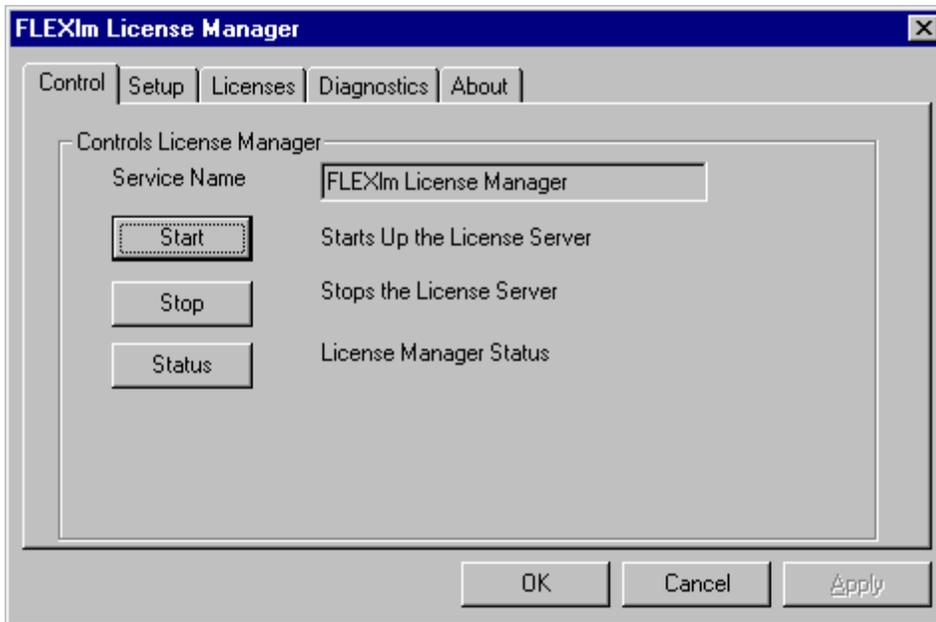
5. Save the changes by selecting the **Save** option on the **File** menu.
6. Close the file by selecting the **Close** option on the **File** menu.

Starting the License Manager Server

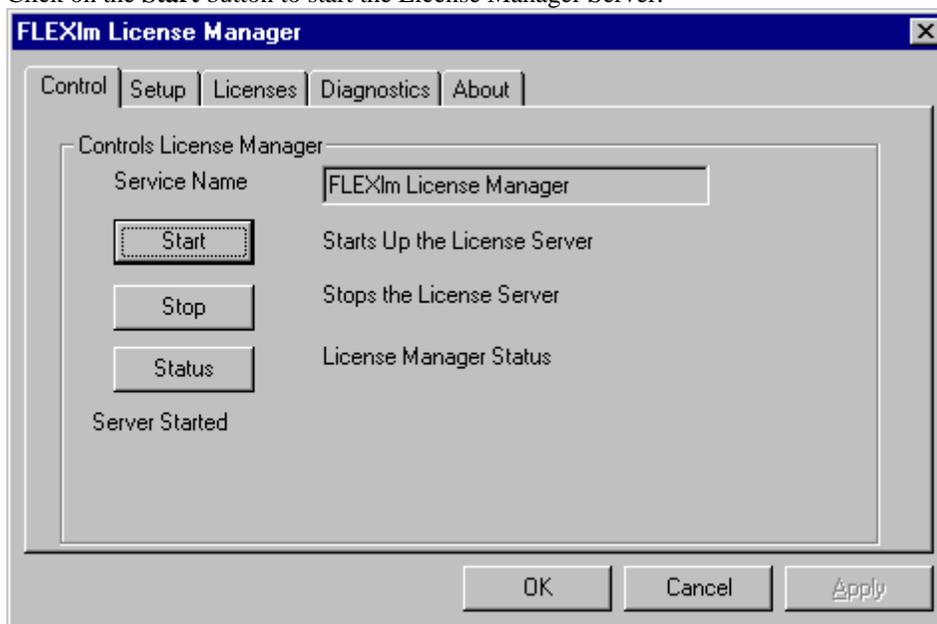
If you selected the Start Server at Power-up option on the Setup tab page, restarting your computer automatically starts the License Manager. However, after configuring the License Manager Server and the License.dat file, you have the option to start the License Manager Server without restarting your computer.

To Start the License Manager Server.

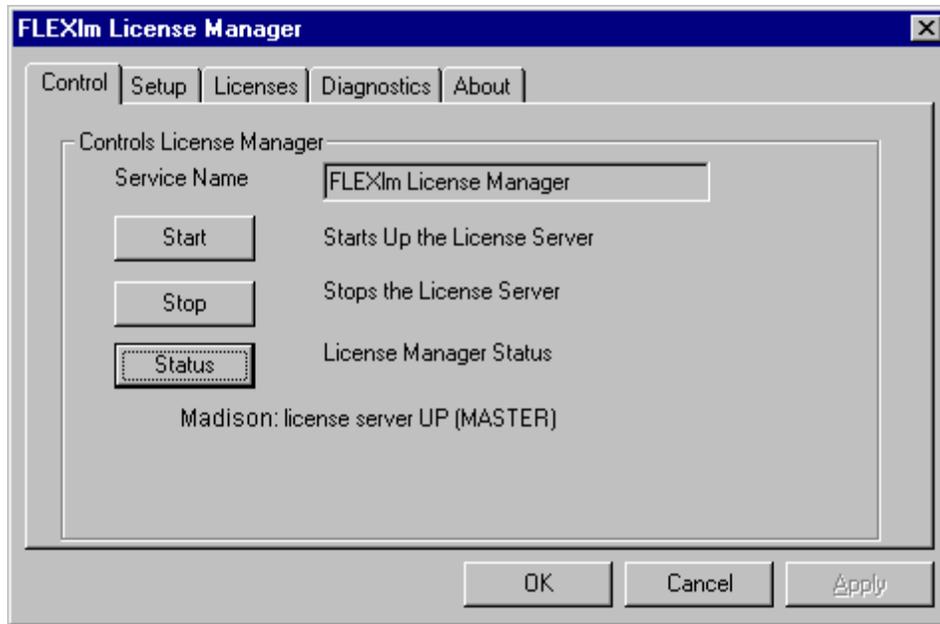
1. Click on the **Control** tab to display the *Control* tab page.



2. Click on the **Start** button to start the License Manager Server.



3. Click on the **Status** button to view the status of the License Manager Server.
The License Manager Server status is displayed at the bottom of the screen.



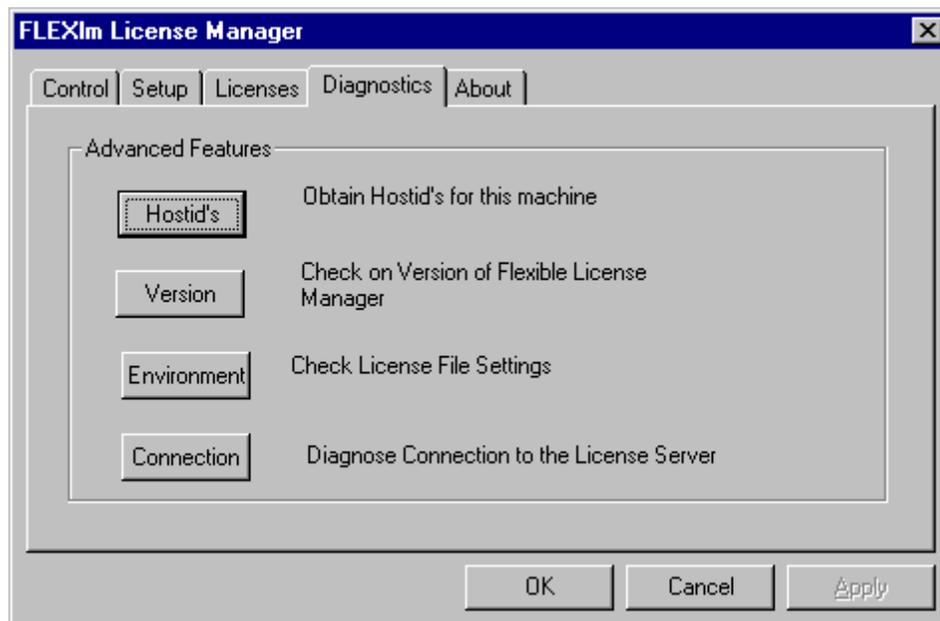
Note: The server name in this example is for demonstration purposes only. The name that you see depends upon your host computer's name.

Viewing Additional License Manager Information

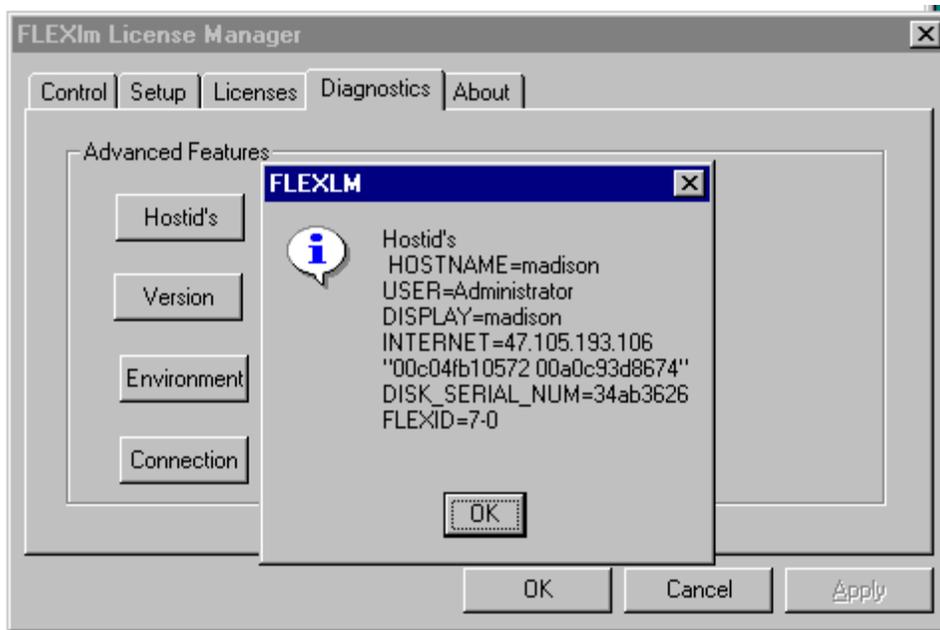
The **Diagnostics** and **About** tabs provide access to additional information about the License Manager.

To View Additional Information about the License Manager:

1. Click on the **Diagnostics** tab to display the *Diagnostics* tab page.

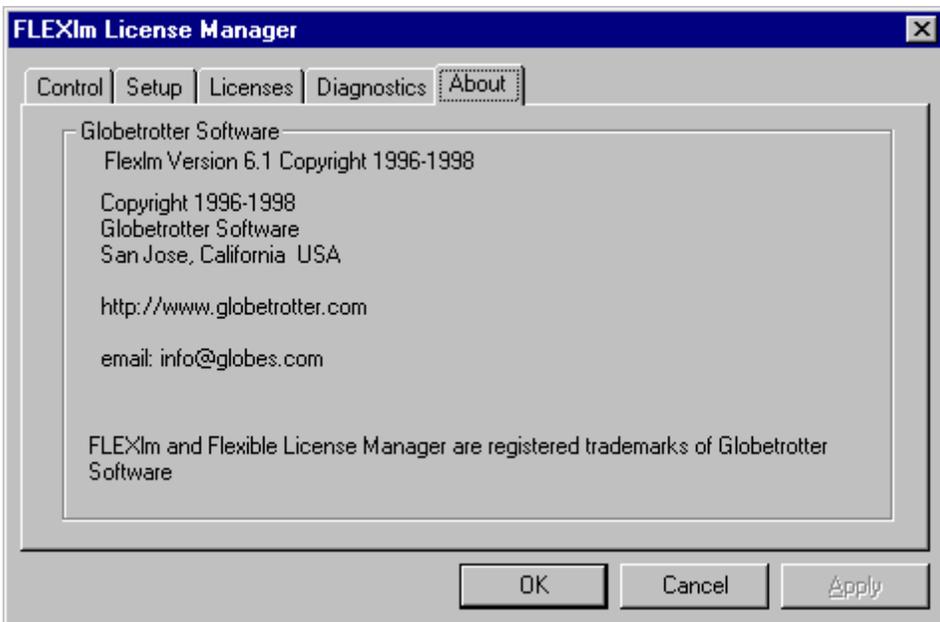


2. Click on the **Hostid's** button to display the Host computer name and other information about the Host.



Note: The information displayed is for demonstration purposes only. The information you see depends upon your specific host machine.

3. Click on the **OK** button to close the information box.
4. Click on the **Version**, **Environment**, or **Connection** button to view the information provided.
5. Click on the **About** tab to display information regarding the FLEXlm Version you have installed.



6. Click on the **OK** button to close the *FLEXlm License Manager* window.

Configuring the MLINKSP.INI File for Networking

When networking across the WAN (not applicable when using UDP Broadcast messages), you must configure the TCP/IP address of the servers by creating or manually editing the MLINKSP.INI file. The file is created automatically by the TAPI Service Provider when you initialize TAPI and there are other TAPI Servers running the same software. The file resides in the WinNT directory.

Note: When there are more than one TAPI Service Providers connected to the Meridian Link, only one can monitor and control the different telephones or CDNs.

Scenario:

TAPI Server A is installed. There is no .INI file.

When A is being initialized the TAPI Service Provider sends a message on the network to determine if there are any other TAPI Servers. If there are they will respond (TAPI Server B). The IP Address will be placed into the INI file. In the case of a WAN, some routers will not allow a “broadcast” packet to pass through. If you want to talk to B, you can place the IP address in the .INI file manually as long as the structure is as defined below:

```
[COUNT]
Count=

[IPADDRESS]
IP1=
IP2=
```

Note: Count = the number of TCP/IP addresses.

For example,

```
[COUNT]
Count=2

[IPADDRESS]
IP1=47.105.207.136
IP2=47.233.333.565
```

In the above example of an MLINKSP.INI file, there are two IP addresses. Therefore the count is two. To add an additional IP address, change the Count to 3 and add the TCP/IP address.

For example,

```
IP3=12.121.122.344
```

To delete a TCP/IP address, delete the last one first.

Timer

For Networking, there is a timer that sets how long a TAPI Server will hold IVR or Call Data before releasing it from memory. This is in seconds.

For Example,

```
[COUNT]
Count=2

[IPADDRESS]
IP1=47.105.207.136
IP2=47.233.333.565
[TIMER-COUNT]
LifeSpan=1800
```


Chapter 4 Microsoft TAPI 2.1 and TCMAPP

Note: The information contained in this chapter has been compiled by Nortel for informational purposes only. This information is not a procedure, but a supplement to the Microsoft TAPI Readme.txt file that is provided by Microsoft. Be sure to read the Microsoft TAPI Readme.txt file and install according to those instructions.

Microsoft TAPI 2.1 Overview

The Microsoft Telephony Applications Programming Interface (TAPI) Release 1.4 (first party call control), currently included with Windows 95, allows application programs to control telephony functions such as establishing, answering, and terminating calls as well as controlling other functions such as hold, transfer, and conference. Microsoft TAPI 2.0, currently included with Windows NT Server, Workstation 4.0, and Windows 98 introduces sophisticated server based third-party call control functions for monitoring station set status, supporting predictive dialing applications, ACD queue events, call routing, and network security. It fully addresses client-server needs for call monitoring and control with built-in TAPI remote service provider from Microsoft.

Microsoft TAPI 2.1 (Microsoft's newest version of TAPI) provides the following features:

- A full 32-bit architecture along with backward compatibility with 16-bit TAPI applications
- Call center support
- Allows Windows NT to be a telephony client or server
- Allows Windows 95 to be a telephony client
- Optional Client-Server support that is LAN independent, for example, TCP / IP, SPX / IPX, NetBEUI, as well as others

Upgrading Microsoft TAPI 2.1

On Windows NT server and client machines (NT 4.0), Microsoft TAPI needs to be upgraded from TAPI 2.0 to TAPI 2.1. On Windows 95 systems, you must upgrade from Microsoft TAPI 1.4 to TAPI 2.1. This upgrade allows the client and the server to communicate. Microsoft TAPI 2.1 is available via Microsoft's Web page.

Note: Upgrading to Microsoft TAPI 2.1 is not necessary for the Windows NT Server and Windows NT clients if you have Microsoft Service Pack 4 installed. Although Service Pack 4 eliminates the need to upgrade Microsoft TAPI to 2.1, you must still set up the TCM application on the server and the client as described in the following sections. Service Pack 4 is required for the ACD Proxy Service to work.

Setting up the TCM Application

The Server and Client machines must have Service Pack 4 installed or upgrade the Microsoft TAPI to 2.1 and copy the TCMAPP.exe and TAPISRV.exe files to the Winnt\System32 directory before setting up the TCM application. Refer to the Microsoft TAPI Readme.txt file for information on upgrading to Microsoft TAPI 2.1. Also, refer to the “Upgrading Microsoft TAPI 2.1” section in this chapter for additional Nortel information.

The following steps provide an overview of setting up the TCM application. Detailed information is presented in the following sections.

1. Set up the server:
 - a. As a primary Domain controller
Or
As a standalone server in a Domain
 - b. Configure the TCMsetup on the server
Assign the lines to be used by the clients
Or
Delete a line from a user
2. Set up the client:

Ensure the client machines Service Pack 4 or have been upgraded to Microsoft TAPI 2.1 and the 2.1 fixes have been added to the Windows NT client machines.

Run the TCMsetup.exe for the client

Restart the client machine
3. Restart the server

Setting up the Server

The server can be configured as a primary Domain controller or as a standalone server in a Domain. After configuring the Server as a primary Domain controller or as a standalone server in a Domain, configure the TCMsetup, run the TCMsetup, and assign the lines to be used by the clients. Assigning the lines uses TCMAPP. The following sections provide detailed information for each of these tasks.

Setting up the Server as a Primary Domain Controller

Ensure the Windows NT server and Windows 95 client has the Microsoft TAPI 2.1 upgrade added and the 2.1 fixes have been added to the Window NT server before proceeding. Refer to the Microsoft TAPI Readme.txt file for information on upgrading to Microsoft TAPI 2.1. Also, refer to the “Upgrading Microsoft TAPI 2.1” section in this chapter for additional Nortel information.

A user is added to the server with domain user capabilities. This allows the TCM setup on the Server and on the Client. It also ensures that if there is a problem with any services, the Administrator of the server is able to access the computer. The ACDPROXY Service login and password must be set up to the same Login and password used by the Telephony Service. The User login and password are set in the User Manager.

To Setup the Server as a Primary Domain Controller:

1. Add a user to the server with domain user capabilities.
 - a. Click on the **Start** button, select **Programs**, select **Administrative Tools, User Manager**.

- b. Set up the user with a domain user rights and with a distinctive name, for example tapi_admin. You can set the user up with or without a password. This ensures that the Administrator of the server is able to access the computer if there is a problem with any of the services.

Once the tapi_admin user is setup, the Telephony Services starts automatically using this login. If this is not configured, the clients will not be able to start unless a TAPI application is started on the server. The service will start even if the server is not logged in.

2. Add the client machines to the Server Manager.
 - a. Click on the **Start** button, select **Programs**, select **Administrative Tools, Server Manager**.
 - b. Click on the **Configurator** and select **Add to Domain**.
Note: The clients you are adding to this server can not be logged in to two domains at one time.
 - c. Add the Client computer name, as it appears on the Client.
 - d. Select **WINNT Workstation** or **server** and click **ADD**.
 - e. Repeat step c and d for each client being added to the server.
3. Proceed with configuring the TCMsetup. Refer to the “Configuring the TCMsetup” section.

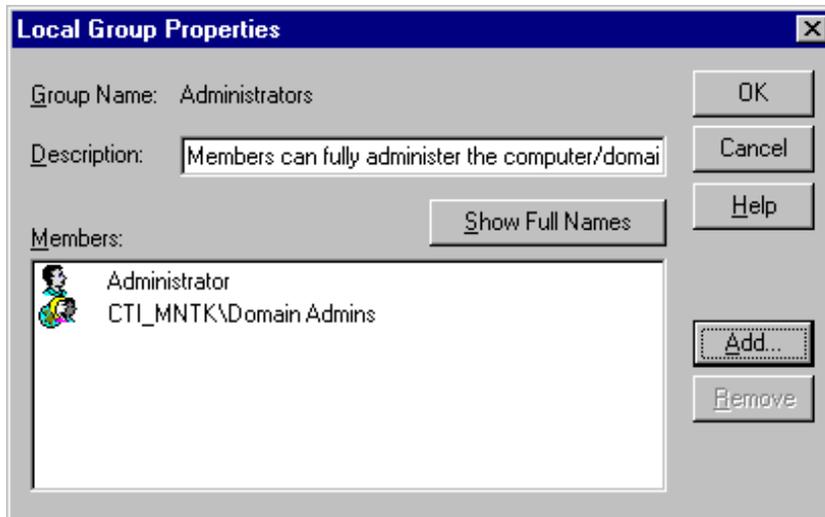
Setting up the Server as a Standalone Server in a Domain

This section covers the information necessary to set up a server as a standalone server in the Domain.

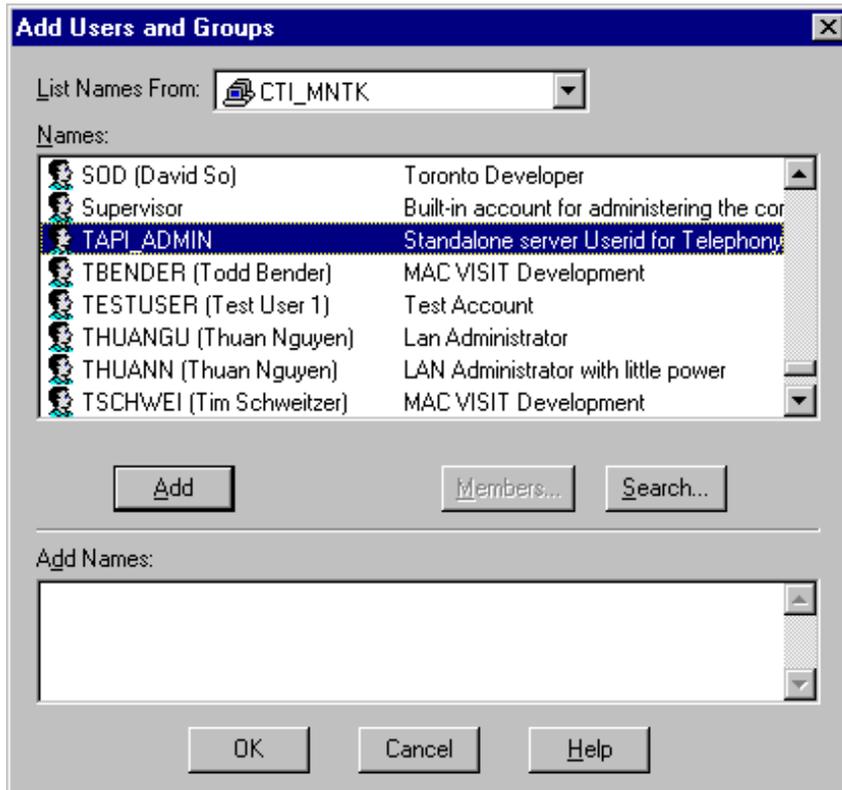
Note: You should always log into your local machine as Administrator. You should never log in to the Domain at your standalone server.

To Setup the Server as a Standalone Server in a Domain:

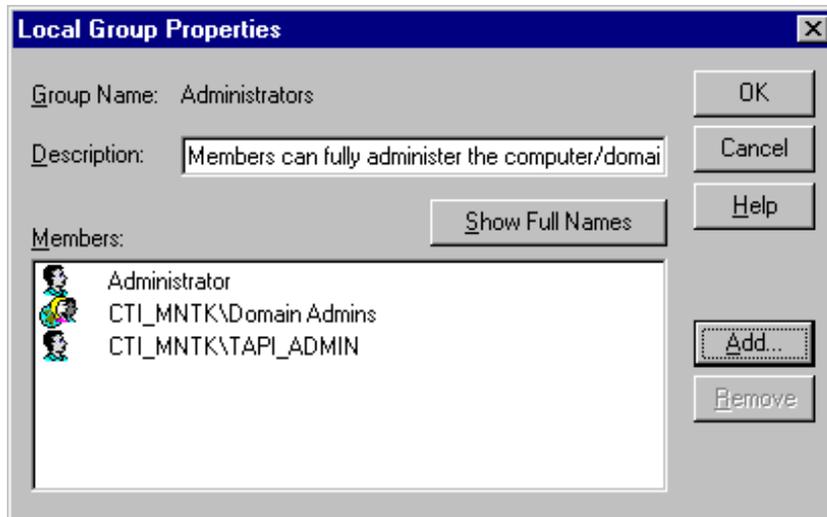
1. Request that your standalone server be added to the domain by your Network Administrator.
2. Request a user account on the Domain from your Network Administrator for your telephony service to start (TCMSETUP) on your local machine.
3. Have your Network Administrator verify that all TAPI users are already domain users or add any that are not present.
4. Complete the following steps to allow for setting up your TCMSETUP command:
 - a. Access the User Manager on your local machine, and double-click on **Administrators** at the bottom of the screen.
The *Local Group Properties* dialog box is displayed.
 - b. Position on your domain user account (CTI_MNTK\Domain Admins) and then click on **Add** button.



- c. Find and highlight your user account given by your Network Administrator for your Telephony Service (TCMSETUP). Click on the **Add** button to add this user.



- d. Your user account now displays on the *Local Group Properties* screen.



5. Proceed with configuring the TCMsetup. Refer to the “Configuring the TCMsetup” section.

Configuring the TCMsetup on the Server

The following list provides the steps in configuring the TCMsetup on the server. The following sections provide detailed information.

1. Launching the TCMsetup
2. Assigning the lines to be used by the client
3. Deleting a line from a user - if necessary

Note: If you setup the server as a standalone on a Domain, you should always log into your local machine as Administrator. You should never log in to the Domain at your standalone server.

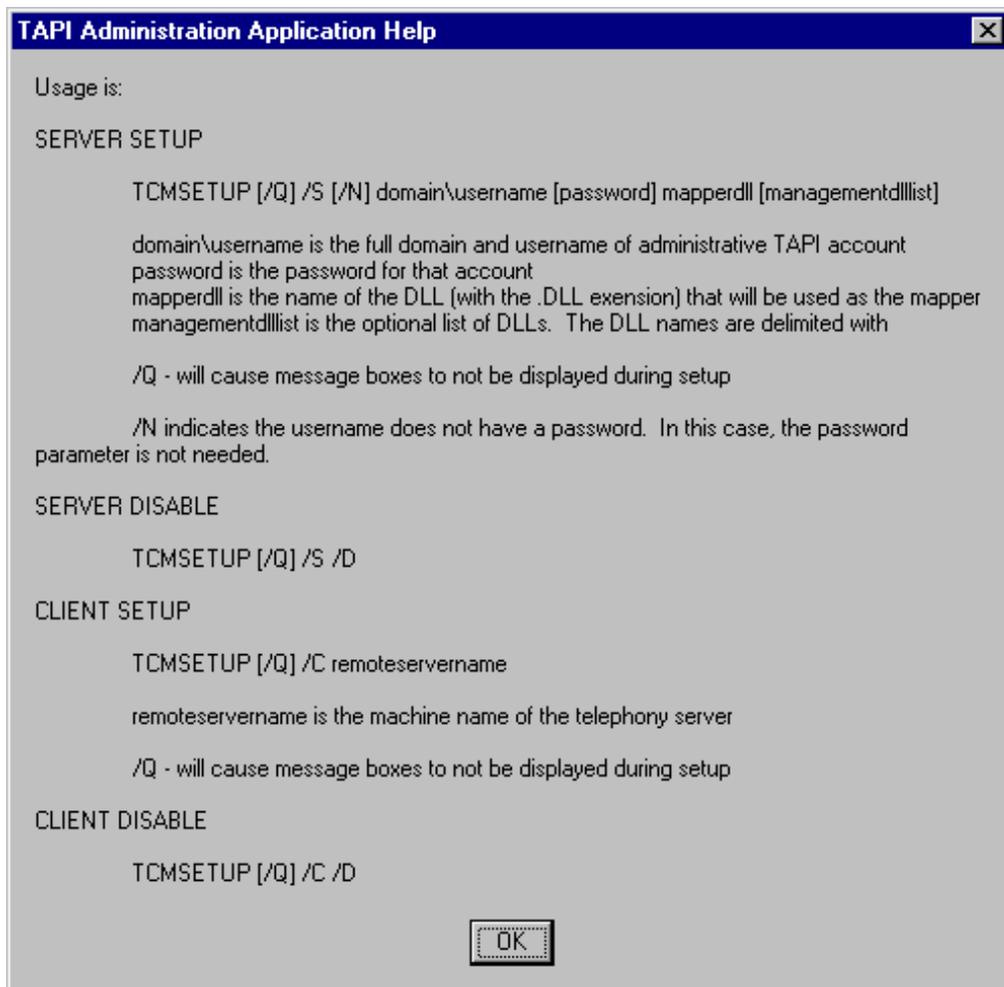
Launching the TCMSetup

To Launch the TCMsetup on the server:

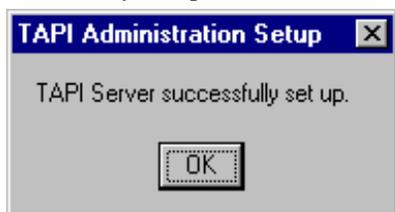
Enter the following using either the *RUN* box from the **Start** button or from a command prompt:

tcmsetup.exe /s domain \userid password (for example, *tcmsetup.exe /s Iowa\tapi_admin admin*)
or, if a password is not used: *tcmsetup.exe /s /n Iowa\tapi_admin*

Note: Definitions /s = Server, domain = the domain of the TAPI server, userid = the user setup with admin rights for use with the Telephony Service, password = the password used by that user.



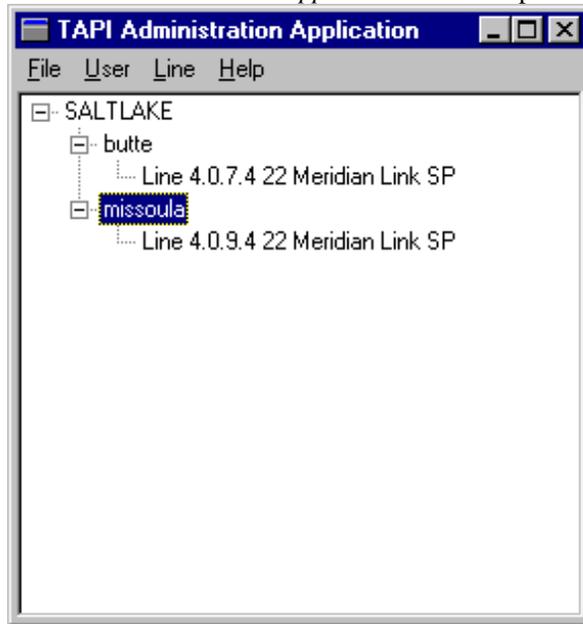
When TCMsetup is complete you will receive a confirmation box stating “**TAPI Service Provider** successfully set up”.



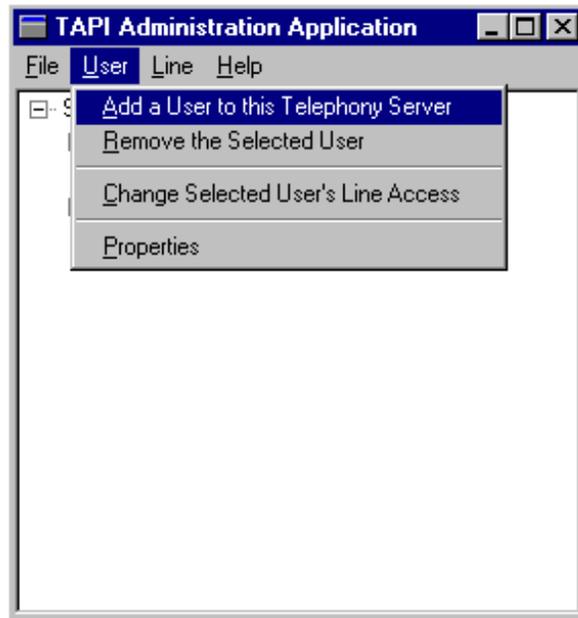
Assigning the Lines Used by the Clients

To Assign the Lines to be used by the Clients:

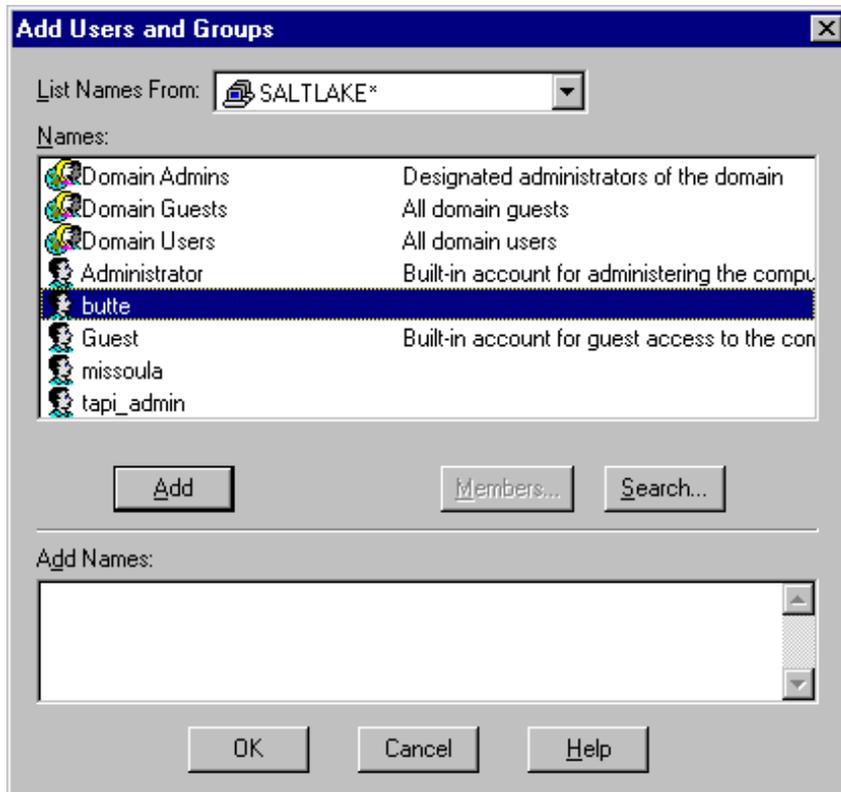
1. Run the TCMAPP.exe, located in the c:\Winnt\system32 directory. The *TAPI Administration Application* window opens.



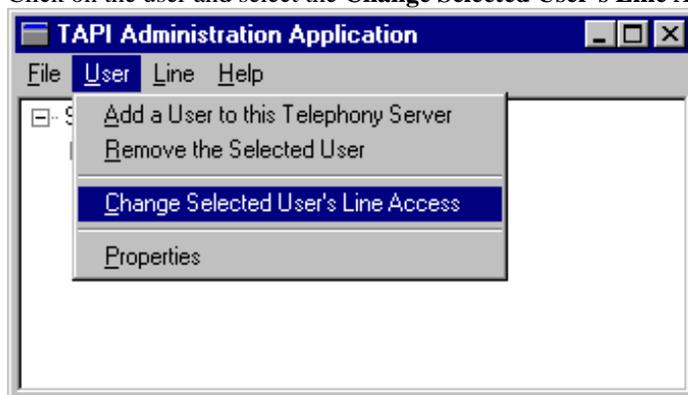
2. Click on **User** located on the menu bar and select the **Add a User to this Telephony Server** option.



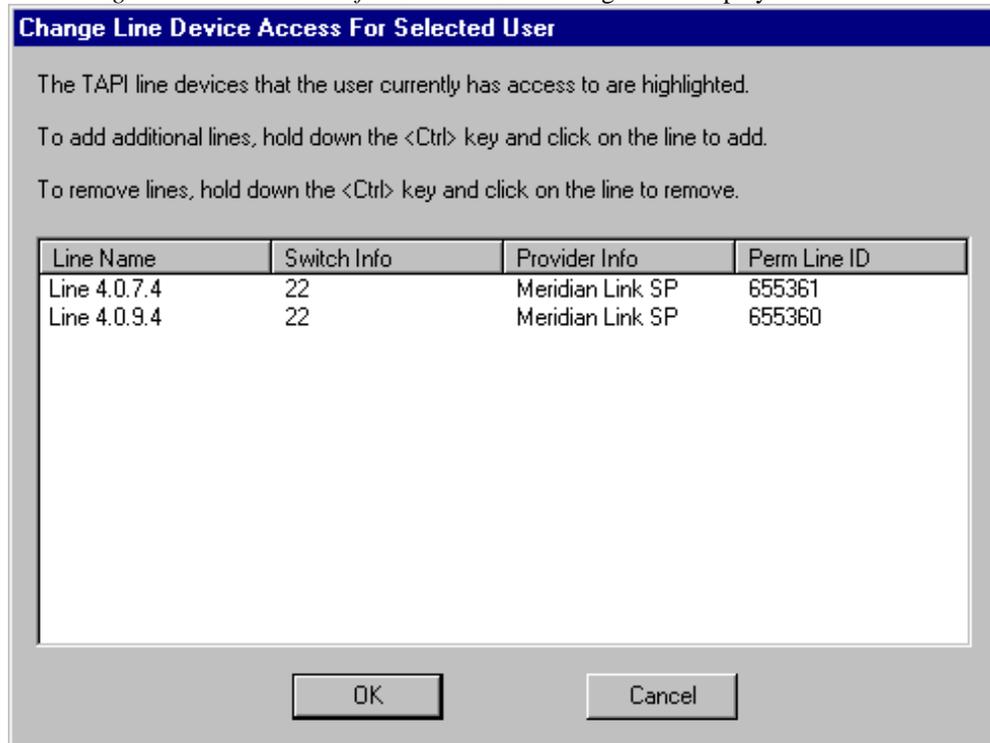
The *Add Users and Groups* dialog box is displayed.



3. Add the Users and the lines for each client.
 - a. Click on the user and select the **Change Selected User's Line Access**.



The *Change Line Device Access for Selected User* dialog box is displayed.



- b. Click on the line you wish to add to the client to highlight it and click on the **OK** button. The line you selected is displayed under the Client's name in the window.
- c. Repeat steps 1 and 2 until all users have been added and lines assigned to all users.
4. Exit the Application, be sure to click **Yes** to save the information.

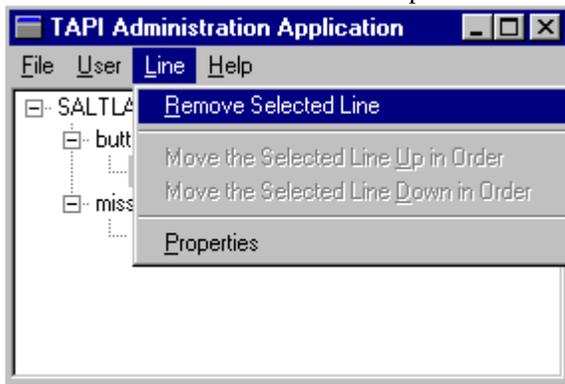
Note: The first time you run the TCMAPP program, you must select **ADD USER TO THIS Telephony Server** before seeing any of the above.

Deleting a Line from a User

To Delete a Line from a User

1. Run the TCMAPP.exe, located in the c:\Winnt\system32 directory.
2. Select the User.
3. Select the Line.
4. Click on **Line** located on the Menu bar.

5. Click on the **Remove Selected Line** option.



The line is removed.

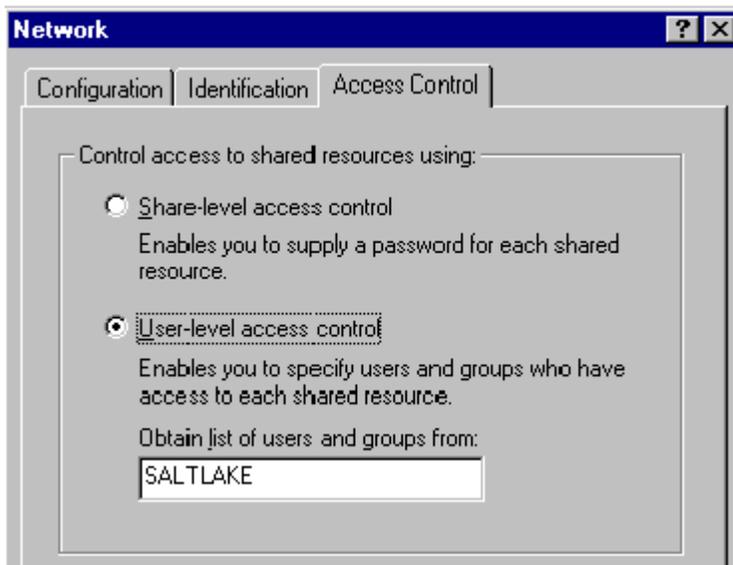
Setting Up the Client

Ensure the client machines have been upgraded to TAPI 2.1 and, if you have Windows NT client machines, the 2.1 fixes have been added to them.

Note: The client machines can only be logged in to one domain at any one time. Remove the machines from any prior domains before proceeding with setting up the client.

On Windows 95 client machines, you must ensure the File and Print Sharing are both selected.

1. From the Access control tab page, select the **User-level access control**.



In the Network setup you must make sure the **User Level Access** is set to the Domain Name. Please refer to the TAPI 2.1 Readme.txt file for any further information.

2. Click on the **OK** button.
The *File and Print Sharing* dialog box is displayed.



3. Select the **File and Print Sharing** options and click on the **OK** button.

To Set Up the Client:

1. Click on Start/Run and enter the following information:
tcmsetup.exe /c servername (for example, *tcmsetup.exe /c Desmoines*)

Be sure to use the server name and not the domain name.

The following message is displayed:



2. Reboot the server after you have finished setting up the Server and the Client.

Additional NT 4.0 Client Information

You may experience problems on the TAPI Server client machine running the Microsoft TAPI 2.1 if the **Enable Security** check box (on the *Advanced IP Addressing* panel) is selected. Check to ensure this option is not selected.

To View the Enable Security Check Box:

1. Right click on the **Network Neighborhood** icon and select the **Properties** option.
The *Network* panel opens.
2. Select the **Protocols** tab.
3. Select **TCP/IP Protocol** and click on the **Properties** button.
4. On the *Microsoft TCP/IP Properties* panel, click on the **Advanced** button.
The *Advanced IP Addressing* panel is displayed.
5. Ensure that the **Enable Security** check box is not selected.

Reinstalling the Older Version of Microsoft TAPI

If you wish to uninstall TAPI 2.1 and return to Microsoft's TAPI 1.4 , on a *Windows 95* client only, follow the following steps:

1. Locate the remtapi.inf file.
2. Right click on the correct file and select the **Install** option.

If you wish to uninstall TAPI 2.1 and return to Microsoft's TAPI 2.0 on *Window NT* only, follow the following steps:

1. Locate the remtapin.inf file.
2. Right click on the correct file and select the **Install** option.

Note: If you use the remtapi files, you may have to copy the Telephony.cpl file back into the Windows\system directory.

Chapter 5 Additional Tools

This chapter provides information on other applications that work with the Symposium TAPI Service Provider. These tools include the ACDProxy Service, Interactive Voice Response (IVR) units, Microsoft Outlook 97, and pcAnywhere.

ACDProxy Service

Nortel provides a separate application call ACDProxy Service. This application allows the agents to log in, log out, and go ready or not ready. The setup procedures for the ACDProxy Service are provided in the following sections.

Ensure the Microsoft TAPI 2.1 upgrade is installed and the TCM Application is setup before configuring the ACDProxy Service.

Note: Microsoft Service Pack 4 is required for the ACD Proxy Service to work. Ensure the TCM Application is setup before configuring the ACDProxy Service.

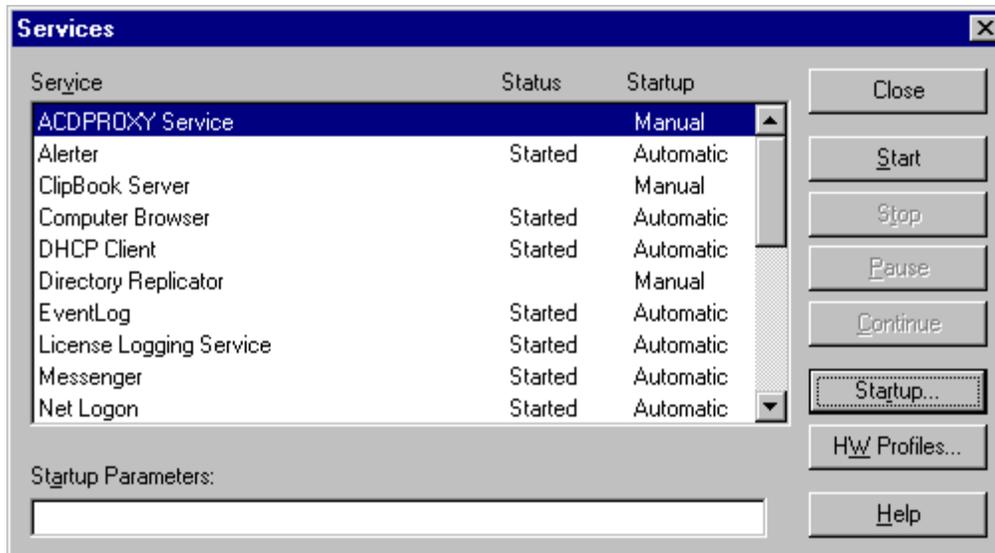
The ACDPROXY Service login and password must be set up to the same Login and password used by the Telephony Service. The User login and password are set in the User Manager before attempting services startup. Refer to the “Setting up the Server as a Primary Domain Controller” section located in Chapter 4 for information on setting up the user with domain user rights.

Configuring the ACDProxy Service

The ACDProxy Service can be setup to start at the time the server is booted. The *TN Table* dialog box allows you to select to Load ACDProxy at startup. Refer to the “Configuring the Host Table” section for additional information.

To Configure the ACDProxy Service:

1. Open the Control Panel.
2. Double-click on the **Services** icon.
The *Services* dialog box is displayed.



3. If not highlighted, click on **ACDPROXY Service** and select the **Startup** button. The *Service* dialog box for ACDProxy is displayed.



4. In the *Startup Type* box, select the **Automatic** radio button.
5. In the *Log on as:* box, select **This Account** radio button.
6. Click on the drop down list button located to the right of the *This Account* field to display the list of accounts.
7. Browse for and select the admin account you have setup for TCMSETUP (TAPI_ADMIN). The selected account is displayed on the *This Account* field.

Note: The TCMAPP admin account must be configured prior to completing this step. Information on setting up the TCMAPP is provided in Chapter 4.

8. Enter the *Password*.
9. Click on the **OK** button to save the changes and close the *Service* dialog box for ACDProxy.
10. Click on the **Close** button to close the *Services* dialog box.
11. Reboot the server.

Note: If you have not installed Microsoft TAPI 2.1, the **ACDProxy** Service will not start. Refer to Chapter 4 for information on installing the Microsoft TAPI 2.1.

Interactive Voice Response (IVR)

The IVR System collects data from a call and passes it to a TAPI application. There are two types of IVR Systems, Nortel Symposium Open IVR and third party.

Note: Whereas the Nortel Symposium TAPI Service Provider supports Predictive Dialing and other Call Data applications, the IVR information in this document is not necessarily IVR specific. The information applies to Predictive Dialing as well as other applications, except as noted.

If you are interested in developing an interface to the Symposium TAPI Service Provider from your IVR, contact Nortel CTI Developer's Support line at (800) NT4CTIO for more details.

The IVR System registers with the host system that is running the Symposium TAPI Service Provider with IVR, answers incoming calls, sends collected data to the TAPI NT server, waits for an acknowledgment from the TAPI NT server, and transfers the call to an ACD queue or other device.

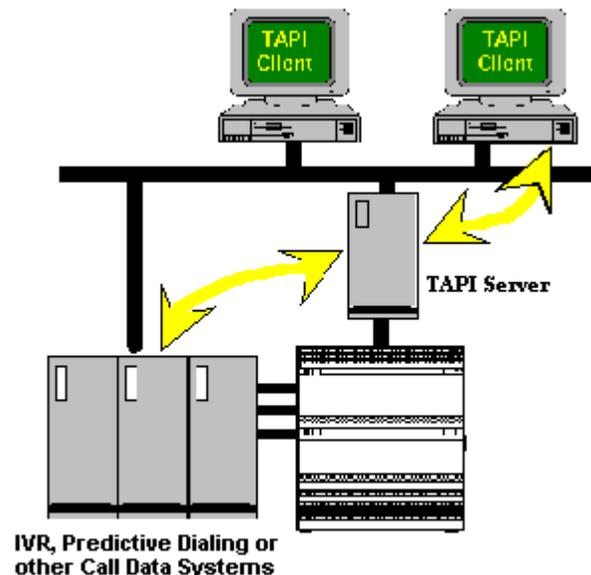


Figure 9 IVR overview

The IVR system collects data from a call and passes it to the Symposium TAPI Service Provider through the Meridian 1. When the Symposium TAPI Service Provider detects an incoming call (with assigned call ID) on a monitored destination DN, the Symposium TAPI Service Provider collects the data based on Call ID. The Symposium TAPI Service Provider passes the data to a TAPI client monitoring that DN through Microsoft TAPI 2.1 Remote Service Provider. The IVR system requires a software module that uses the IVR Driver communication protocol. For example, Nortel's Open IVR uses the IVR Module.

IVR Module

The open and integrated IVR module is a standalone process designed to run on both Symposium IVR machines. It collects data sent from IVR call flows and then sends the data over an Ethernet connection to a TAPI Service Provider for further processing.

Tasks performed by the IVR Module include the following:

- opening and maintaining socket communications with a PC based TAPI Service Provider, which collects information from the IVR and distributes to multiple clients
- opening and maintaining message queues through which IVR call flows send gathered data to the IVR module via custom user function cells
- reading and distributing configuration parameters related to areas such as call monitoring and tracking

The IVR Module executable may reside and execute in any directory. However, a configuration file, which must be called `IVRmodule.cfg` must reside in the same directory.

Note: Only brief IVR Module information is provided in this document for references only. For complete IVR information, refer to your IVR User Documentation.

IVR Configuration File

The IVR configuration file (`IVRmodule.cfg`) contains various configuration parameters. These parameters are listed one per line in any order and identified by a keyword beginning on the first column of each line and followed by a space and the actual parameter value. The keywords include the following:

Keyword	Description	Operand
homehost name	Defines the name of the machine on which the IVR module resides and executes	Name is an alphanumeric string designated as the host name on your machine
externhost name	Defines the name of the machine on which the IVR driver resides and executes	Name is an alphanumeric string designated as the host name on your machine
portnumber n	Defines the port number on the externhost machine through which between the IVR driver and IVR module will be channeled	n is a numeric value usually in the range 1 - 10000. Note: 5000 is the number that the TAPI Service Provider uses to communicate.
timeoutval n	Defines the maximum time in seconds that the IVR module will wait for response from the IVR driver indicating data transfer is complete and the call should be transferred. After this time period elapses, the IVR module will automatically transfer the call. This value will default to 20 if not specified	n is a decimal value within the range 1 - 100
homeloccode n	Defines the Home Location Code of the M1 switch to which the IVR module is attached	n is a decimal value within the range 3 - 100
nwcallid YES NO	Specifies whether or not the network call ID is available with call information	The strings YES or NO are the only acceptable values
monitordn nnnn	This parameter is only valid if NO has been specified for the nwcallid parameter. This specifies a four digit extension of an incoming line to be monitored for call information. One may specify any number of these extensions, listing one per line always using the monitordn keyword. Although the configuration options may be listed in any order, the monitordn listings must appear in numeric order by the channels to which they are assigned. In other words, the DN of the first channel assigned to this application must be listed first. The DN of the second channel assigned to this application must be listed second, and so on	nnnn is a four digit extension of an operator/agent's telephone
logduration n	Defines the number of days IVR log files will remain in the directory with the IVR module executable before being deleted. This value will default to 1	n is a decimal value indicating number of days within the range 1 - 100.

If a required configuration option is missing or contains syntax errors, the IVR module will issue error messages in the current logfile and fail to startup. Refer to the *IVR Messages* section located in Chapter 7 for additional information on the error messages.

Note: The TCP/IP port number on the host that TAPI Service Provider uses to communicate is 5000. This number is not configurable.

IVR Module System Architecture

The following figure details the Meridian 1 system as it relates to the Host environment for digit collection and the call-transfer process.

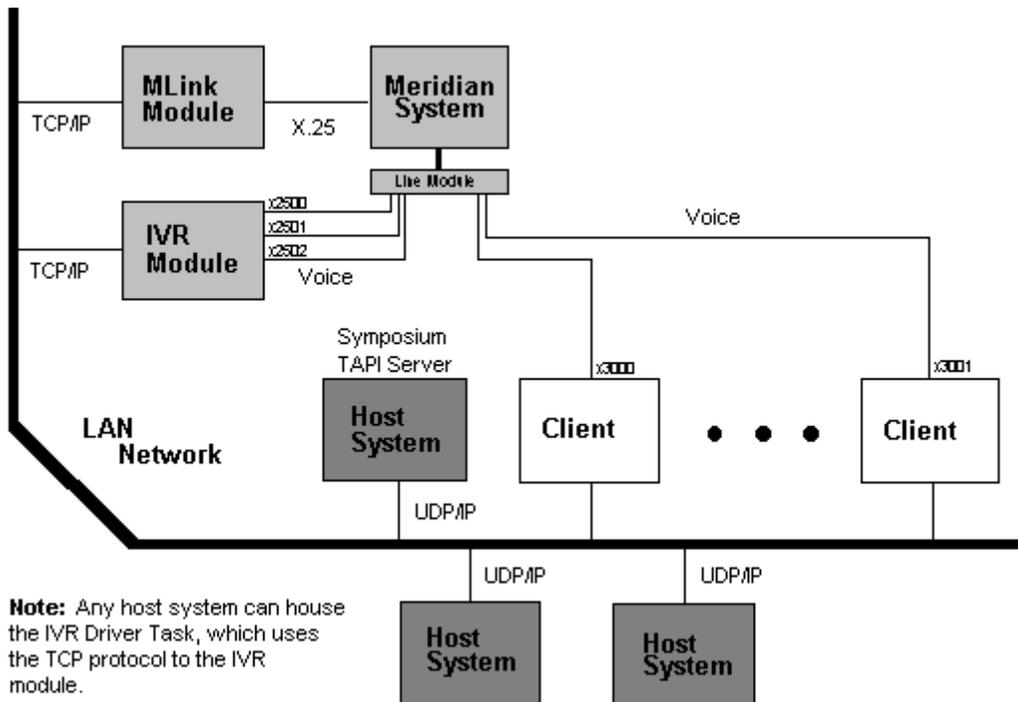


Figure 10 IVR Module System Architecture

IVR communication to the Symposium TAPI Service Provider should be on a dedicated LAN and not on the customer LAN. It can share the same LAN as the Meridian Link module.

Meridian 1 and IVR Environment

The Meridian 1 PBX platform provides the telephony switching needs for this system configuration, while the Meridian Link module provides the call progress details needed to track the call and to gather call information. As shown in Figure 7, the IVR Module is connected to the Meridian PBX providing caller input services. Also, this unit is connected to the LAN Network, which allows packet data transfer.

The IVR unit prompts the user for caller input and gathers the data that has been entered. This process is configured and controlled by a call flow running under the Generations IVR call management software on the Nortel open IVR. Call flows consist of individual cells in a flowchart each of which handles a task such as answering a call, playing a voice prompt, and collecting data. This software also includes special user cells, which allow for user specific processing of caller data. In the Nortel environment this type of cell is used as part of the call processing. This user cell connects to the main IVR module task via message queues and routes call

information from the call flow to the IVR module. This data is transferred to the IVR Driver Task running on a host on the Network.

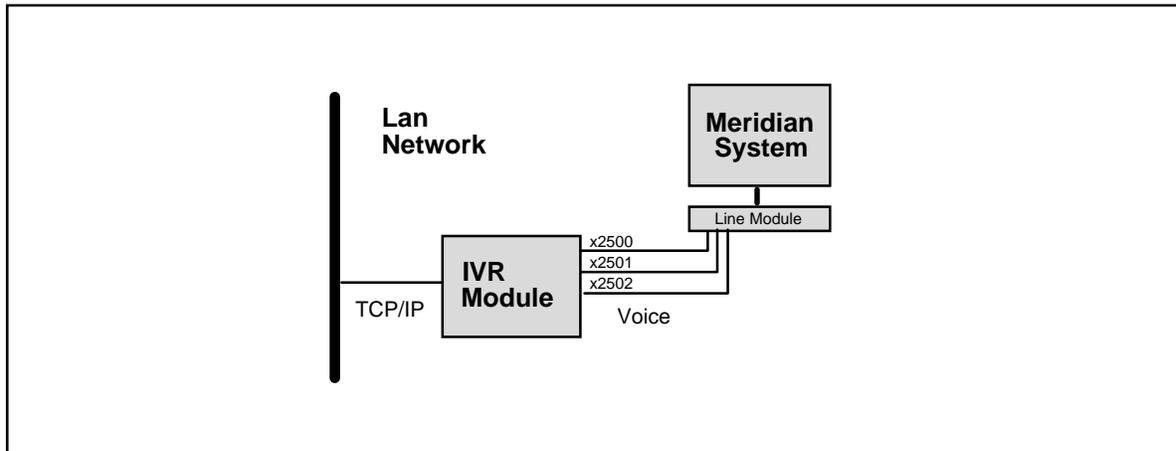


Figure 11 Meridian 1 and IVR Environment

IVR Driver

The IVR Driver Task on the Symposium TAPI Service Provider provides two types of connectivity. It connects to the IVR module and to the Data Transfer Task on the network. The TCP Internet Protocol is used between the IVR unit and the IVR Driver Task, while UDP is used to broadcast IVR data to a Data Transfer Task. One or more IVR Modules may register with a single IVR Driver Task on a server. IVR Modules may also exist at separate sites and are associated with separate IVR Driver Tasks on separate servers.

Each IVR Driver Task is associated with a designated Data Transfer Task for handing off data to be broadcast to all Data Transfer Tasks on the network. This association is defined in a configuration file, which specifies the IP address and the port of the associated Data Transfer Task.

The functionality of the IVR Driver Task depends on whether the Network Call Id can be delivered with the Collected Digit Data in the Caller Data message from the IVR. If the Network Call Id can be delivered then the Collected Digit Data will be broadcast in a IVRCallerData message to a designated Data Transfer Task. However, if Network Call Id cannot be sent from the IVR with the collected digit data (as is the case with 3rd Party IVR systems), then the IVR Driver Task monitors the Mlink for calls coming into the IVR system. When a call is seen, the Network Call Id for that call is stored and put into IVRCallerData message structure that will be broadcast to a designated Data Transfer Task. The IVRCallerData message with the Network Call ID IE included is broadcasted to a designated Data Transfer Task.

IVR Module Scenarios

IVR Module to IVR Driver Task Communication

The following scenarios describe TCP/IP connection based communications between the IVR Module and the IVR Driver Task.

IVR Module originated messages flow to the IVR Driver Task are shown in the following event flow 1. The IVR registration takes place once until a disconnect occurs between the IVR Module and the IVR Driver Task at which point the IVR module must re-register. As long as the IVR Module is registered with the IVR Driver Task, IVR Caller Data messages can be sent from the IVR Module to the IVR Driver task repeatedly until a

disconnect takes place. For a 3rd party IVR, if any of the ports specified in the registration message could not be monitored, then an unsolicited status message is sent to the IVR to indicate that the port registration request failed.

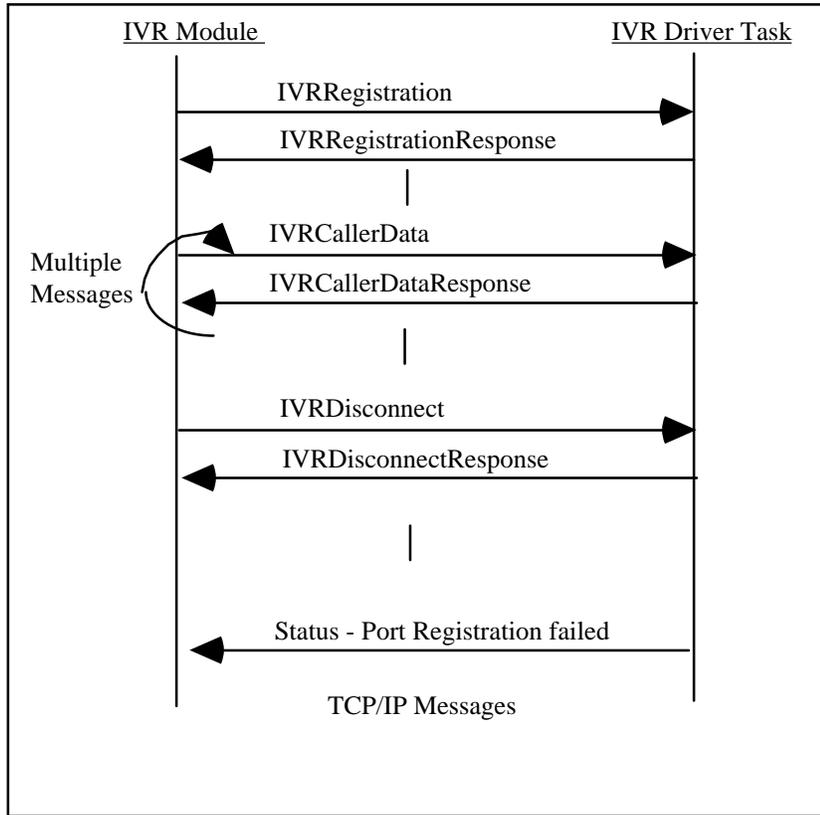


Figure 12 IVR Scenario Event Flow 1

The following event flow 2 shows a normal message flow of the IVR module registering with the IVR Driver Task and sending IVR Caller Data messages followed by a Host Disconnect message originating at the IVR Driver Task. The Host Disconnect message is the only message originating at the IVR Driver Task with a destination of the IVR Module (except for the unsolicited Status message).

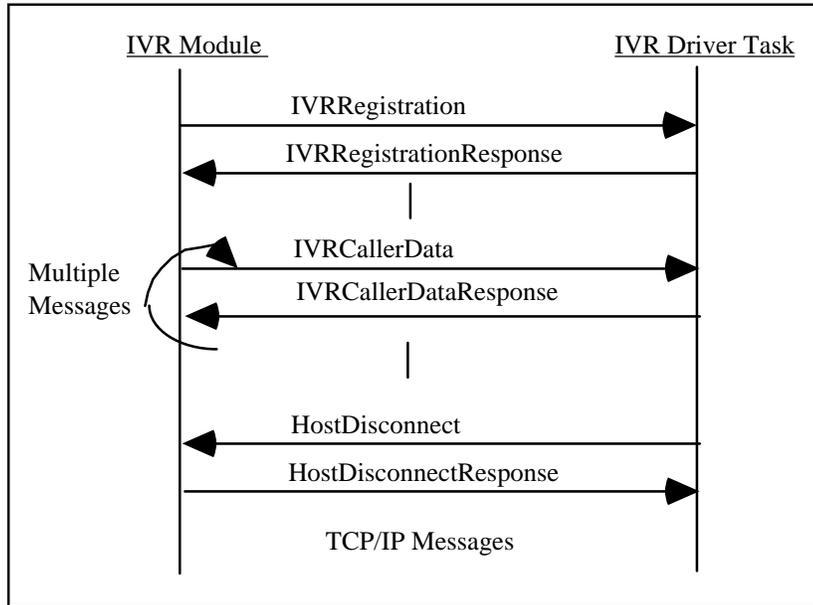


Figure 13 IVR Scenario Event Flow 2

IVR Driver Task to Data Transfer Task Communication

The following scenario describes UDP connectionless based communications between the IVR Driver Task and the Data Transfer Task.

The following event flow 3 shows a message flow of the IVR Driver Task sending Caller Info Data messages to the Data Transfer Task. The CallerInfoData message is the only message originating at the IVR Driver Task with a destination of the Data Transfer Task.

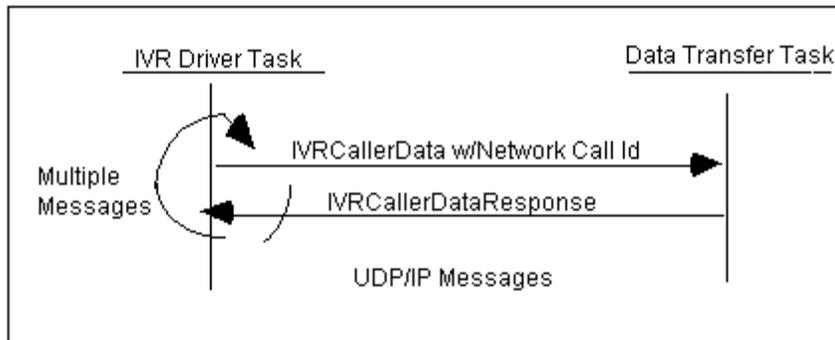


Figure 14 IVR Scenario Event flow 3

There are no messages (not including responses) which originate at the Data Transfer Task with a destination of the IVR Driver Task.

Data Transfer Task to Data Transfer Task Communication (inter-server)

The following scenario describes UDP connectionless based inter-server communications between Data Transfer Tasks.

The following event flow 4 shows a inter-server message flow between Data Transfer Tasks. CallerInfoData is broadcast to all other associated Data Transfer Tasks residing on other host servers. A CallerInfoDataResponse message is expected to verify the data was received. If no response message is received after 2 retries then an error is logged that the server is out of service.

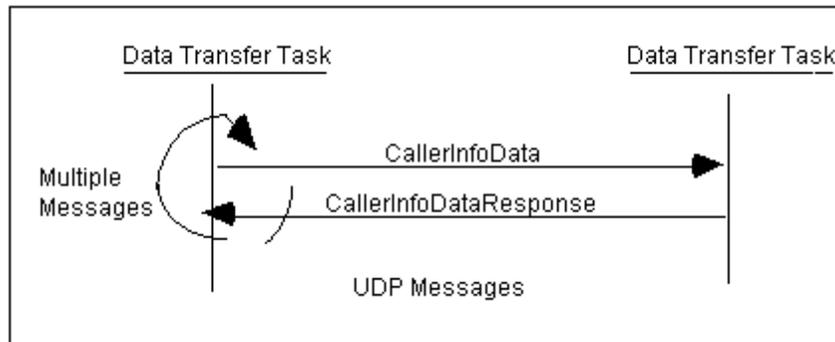


Figure 15 IVR Scenarios Event Flow 4

Administering the IVR Module

IVR Module Functionality

Administration:

- Configure the destination address and port of a IVR Driver Task.
- Configure the Home Location Code of the M1 switch to which the IVR module is attached.
- Configure the maximum time value (in seconds) that the IVR module will wait for a response from data sent to the IVR driver after which it will timeout and automatically transfer the call.
- Specify whether or not the Network Call Id is available with the call information; if it is not available, configure a list of DNs (extensions of customer service agents) to be monitored.

Responsibilities:

All messages sent or received to/from the IVR are via TCP/IP messages.

- Send IVRCallerData to IVR Driver Task w/ Network Call ID IE or Port/DN IE.
- Send IVRRegistration to IVR Driver Task including either indication that Network Call Id will be sent from the IVR or a list of all ports/DNs of incoming IVR lines will be sent.
- Send IVRDisconnect to IVR Driver Task, which severs the socket between the IVR Module and the IVR Driver Task.
- Receive HostDisconnect from IVR Driver Task, which severs the socket between the IVR Module and the IVR Driver Task.

IVR Driver Task Functionality

Administration:

- Configure the destination address and port of a Data Transfer Task
- Configure the Home Location Code of the M1 switch that the IVR module is attached to

Responsibilities:

- Monitor IVR DNs and record associated Network Call Ids only if the IVR does not sent Network Call Ids
- Receive IVRRegistration msg. Indication of whether Network Call Id can be sent will be included in the message. If Network Call Id cannot be sent then the Port List will be stored. The Source IP & socket port of the IVR will be stored in case a HostDisconnect message needs to be sent to the IVR.
- Receive IVRDisconnect message and remove items from port monitor list associated with the source ip & socket port
- Send IVR Module a HostDisconnect message, close the socket, and perform the cleanup duties described in the IVRDisconnect case
- Receive IVRCallerData from the IVR Module; If received from an IVR and the Network Call Id is not included then lookup and include the associated Network Call Id
- Send the IVRCallerData with Network Call ID message to the Data Transfer task via UDP/IP communication
- Send an unsolicited Status message indicating that a port registration request failed if a port specified in a 3rd party IVR registration message cannot be registered.

Data Transfer Task Functionality

Administration:

- Configure host destination list for broadcasts

Responsibilities:

- Receive Caller Data from a data source (IVR Driver Task or user data from a client) to be broadcast to other Data Transfer Tasks
- Receive CallerInfoData from the broadcasting Data Transfer Task and store in the cache
- Monitor clients, attaches CallerInfoData to the call data passing from MLink to the client, and deletes the CallerInfoData from the cache
- Broadcast CallerInfoData to the IP list
- Alert administrator if a response is not received from a Data Transfer Task after 3 retries of sending a CallerInfoData message

Microsoft Outlook 97

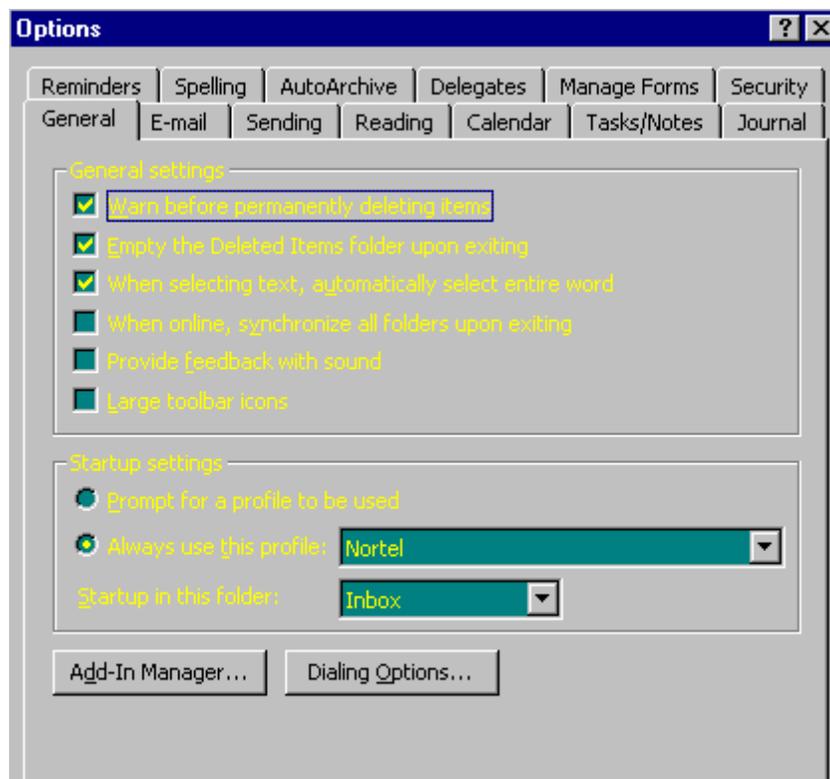
If you have Microsoft Outlook 97, version 8.02.4212 or higher, loaded on your machine, you can use it with the Symposium TAPI Service Provider.

Note: Although Microsoft Outlook 97 works with the Symposium TAPI Service Provider, Nortel does not support Microsoft Outlook 97. This means that problems with Microsoft Outlook 97 must be addressed with Microsoft. Also,, Nortel does not provide the Microsoft Outlook 97 software on the Symposium TAPI Service Provider CD ROM. This software is located on Microsoft's Web page.

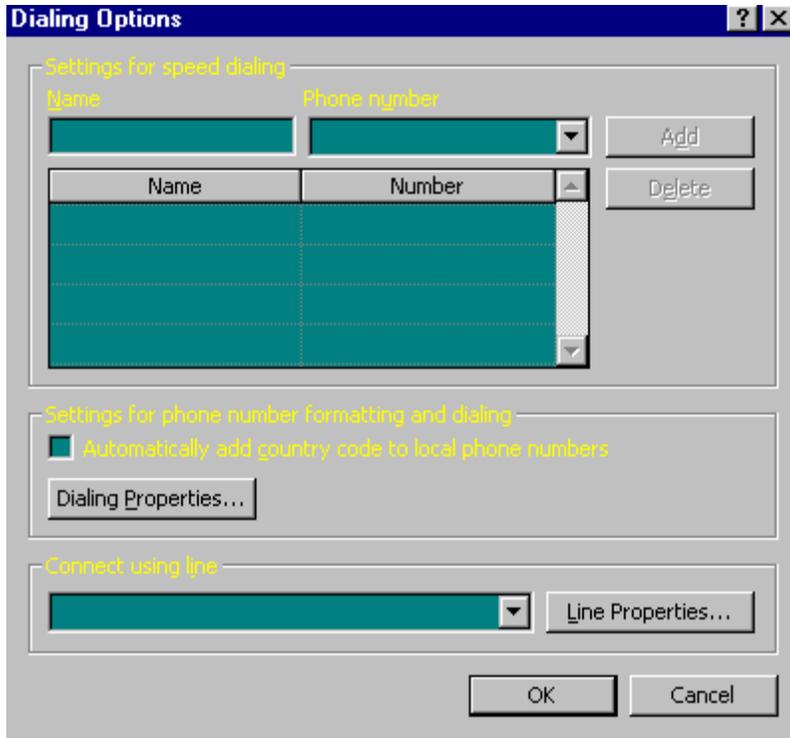
The information presented here is for general purposes only and intended only as a guide in using Microsoft Outlook 97 with the Symposium TAPI Service Provider. For specific Microsoft Outlook 97 information, refer to the Microsoft Outlook 97 user documentation.

To Configure Microsoft Outlook 97:

1. Ensure the Symposium TAPI Service Provider software is installed, configured, and working (refer to the "Verifying the Symposium TAPI Service Provider is Working" section located in Chapter 7) and that Microsoft Outlook 97 is loaded on your machine.
2. From the Contact folder, go to the **Tools** menu and select **Option**. The *Options* dialog box is displayed.



3. Click on the **Dialing Option...** button.
The *Dialing Options* dialog box is displayed.



4. Click on the arrow located to the right of the Connect using line drop down listbox to display the options.
5. Select your line instead of the modem.
6. Make any additional changes to the Dialing Properties as desired.
7. Click on the **OK** button to save the changes and close the *Dialing Options* dialog box.

Note: When placing a call using the Microsoft Outlook 97 software, use the Contact Manager in Microsoft Outlook 97, not the Contact Manager in Scheduler.

pcAnywhere

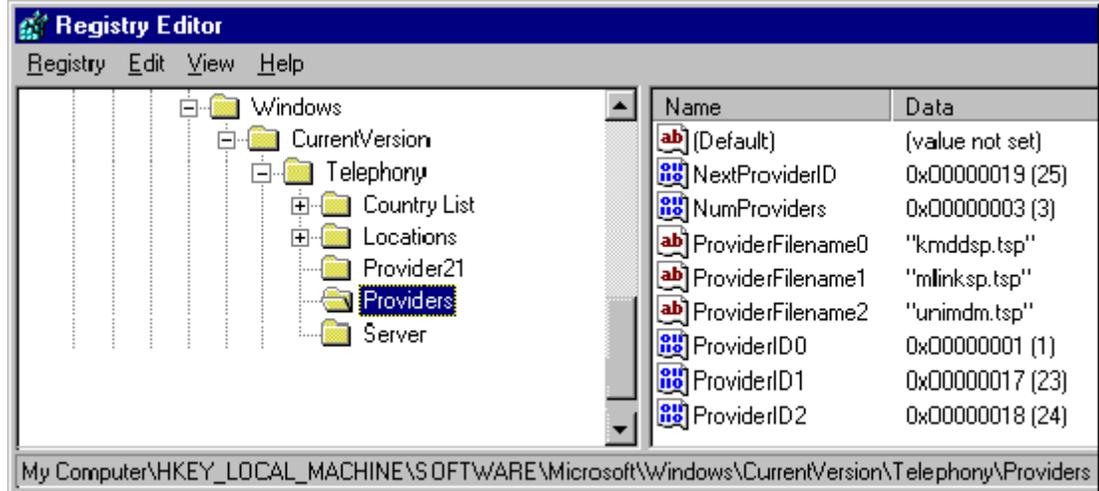
We recommend the use of pcAnywhere as the application used for remote support. Use of this application requires some changes be made to the TAPI Service Provider. The registry must be modified to allow both the mlinksp.tsp and the unimdm.tsp to work at the same time.

Note: If you are installing pcAnywhere after installing the Symposium TAPI Service Provider software, you may have to go to the Telephony Control Panel and remove mlinksp.tsp temporarily. Then install pcAnywhere and modem, then add mlinksp.tsp again.

Follow the following steps to set up the registry for pcAnywhere use:

1. Locate the file regedit.exe in the WINNT directory, and double-click on it.
2. Click on the + sign in front of the word HKEY_LOCAL_MACHINE.
3. Click on the + sign in front of the word SOFTWARE.

4. Click on the + sign in front of the word MICROSOFT.
5. Click on the + sign in front of the words Current Version.
6. Click on the + sign in front of the word Telephony.
7. Click on the + sign in front of the word Providers. (It should look similar to the picture below **after** the change is made)



8. Switch the mlinksp.tsp and unimdm.tsp around in this registry.
9. Double-click on the ProviderFilename1 entry and enter *mlinksp.tsp* in the Value Data field, and click **OK**.
10. Double-click on the ProviderFilename2 entry and enter *unimdm.tsp* in the Value Data field, and click **OK**.
11. Double-click on the ProviderID1 entry and enter the *number* in the Value Data field that appears in the ProviderID2 data.
12. Double-click on the ProviderID2 entry and enter the *number* in the Value Data field that used to appear in the ProviderID1 data.
13. Exit the Regedit application.
14. Install your modem in software the same as in a normal use.
15. In pcAnywhere, you must select the COM port that the modem is installed on.

To get pcAnywhere to connect correctly, set the baud rates the same on Host and Remote ends.

This procedure is to ensure that mlinksp.tsp is the first Service Provider to launch. The reason for this, is that some applications will fail after seeing the first Service Provider failure, and that could be unimdm.tsp. Thus it would never try to start mlinksp.tsp.

Note: If you are installing pcAnywhere after installing the Symposium TAPI Service Provider software, you may have to go to the Telephony Control Panel and remove mlinksp.tsp temporarily. Then install pcAnywhere and modem, then add mlinksp.tsp again.

Chapter 6 Troubleshooting Tools

This chapter provides information on the Logger troubleshooting tool. This troubleshooting tool provides valuable information for Customer Support personnel to assist you when you are having problems.

Logger Troubleshooting Tool

During installation or while running an application, problems might occur that can not easily be found through normal running of the application. When requested to by customer support personnel, creating a log file provides information that assists in troubleshooting problems. Before creating a log file, access the configuration dialog boxes and ensure that the desired log style is selected. Refer to the “Configuring the Log Styles Table” section located in Chapter 3 for detailed information on selecting the data items to display on the Logger window. The default style that allows for all data items to be logged is “1.” Do not change this default style unless instructed to by technical personnel.

The Logger application presents information in the *Logger* window that can be stored in the overflow file for review by technical personnel. When a troubleshooting session is started you should always clear the overflow file. This will ensure that no old information from a previous session is being saved.

When the troubleshooting session is completed you should append the information to the overflow file. This ensures all information from the current session is saved.

Running the Logger Application

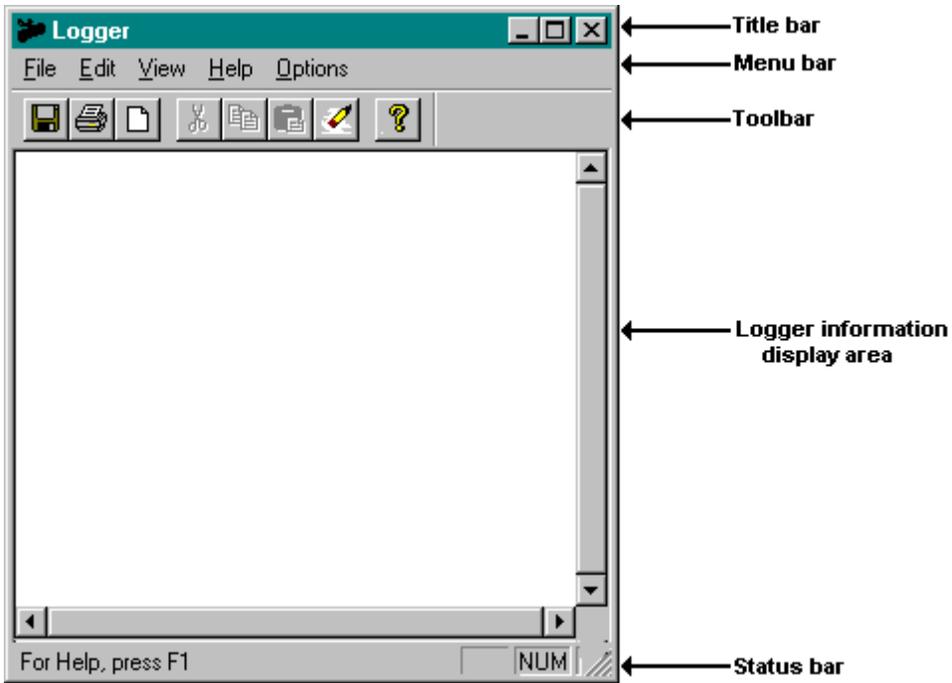
Note: Run this application only when requested to by Symposium TAPI Service Provider for Meridian 1 customer support personnel.

The Logger application is accessed by running the **Logger.exe** program located in the **MISERVER** directory.
To Access the Logger.exe program:

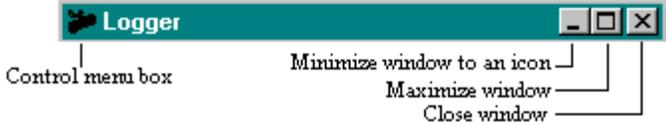
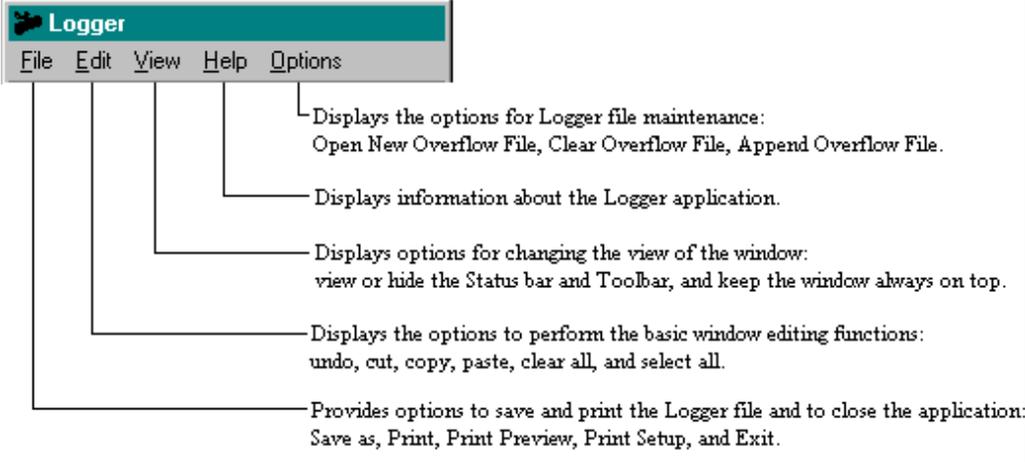
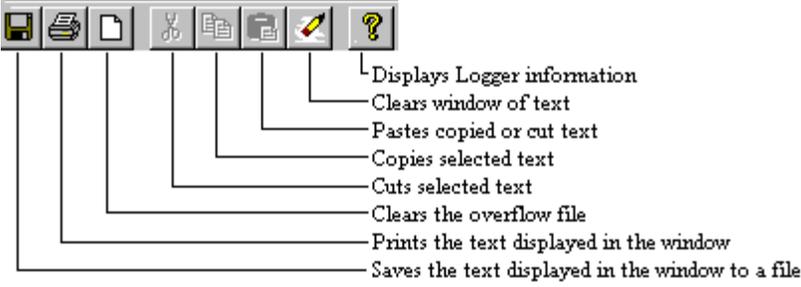
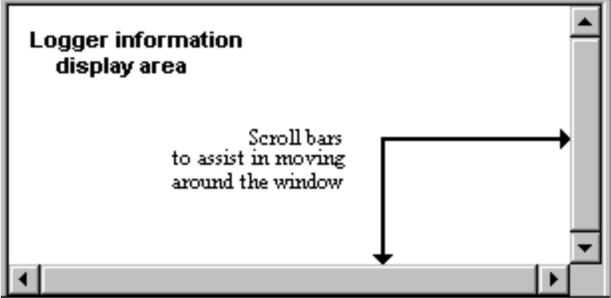
1. Click on **Start** and select **Windows NT Explorer** from the **Programs** list.
2. If you accepted the default drive, click on the C drive to display the folders. Otherwise, click on the Drive where the Symposium TAPI Service Provider for Meridian 1 software was installed.
3. Click on the **MISERVER** directory to display the installed files.
4. Double-click on **Logger.exe**.
5. The *Logger* window opens.

Logger Application Window

The Logger application provides a window-based user interface that allows you to view, edit, and print the text displayed in the Logger information display area. Logger provides menu options for using the Logger application. The window toolbar provides access to certain options without accessing the menus and selecting the option. The *Logger* window contains the following window elements.



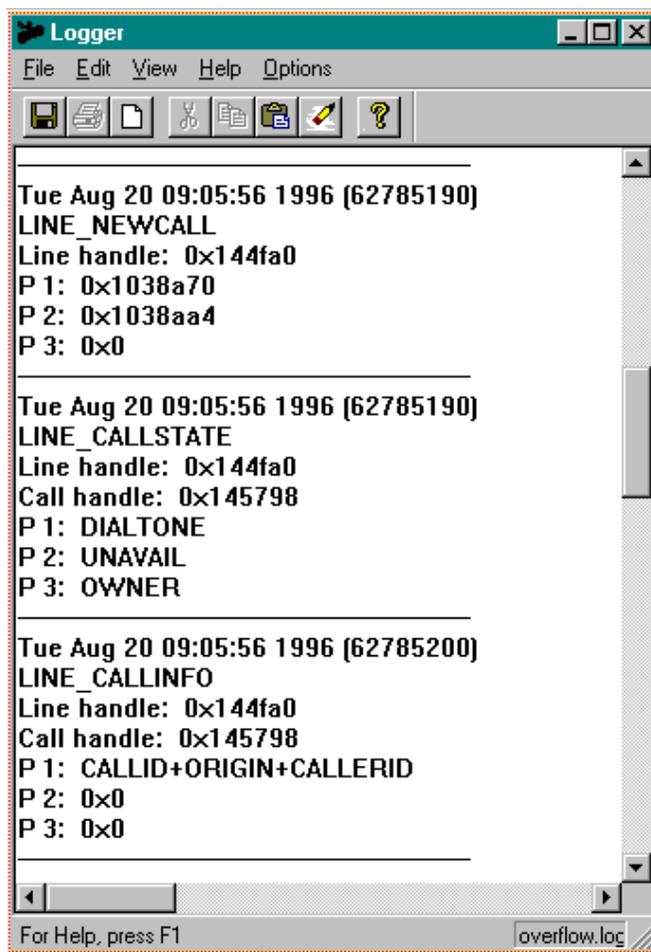
The following table provides a description of the window elements contained on the *Logger* window.

Elements	Description
Title bar	<p>Contains the name of the window and the means to minimize, maximize, move, and close the window using the window icons or the Control menu box.</p> 
Menu bar	<p>Contains the menu option for the Logger application. Clicking on a menu provides the list of options for that menu.</p> 
Toolbar	<p>Contains icons that provide quick access to certain menu options.</p> 
Display area	<p>Presents information that assists in troubleshooting problems. This information can be saved to a file.</p> 
Status bar	<p>Provides user information, information on the area of the window that the mouse button cursor is pointing to, or on your current action.</p> 

Using the Logger Application

To Display the Logged Information in the *Logger* Window:

1. Run the Logger application. Refer to the “Running the Logger Application” section. The *Logger* window opens.
2. Clear the Overflow file. The overflow.log file is located in the **c:\MIServer** directory if you accepted the default directory destination during installation or in the **MISERVER** folder located in the directory you selected during installation.
 - a. Click on **Options** located on the Menu bar of the *Logger* window. The **Options** menu is displayed.
 - b. Click on the **Clear Overflow File** option.
3. Start the Application. The Event and Error messages are displayed on the *Logger* window.



The information is logged according to the Log Styles Number selected on the configuration dialog boxes. Refer to the “Configuring the Log Styles Table” section located in Chapter 3 for detailed information on selecting the data items to display on the Logger window.

Note: If the Log Style number selected on the configuration dialog boxes is 0, the Logger application will not display any logged information.

To save the specific information during the troubleshooting session, you must save it to a .log file.

To Save the Information to a File:

When the troubleshooting session is over, append the Overflow file.

1. Click on **Options** located on the Menu bar of the *Logger* window.
The Options menu is displayed.
2. Click on the **Append Overflow File** option.

Or

Use the **Save As** option to save the information to a file.

1. Select the **Save As** option on the **F**ile menu.
Or
Click on the **Save** icon located on the Toolbar.
The *Save As* dialog box is displayed.
2. Enter the *file name* and *directory path*.
3. Click on the **OK** button or press <Enter> save the file and close the *Save As* dialog box.

The Troubleshooting log is saved to the file.

To Print the Information on the Window:

To print the complete window text:

Select the **Print** option on the **F**ile menu.

Or

Click on the **Print** icon located on the Toolbar.

The complete window text is printed.

To print only selected window text:

1. Select the text that is to be printed.
The selected text is highlighted.
2. Select the **Print** option on the **F**ile menu.

Or

Click on the **Print** icon located on the Toolbar.

The selected text is printed.

Chapter 7 Troubleshooting Tips

This chapter provides information on how to verify the Symposium TAPI Service Provider is working, specific problems and possible solutions. It also includes the instructions on removing the Symposium TAPI Service Provider software from your system.

Verifying the Symposium TAPI Service Provider is Working

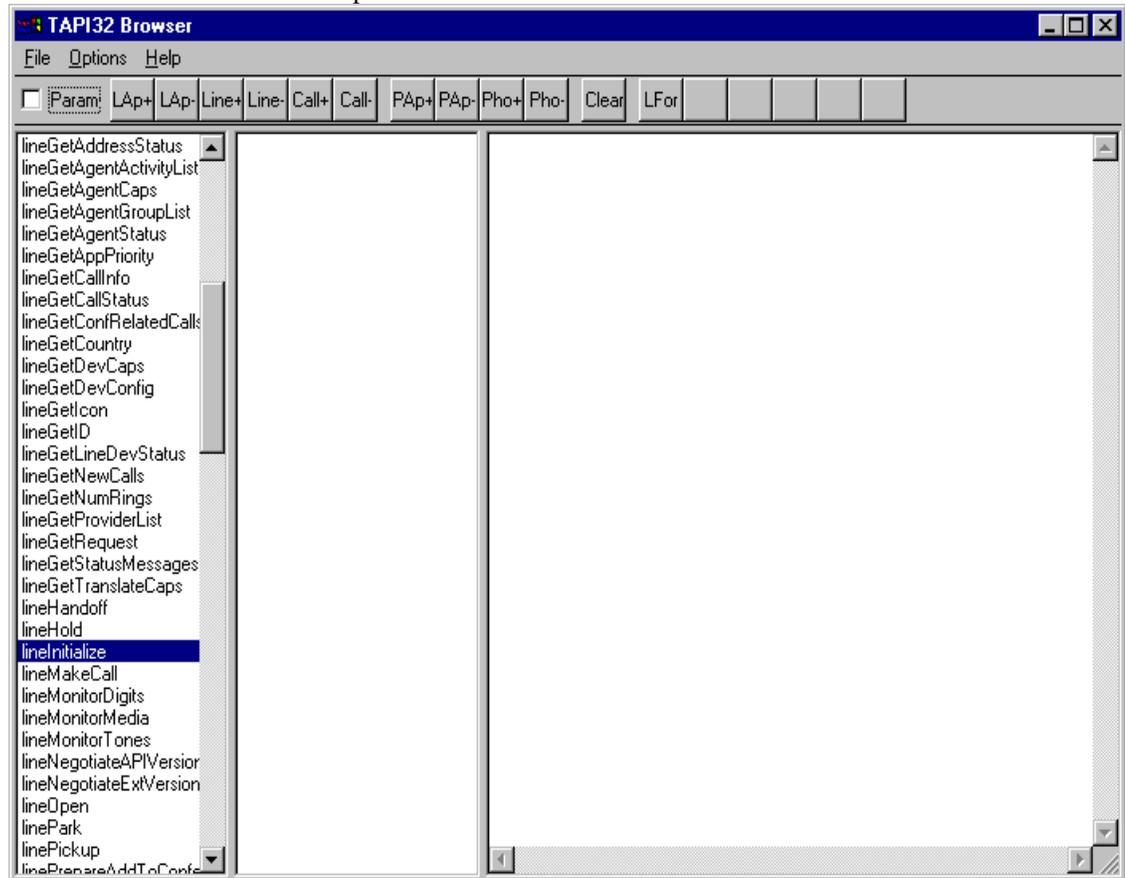
The Microsoft TAPI Browser tool is provided to assist you in verifying that the Symposium TAPI Service Provider is properly installed and configured. Alternately, Microsoft's Dialer, provided with Windows NT, can also be used to dial a call and verify that the Symposium TAPI Service Provider is up and running.

Using the Microsoft TAPI Browser Tool

To Use the Browser Tool:

1. **Run the Logger program** located in the c:\M1Server directory. Detailed information is provided in the "Logger Troubleshooting Tool" section located in this chapter.
The *Logger* window opens.
2. **Run the TB20w.exe program** located in the c:\M1Server directory.
 - a. Click on **Start** and select **Windows NT Explorer** from the **Programs** list.
 - b. If you accepted the default drive, click on the C drive to display the folders. Otherwise, click on the Drive where the Symposium TAPI Service Provider software was installed.
 - c. Click on the c:\M1Server directory to display the installed files.
 - d. Double-click on **TB20w.exe**.

The *TAPI 32 Browser* window opens.



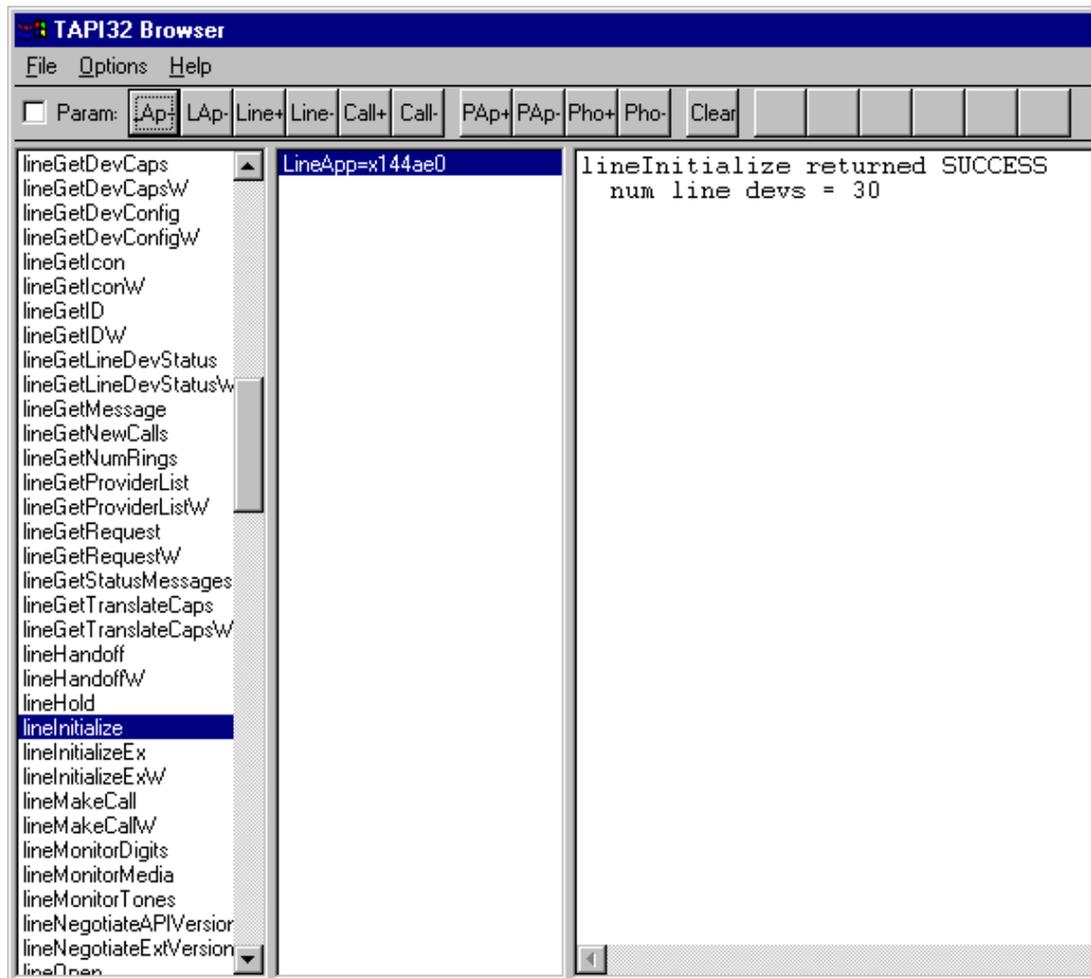
Note: Ensure the default values for the **Line DW Privileges** are Monitor and Owner and the **DW Media Mode** is Interactive Voice.

To check these values:

- Click on the **Options** menu and select the **Default Values** option.
- Click on the line dwPrivileges and set to **Monitor and Owner**.
- Click on the line dwMediaMode and set to **Interactive Voice**.
- Ensure that both **Autodellocate** choices are checked on the **Options** menu.

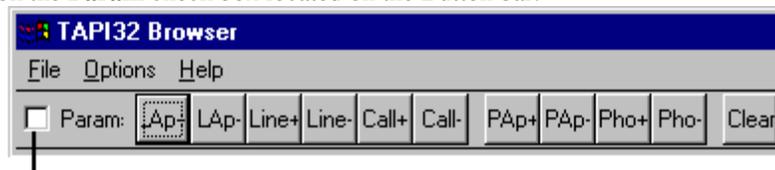
3. Load the Service Provider by clicking on the **LAp+** button located on the Button bar.

The Center box lists the handles. A message is displayed on the right side of the screen informing you of the number of devices. This message confirms that the Symposium **TAPI Service Provider** is talking to the Meridian Link module and the Link module is talking to the Meridian 1 switch.



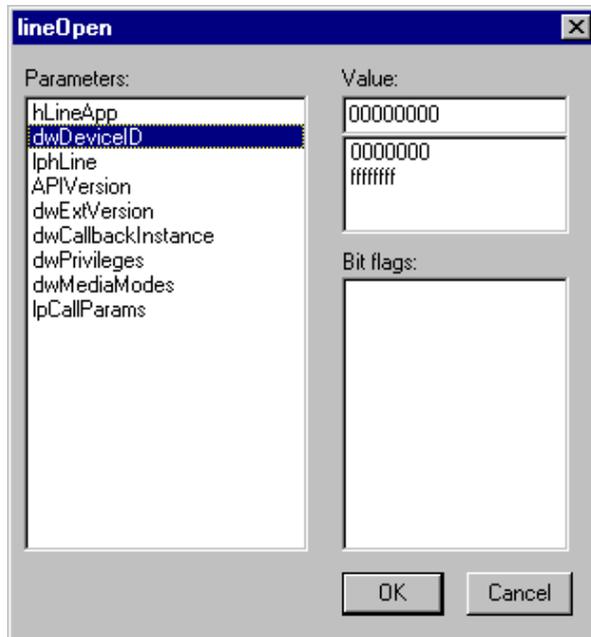
4. Verify that a phone is configured correctly.

- a. Identify the telephone device associated with line 0. (This is generally the first one presented in the list of TNs on the TN table in the Configurator program.)
- b. Open line 0 on the Browser.
 1. Click on the **Param** check box located on the Button bar.



Param check box

2. Click on the **Line+** button.
The *lineOpen* dialog box is displayed.
3. Click on the **dwDeviceID** parameter.



4. Click on the **OK** button.
The Line 0 is displayed in the center box.

c. Perform some action with the telephone, for example, take receiver off hook or call it manually.

A message on the right side of the *TAPI 32 Browser* window informs you of the action. This verifies that the telephone is configured correctly. You may wish to identify additional telephones for random checking.

If you do not receive a successful message on the *TAPI 32 Browser* window, save the information to a file for viewing by support personnel. Refer to the “Logger Troubleshooting Tool” section for detailed information on using the Logger tool for troubleshooting purposes.

If you are trying to start **TAPI Service Provider** with a large number of lines and the TAPI does not initialize, the “initialization timeout” parameter may be set too low. The default is 16, but must be set higher for more than 50 lines. Refer to the “Configuring TAPI Service Provider Database Information” section located in Chapter 3 for details on configuring the “initialize timeout.”

Note: If the Browser application crashes for any reason, you must re-start Windows NT. Microsoft has no error recovery and does not allow you to shut down tapisrv.exe. Restarting Windows NT closes tapisrv.exe.

Using the Browser for Additional Acceptance Testing

The following tasks are provided for users who require additional methods to ensure the Symposium TAPI Service Provider is properly installed and working.

1. Run the **TB20w.exe** program and load the Service Provider. Refer to the “Using the Browser Tool” section.
2. Open all lines.
 - a. Double-click on the **Open All Lines** command (use the left scroll bar to view this command).
 - b. Click **OK** for each line if the Params box is checked.

3. Perform the following as necessary:
 - a. **To answer an incoming call:**
 1. From another phone set, call the DN of a monitored set.
 2. Position on the *Offering call* in the Browser window.
 3. Double-click on the **lineAnswer** command.
 4. Click **OK**.

 - b. **To do a blind transfer (*Note: a blind transfer to CDN only works if you have installed the patch. Call Customer support for more information*):**
 1. Position on the *connected line* and double-click on **LineSetupTransfer**.
 2. Click **OK**.
 3. Position on *Dialtone line* and double-click on **LineDial**.
 4. Click on **IpszDestAddress** and enter a valid **DN** to transfer to.
 5. Click **OK**.
 - c. **To create a 3 Party Conference:**
 1. Answer an incoming call.
 2. Double-click on **LineSetupConference**.
 3. Position on *Dialtone line* and double-click on **LineDial**.
 4. Click on **IpszDestAddress** and enter a valid **DN** to conference on.
 5. Position on *OnHoldPendingConference line* and double-click on **LineCompleteConference**.

 - c. **To add 4-6 Parties to Conference:**
 1. Position on the *connected line*.
 2. Double-click on **LinePrepareAddToConference**.
 3. Click on **OK**.
 4. Position on *Dialtone line* and double-click on **LineDial**.
 5. Click on **IpszDestAddress** and enter a valid **DN** to conference on.
 6. Click on **OK**.
 7. Position on *OnHoldPendingConference line* and double-click on **LineAddToConference**.

Note: Be sure to set the right Call= information for the Consult call.

 8. Repeat these steps to add parties.

 - d. **To make a call on digital sets for regular DN and for ACD Sets:**
 1. Position on a *Line that you want to make a call from* and double-click on the **lineMakeCall line**.
 2. Click on **IpszDestAddress** and enter a valid **DN** to call.
 3. Click on **OK**.

Note: If the first key is an ACD key and you want to make a call out on another ASTd key perform the following:
 Before you enter the DN to dial, set the **Callparams \ Address ID = 1** (for second key or another number that associates with the key the DN is on).

 - e. **To put a call on hold and unhold:**
 1. Position on a *connected call* and double-click on **lineHold**.
 2. Position on the *onhold call* and double-click on **lineUnHold**.

Using the Windows Dialer

To Use the Dialer:

1. Run the **Dialer.exe** program located in the Windows NT directory.
2. Select a line number to control from the drop-down list.
The keypad is displayed.
3. Dial a known working number that can be answered. A completed call verifies that the Meridian 1 TAPI is working correctly.

Troubleshooting Problems

The following sections provide information to assist you in troubleshooting problems. The online help also provides troubleshooting tips.

First Call Attempt Fails

If you have completed installation and configuration of the various hardware and software components, and your first attempt to make a call fails, perform the following steps:

1. Ensure the hardware connections are properly attached.
2. Confirm the Direct Connect and VAS ID setup.
3. Confirm the DCE/DTE jumper settings.
4. Confirm the Direct Connect (Link 0) parameters. Refer to Procedure 13 in the *Meridian Link/ Customer Controlled Routing Installation and Upgrade Guide (553-3202-210)*.
5. Confirm the Meridian Link (Link 1) parameters. Refer to Procedure 14 in the *Meridian Link/Customer Controlled Routing Installation and Upgrade Guide (553-3202-210)*.
6. Confirm the TAPI Service Provider /TCP/IP parameters. Refer to the Microsoft NT *TCP/IP Reference*.
7. Confirm the M1 cfg parameters. Run the Configurator application and verify the parameters for your switch and telephones. Refer to the “Configuration” chapter of this guide (Chapter 3).
8. Ensure the client application is configured properly.

Note: If you are trying to start TAPI Service Provider with a large number of lines and the TAPI does not initialize, the “initialization timeout” parameter may be set too low. The default is 16, but must be set higher for more than 50 lines. Refer to the “Configuring TAPI Service Provider Database Information” section located in Chapter 3 for details on configuring the “initialize timeout.”

Dual Processor Configurations are not supported by the Symposium TAPI Service Provider unless equipped with Service Pack 4.

Downloading the Switch Configuration Information Failed

When downloading the Switch configuration information and no lines appear in the database or the download shows that a load failed, ensure that the words “LD 20” appear in the download.txt file.

Testing the Connectivity

The *Application Module and Intelligent Peripheral Equipment Module Diagnostic and Maintenance Guide* (553-3211-510) describes methods to test the Direct Connect and the Meridian Link (host link). For example, you can test the hardware in the Application Module or IPE Module with the loopback test. You can also use the tracing facilities to record the messages being exchanged across the links. These messages are recorded to aid Northern Telecom support personnel in diagnosing the problem.

Verify that the Direct Connect link is up by performing “Procedure 12: Verifying the link status,” located in *the Meridian Link/Customer Controlled Routing Installation and Upgrade Guide* (553-3202-210).

Testing the TCP/IP Connection

You can use the ping command to test the TCP/IP connection from the TAPI Service Provider to the IPE Module or Application Module.

1. Open a DOS window
2. Type **ping [IPE TCP/IP Address]**
If successful, a message is displayed saying the Host was contacted.
If not successful, a message is displayed saying the Host was not contacted. Proceed to the Troubleshooting section.
3. To close the ping window, press Esc.

Idle Message with Remote Party Disconnects

When the remote party disconnects a call, the Symposium TAPI Service Provider sends a **LINE CALLSTATE** message with the call state of idle.

To terminate a call or a call attempt, TAPI32.DLL uses the **TSPI lineDrop** on the call. This has the effect of hanging up on that call and making it possible to make another call. This function disconnects a call, or abandons a call attempt in progress.

If the remote party disconnects a call, the service provider sends a **LINE CALLSTATE** message with a call state of disconnected. To clear the call, TAPI32.DLL must also drop the call by invoking **TSPI lineDrop** on the call. This causes the service provider to transition the call to the idle state.

A call handle remains valid after a call has been dropped. This enables TAPI32.DLL to call operations such as **TSPI lineGetCallInfo** to retrieve information about a call (for example, for logging purposes). The call handle is eventually deallocated by **TSPI lineCloseCall**, which shuts down operations for a call and deallocates (invalidates) the call handle.

Problem Descriptions

When using telephony services, you may encounter problems with the Symposium TAPI Service Provider, the Meridian 1, and the Meridian Link. The following is a summary of known problems and recommended solutions.

Table 1 Problem Descriptions

Problem	Explanation	Solution
The TAPI Service Provider will not load. Error message: <i>Connect error, host %s %d</i>	Connection to the Meridian Link IPE Module or Application Module cannot be made.	Use the Ping command to check the connection, the host name, and the module address of the Meridian Link IPE Module or Application Module.
The connection to the Meridian 1 cannot be established.	The Meridian 1 tries to connect but does not give a registration association identifier.	Use mlusr commands to check the Meridian Link and the Meridian 1. (For information on mlusr commands, refer to the <i>Intelligent Peripheral Equipment Module and Application Module Diagnostic and Maintenance Guide</i> , 553-3211-510.) Also check the Symposium TAPI Service Provider configuration file to ensure that all values are correct.
The client application cannot access the TAPI Service Provider.		Verify that a Symposium TAPI Service Provider is registered and operational. Access the Task Manager and verify the TAPI SRV program is running. The Task Manager is accessed by clicking the right mouse button on the windows Menu bar.
Client applications do not connect (lineInitialize) to the TAPI Service Provider.		Use mlusr commands to check the Meridian Link and the Meridian 1. (For information on mlusr commands, refer to the <i>Intelligent Peripheral Equipment Module and Application Module Diagnostic and Maintenance Guide</i> , 553-3211-510.) Also check the Symposium TAPI Service Provider configuration file to ensure that all values are correct. Or Verify that a Symposium TAPI Service Provider is registered and operational. Access the Task Manager and verify the TAPI SRV program is running. The Task Manager is accessed by clicking the right mouse button on the windows Menu bar.
Switch connection drops and terminates calls. Error message: <i>Failed to allocate call info memory</i> Error log message: <i>Resource_limitation_rejection</i>		All existing calls are aborted. While the connection is down, no new requests are allowed; however, the Symposium TAPI Service Provider continues to advertise services.
The TAPI Service Provider runs out of memory.		Add more memory to the server.
The Symposium TAPI Service Provider stops responding.		If the Meridian 1 is failing, use Meridian 1 procedures to identify and correct the problem. Verify that a Symposium TAPI Service Provider is registered and operational. Access the Task Manager and verify the TAPI SRV program is running. The Task Manager is accessed by clicking the right mouse button on the windows Menu bar. If the TAPI Service Provider is not responding, shut down and re-start your machine to close the TAPISRV.exe file, unload and reload the Symposium TAPI Service Provider for Meridian 1.
An incoming call over an Inbound ANI (IANI) trunk carrying a 10-digit ANI terminates at an ACD agent's In-Calls key. However, if the call appears in an TAPI Service Provider application and the incoming caller hangs up (abandons the call), all subsequent calls to the In-Calls key are not recognized.		The agent should answer the next call by pressing the In-Calls key on the set manually.

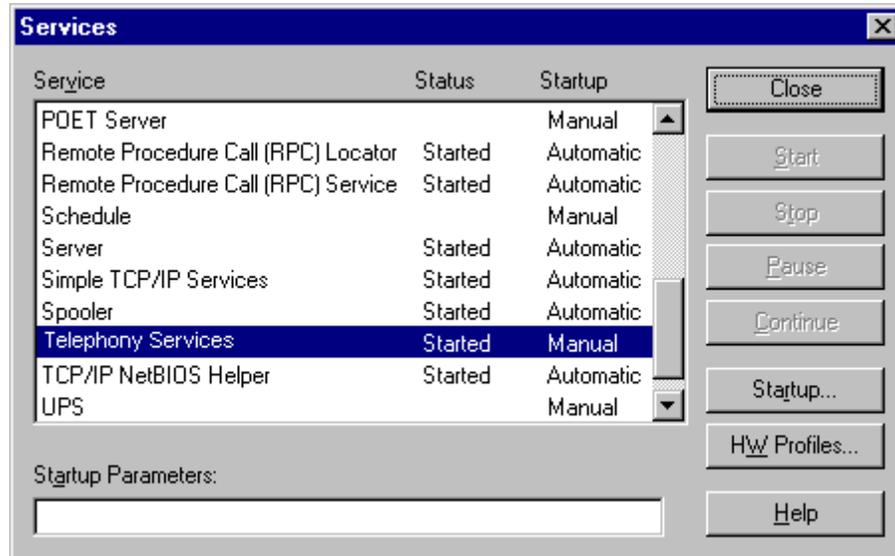
Microsoft TAPI-based Issues- No Error Recovery

When running an application and it crashes, closing the application and restarting it does not unload Microsoft TAPI until you shut down and re-start your machine. Re-starting you machine closes TAPISRV.exe.

Microsoft TAPI-based Issues - Closing the TAPISRV.exe

Users are not allowed to shut down TAPISRV.exe, so Microsoft TAPI currently has no way of unloading. You must shut down and re-start your machine before the TAPISRV.exe file will close. You can verify the status of the TAPISRV (Telephony Services) by the following steps:

1. Open the Control Panel.
2. Double-click on the **Services** icon.
The *Services* dialog box is displayed.



Microsoft TAPI-based Issue - TAPISRV.exe unable to locate DLL

If you receive this message, “tapisrv.exe unable to locate DLL,” you must reboot your machine for the system to see the DLL.

Microsoft TAPI-based Issues - RegisterProcessService Not Found

Receiving the following message:

RegisterProcessService not found in kernel32.dll

indicates a bad build on the CDROM NT4.0 releases of tapiserv.exe. This bad build results in a call to a routine (RegisterProcessService) that no longer exists in the kernel32.dll.

The bad build date and size of the file is as follows:

111,616 bytes

date:06/17/97 5:48pm

This build appears on some Microsoft developers CD ROMs.

To resolve this problem:

Reinstall the operating system with a known good CD ROM.

Or

Upgrade the TAPI 2.0 to TAPI 2.1. This will repair the tapiserv.exe.

Microsoft TAPI-based Issues - LINEERR_NODRIVER

You will receive the following message:

LINERR_NODRIVER

when TAPI assigns the first line to the unimodem.

If you have a unimodem configured and initialize all lines, the TAPI sees it and assigns the first line to the unimodem.

Ensure that the unimodem is not the first on the list.

Access the Control Panel from the Start\Settings menu. Double-click on the **Telephony** icon to display the *Telephony Properties* dialog box. Click on the **Unimodem Service Provider** to highlight it and click on the **Remove** button. After you have installed the TAPI Service Provider, you can add the Unimodem back.

Microsoft TAPI-based Issues - Receive Success when Service is Stopped

LineInitializeEx will return SUCCESS even though the service is stopped. Microsoft TAPI does not pass the failed state, but continues to load any other providers and returns success with the number of devices to the application. However, the number of devices is returned as 0 when the service is stopped.

Meridian Link-based TAPI Service Provider Issues

This section contains known issues that occur with the Meridian Link based TAPI service provider. These problems exist when Meridian Link (or the switch) does not present the complete information.

Meridian Link Presents No Information

Incoming calls do not appear when the original call is not answered and forwarded to a controlled DN. Meridian Link presents no information on “Call forward -no answer” incoming calls to a controlled DN. However, if the call is answered manually, a StatusChange of ACTIVE, then CONNECTED is seen.

Call Progress Messages not Delivered

1. If a non-AST controlled telephone is called as the consultation leg of a manually initiated (from the telephone and not a TAPI application) conference call, certain call progress messages are not delivered to the application.

For example, consider three phones A, B and C. Both A and B are AST controlled while C is not. A is on an established call to B. From the conference key and the key pad of A, a consultation call is placed to C. No Meridian Link messages are sent when C answers, therefore there is no way for the Symposium TAPI Service Provider to determine when C has answered the call.

From a TAPI point of view, this is what occurs on the TAPI application controlling A.

A has a call to B. CallHandle1 = CONNECTED.

A places consultation call to C. CallHandle1 = CONFERENCED, CallHandle2 = DIALTONE, CallHandle3 = ONHOLDPENDINGCONF.

Note: CallHandle2 is the consultation leg of the call and CallHandle3 is the conference call.

C answers consultation call. All call handles remain as above.
CallHandle2 remains in dialtone state.

A completes the conference call. CallHandle1 = CONFERENCED, CallHandle2 = CONFERENCED, CallHandle3 = CONNECTED. This is as any TAPI application would expect. If C disconnects prior to the completion of the conference call, Meridian Link does not send any message indicating that C has disconnected thereby causing the Symposium TAPI Service Provider for Meridian 1, and subsequently the TAPI application, to lose track of the true state of the call.

From a TAPI point of view, this is what occurs on the TAPI application controlling A.

A has a call to B. CallHandle1 = CONNECTED.

A places consultation call to C. CallHandle1 = CONFERENCED, CallHandle2 = DIALTONE, CallHandle3 = ONHOLDPENDINGCONF.

Note: CallHandle2 is the consultation leg of the call and CallHandle3 is the conference call.

C answers consultation call. All call handles remain as above.
CallHandle2 remains in dialtone state.

C disconnects prior to A completing the conference call. All call handles remain as above. This is not as a TAPI application would expect. CallHandle2 and CallHandle3 should transition to IDLE while CallHandle1 should transition to ONHOLD.

2. The above problem exists for supervised transfer as well. Given the same three phones as above, no messages are sent when C answers the consultation call, or when C drops prior to completion of the supervised transfer.

Status Change Messages not Delivered

1. When a transfer consultation call is dropped after it is answered but before its completion, the Symposium TAPI Service Provider fails.
No StatusChange messages are presented indicating a change in call state unless the third party never answers or unless the consultation call is to an AST monitored phone. In this instance, the internal status is fed back to the other end of the call and proper recovery is performed.
2. When a three-party conference is manually created and put on hold, Meridian Link does not send a status change to the Symposium TAPI Service Provider for Meridian 1. Thus, the Symposium TAPI Service Provider does not know the call is on hold.

Dropping the Original Call during Consult Transfer

When the original call is dropped while the consultation call is ringing, the Symposium TAPI Service Provider fails.

Transferring Number not Displayed

On calls that are transferred, Meridian Link only presents the DN of the party performing the transfer when the transfer DN is also AST controlled by using internal feedback. If the transfer DN is not AST controlled, then Meridian Link does not present the DN of the party performing the transfer as the DN type field is *transfer/conference* and the DN is *NULL*.

Blind Transfer Fails

A blind transfer to CDN only works if a patch is applied. Call Customer Support for additional information.

Caller ID not Reported

When controlling a DN that is attempting to bring in a conference, *Unknown* is displayed instead of the person initiating the conference. Meridian Link does not report the caller ID to the called party of a conference (or transfer, refer to the “Transferring Number not Displayed” section). The Other device DN type is reported as *transfer/conference* and the conference DN is *NULL*. However, when the conference is complete, the correct calling information is received.

Call Status Messages sent by Meridian Link

When selecting only the “Outbound Call Processing” on the *Host* dialog box and, consequently, disabling inbound call processing, the Meridian Link still sends call status. However, generally, the “Inbound Call Processing” option is selected.

Called Number not Displayed when Routed to CDN

Meridian Link presents the calling number, but not the called number when the incoming call is transferred or forwarded to the CDN. For example, 2495 calls 2491. 2491 forwards to a CDN (2121). The RouteRequest message shows the calling number (2495) but not the called number (2491).

Park Not Supported

Meridian Link does not support Park. There are no park or unpark StatusChange messages. When a park is performed manually at the set, the call is reported as ONHOLD and never goes off hold. If the call is not picked up, a new call is presented in addition to the onhold call. The call ID is the same as the ID of the held call.

Enhanced ISDN Progress Messages for Outbound Calls

Meridian Link provides additional network call progress information for outbound calls provided in X11 Release 22. Meridian Link 5 forwards all of the following ISDN- provided cause IE values where calls are not completed:

1 - Unallocated (unassigned) number	3 - No route to destination
17 - User busy	18 - no user responding
22- number changed	27 - destination out of order
28 - Invalid number format (address incomplete)	34 - no circuit/channel available
38 - Network out of order	41 - Temporary failure
42 - Switch equipment congestion	127 - Interworking, unspecified with inband information available

Meridian 1 based predictive dialer or outdialing applications of all kinds are able to process more calls in less time, by interpreting the called party status. Invalid numbers can also be compiled and manually updated by agents, in order to increase the accuracy of the customer's database.

IVR Messages

The following sections include the IVR normal messages and the IVR error messages.

Normal Messages

Note: The information presented here is for reference purposes only. Refer to your IVR User Documentation for complete message information.

The following table describes informative messages displayed during normal operation:

Table 2 Normal IVR Messages

<i>num</i>	<i>Message Text</i>	<i>Description</i>
M01	Operating in off-line auto transfer mode	IVR module could not register with the TAPI Service Provider so all incoming requests from user cells will immediately return without transferring data.
M02	IVR module registered successfully and Assoc: <value>	IVR module has established a connection to the TAPI Service Provider and stands ready to transfer data. The Association ID is a unique number generated by the TAPI Service Provider to represent this connection.
M03	Read queue opened successfully	IVR module opened the message queue through which it will receive data from the user cells.
M04	Write queue opened successfully	IVR module opened the message queue through which it will send data to the user cells.
M05	IVR module is not registered - transferring call with data: <data>	IVR module received a request from a user cell and is in off-line auto transfer mode (see above). It will immediately return control to the user cell.
M06	Automatically transferring the call	Due to an unexpected problem in communicating with the TAPI Service Provider, control returns to user cell.
M07	Sent data: <string> with MsgRefId: <value>	Data incoming from a user cell has been successfully sent to the TAPI Service Provider.
M08	Retry successful - IVR module is now registered with IVR driver	Previous attempts to establish communication with the TAPI Service Provider had failed, the IVR module was finally able to establish communication.

Normal Messages, cont.

<i>num</i>	<i>Message Text</i>	<i>Description</i>
M09	Socket successfully closed	Termination procedures for the IVR module involve closing the socket connection to the TAPI Service Provider. This was completed successfully.
M10	Closing connection and entering off-line auto transfer mode	Unexpected socket problems interrupted data transfer to the TAPI Service Provider. IVR module will attempt to re-establish communications.
M11	Read queue successfully closed	The IVR module was successful in its attempt to close the message queue from which it receives data from the user cells.
M12	Write queue successfully closed	The IVR module was successful in its attempt to close the message queue through which it sends data to the user cells.
M13	Processing Response of MsgRefId: <value>	The TAPI Service Provider had received data from the IVR module and is now sending a message back indicating that it successfully processed the data. The IVR module will return control to the user cell from which the data originated.
M14	with the following wait time: <value>	This message follows the above message #M13. The wait time is the number of seconds elapsed from the point at which the IVR module sent the data to the TAPI Service Provider until the point when it received a response message from TAPI Service Provider.
M15	Successfully sent response to user cell	The IVR module properly returned control to the user cell that originally sent the current data.
M16	Timed out call with MsgRefId <value> - sent transfer message	The number seconds elapsed since the IVR module sent data to the TAPI Service Provider is greater than the timeout value specified in the config file. The IVR module will return control to the user cell without waiting for response from the driver.
M17	Recycling message queues	The IVR module detected a problem with the message queue communications. It will attempt to close and reopen both message queues.
M18	Recycling - Read queue successfully closed	While recycling the message queues, IVR module successfully closed the read queue.
M19	Recycling - Write queue successfully closed	While recycling the message queues, IVR module successfully closed the write queue.
M20	Recycling - Read queue opened successfully	While recycling the message queues, IVR module successfully opened the read queue.
M21	Recycling - Write queue opened successfully	While recycling the message queues, IVR module successfully opened the write queue.
M22	Retrying message send	IVR module detected problems in message queue communications and successfully recycled the message queues. It will now attempt to resend the message that originally caused the recycle.
M23	Successfully read the following configuration parameters:	IVR module is moving through its startup phase during which it read configuration options.
M24	Timeout is: <value>	Timeout value read during startup phase.
M25	HomeHost is: <string>	Local host name read during startup phase.

Normal Messages, cont.

<i>num</i>	<i>Message Text</i>	<i>Description</i>
M26	ExternHost is: <string>	TAPI Service Provider host name read during startup phase
M27	Port is: <value>	Port number on TAPI Service Provider host through which IVR module will establish socket communication
M28	NWCallIDFlag is: <value>	Network Call ID status read during startup phase. 1 indicates yes and 0 indicates no.
M29	LogDuration is: <value>	Number of days log files will remain on the system read during the startup phase.
M30	DN count is: <value>	Number of DNs to be monitored read during the startup phase.
M31	DN to be monitored: <value>	One DN to be monitored in the list read during the startup phase.

Error Messages

Note: The information presented here is for reference purposes only. Refer to your IVR User Documentation for complete error message information.

The following table describes messages encountered during error conditions of varying severity:

Table 3 IVR Error Messages

<i>msg</i>	<i>Error Message</i>	<i>Description</i>
E01	Configuration Error -- Could not open configuration file	IVR module either could not find or does not have the read permission to open the configuration file named IVRmodule.cfg.
E02	Problems in reading configuration information - exiting	The IVR module encountered problems while reading the config file IVRmodule.cfg. These may be problems with syntax. Refer to the section on configuration for more information.
E03	Problem in initializing control block.	Initialization failed and the IVR module will quit. See associated error messages for more details.
E04	Problem in opening socket -- Retrying	The IVR module could not establish socket communications with the TAPI Service Provider and will make another attempt.
E05	Unable to open socket connection	The IVR module could not establish socket communications with the TAPI Service Provider despite repeated attempts. Contact support personnel for the IVR driver to be sure the software is running and there are no system problems on the TAPI Service Provider that would impede socket communication.
E06	Unable to register with IVR driver over socket -- Retrying	The IVR module successfully connected to the designated socket on the TAPI Service Provider but could not register with the IVR driver software, which manages the data transfer. It will make additional attempts to register until it reaches the maximum number of retries.

Error Messages, cont.

<i>msg</i>	<i>Error Message</i>	<i>Description</i>
E07	Unable to register with IVR driver over socket	Repeated attempts to register (see above) were not successful and have exceeded max retries. Contact support personnel for the IVR driver to be sure it is functioning properly on the TAPI Service Provider.
E08	Unable to open read queue	The IVR module was unable to open the message queue through which it would send data to the user cells. Contact your system administrator.
E09	Unable to open write queue	The IVR module was unable to open the message queue through which it would receive data from the user cells. Contact your system administrator
E10	Problem in transferring call	The IVR module was unable to send a response to the user cell. This is typically due to message queue problems. Contact system administrator.
E11	Problem in sending data with MsgRefId:	The IVR module was unable to send data over the socket to the TAPI Service Provider. Contact your system administrator or support personnel.
E12	System Error	The IVR module encountered a system related error in processing. Refer to accompanying text for more information.
E13	EINVAL error in message queue read	This error indicates that the read queue was invalid when the IVR module attempted to read data. Contact system administrator or support staff.
E14	EACCES error in message queue read	This error indicates that the IVR module process does not have the proper access permission to read from the read queue. Contact your system administrator or IVR module support personnel.
E15	EIDRM error in message queue read	This error indicates that the read queue identifier has been removed from the system. Contact system administrator or support personnel.
E16	E2BIG error in message queue read	The IVR module attempted to read a message that was too big for the message queue. Contact system administrator or support personnel.
E17	Unable to recycle message queues - quitting	Following message queue problems the IVR module attempted to close and reopen the message queues. These attempts were unsuccessful and the IVR module is terminating itself. Contact your system administrator.
E18	Retry failed - IVR module could not register with IVR driver	The IVR module was not registered with the IVR driver and attempted to register. This attempt was unsuccessful, which indicates that the condition that initially prevented or terminated registration is still present. Contact support personnel for the IVR driver to be sure it is functioning properly on the TAPI Service Provider.
E19	Problem in reading received socket message - retrying	IVR module detected that a message was received over the socket from the TAPI Service Provider but could not read the information from the socket. It will make another attempt to read the socket message.

Error Messages, cont.

<i>msg</i>	<i>Error Message</i>	<i>Description</i>
E20	Unable to read received socket message	IVR module detected but could not read a socket message (see above) despite repeated attempts. Typically this will be followed by errors indicating that the socket is bad and the IVR module will attempt to recycle the socket. Should this recycle attempt not succeed or this error reoccurs contact your system administrator.
E21	Problem in decoding socket message header	The IVR module successfully read a socket message but could not interpret it properly. Contact IVR driver support personnel to be sure the IVR driver is functioning properly or contact your system administrator to be sure that the message queues are working correctly.
E22	IVR driver has terminated the socket connection.	The IVR module successfully received a message from the IVR driver indicating that it is terminating the registration between the IVR driver and the IVR module. The IVR module sent an acknowledgment message and will enter off-line auto transfer mode.
E23	Unable to send host disconnect response message.	The IVR module received a host disconnect message (see above) and attempted to send an acknowledgment message. This attempt failed.
E24	Problem in closing socket after host disconnected	The IVR module received a host disconnect message (see above) and encountered problems afterward while attempting to close the socket. Contact your system administrator.
E25	Received socket message has an unknown type	The IVR module successfully read a socket message and decoded the message header. It did not recognize the type field in the socket message. Contact IVR driver support personnel.
E26	Problem in accessing socket	The IVR module encountered an error while trying to access the socket connection to the IVR driver. It will close the socket, enter off-line auto transfer mode and attempt to re-register with the IVR driver following a short delay.
E27	Problem in closing socket following failed socket read	The IVR module encountered socket problems (see above) and attempted to close the socket resulting in an error. Contact system admin.
E28	Problem in closing socket during exit routine	While attempting to clean up resources during the termination procedure, the IVR module encountered problems closing the socket. Contact your system administrator.
E29	Problem in closing read queue during exit routine	While attempting to clean up resources during the termination procedure, the IVR module encountered problems in closing the read queue. Contact your system administrator.
E30	Problem in closing write queue during exit routine	While attempting to clean up resources during the termination procedure, the IVR module encountered problems in closing the write queue. Contact your system administrator.

Error Messages, cont.

<i>msg</i>	<i>Error Message</i>	<i>Description</i>
E31	Initialize routine failed while initializing control block	The IVR module encountered problems while establishing values for the data block, which maintains information pertaining to the socket connection to the TAPI Service Provider. Contact a system administrator or programmer for assistance.
E32	Initialize routine failed while initializing far end connection	The IVR module encountered problems while establishing preliminary connection to the TAPI Service Provider. Check the IVRmodule.cfg file to be sure the externhost name is correct. Also check the /etc/hosts file to be sure the externhost name is associated with the correct IP address. If problems persist, contact support personnel.
E33	Problem in creating list of DNs to be monitored	The IVR module previously read in the list of DNs to be monitored and was attempting to encode the list into a format compatible with the IVR registration message. This process failed. Contact IVR module support personnel.
E34	Problem in creating IVR registration message	The IVR module failed while encoding registration information into the proper format required by the TAPI Service Provider. Contact IVR module support personnel.
E35	Problem in sending registration message	The IVR module failed while attempting to send the registration message to the TAPI Service Provider. Contact your system administrator or IVR module support personnel.
E36	Received no response to registration message from IVR driver	The IVR module successfully sent its registration message to the TAPI Service Provider but received no response. Check with TAPI Service Provider support personnel to be sure the IVR driver is running and the TAPI Service Provider is configured properly.
E37	Problem in receiving registration response	The IVR module successfully sent its registration message, detected a response but encountered errors while trying to read the response. Contact your system administrator or IVR module support personnel.
E38	Problem in creating caller data message	The IVR module received caller data from a user cell and was attempting to encode this data into a format required by the TAPI Service Provider. This process failed. Contact IVR module support.
E39	Problem in sending user data message	The IVR received caller data from a user cell and successfully encoded it into a message intended for the TAPI Service Provider. It encountered problems while attempting to send this message to the TAPI Service Provider. Contact your system administrator or IVR module support personnel.
E40	Problem in enqueing user message	The IVR module successfully sent data to the TAPI Service Provider and encountered problems while attempting to store this data internally. Contact IVR module support personnel.

Error Messages, cont.

<i>msg</i>	<i>Error Message</i>	<i>Description</i>
E41	Problem in allocating linked list structure	The IVR module successfully sent data to the TAPI Service Provider and encountered problems while attempting to store this data internally. Contact IVR module support personnel.
E42	Unable to generate time value in call tracking queue	The IVR module successfully sent data to the TAPI Service Provider and encountered problems while attempting to store this data internally. Contact IVR module support personnel.
E43	Problem in creating IVR Disconnect message	The IVR module failed while encoding disconnect information into the proper format required by the TAPI Service Provider. Contact IVR module support personnel.
E44	Problem in sending disconnect message - Retrying	The IVR module failed while attempting to send the disconnect message to the TAPI Service Provider. Contact your system administrator or IVR module support personnel.
E45	Problem in receiving disconnect response - Retrying	The IVR module failed to receive the expected response to the disconnect message sent to the TAPI Service Provider. It will make additional attempts until it reaches the maximum number of retries.
E46	Incorrect disconnect response received - Retrying	The IVR module received an erroneous response to the disconnect message sent to the TAPI Service Provider. It will make additional attempts until it reaches the maximum number of retries.
E47	Unable to transmit and receive disconnect messages - closing socket	Repeated problems with socket communications have caused the IVR module to discontinue its attempts to communicate with the TAPI Service Provider. This is most likely caused by shutdown procedures on the TAPI Service Provider in response to the disconnect request. If socket problems persist, contact your system administrator.
E48	Problem in closing socket following disconnect message problem	While attempting to clean up resources during the disconnect procedure the IVR module encountered problems closing the socket. Contact your system administrator.
E49	Unable to locate user data in the queue - this call may have timed out	While processing a response from the TAPI Service Provider regarding a specific call, the IVR module could not locate the associated data in its internal storage queue. This condition is usually caused by excessive delays in processing on the TAPI Service Provider. If the wait time for a specific call exceeds the number of seconds specified in the timeout parameter of the configuration file, the IVR module will automatically return control to the user cell instance that sent the data and remove the call from its internal storage queue.
E50	Error-Unable to generate time value in processing response	The IVR module was attempting to use the time function on the system to compute the wait time and it encountered problems. Contact your system administrator for assistance.

Error Messages, cont.

<i>msg</i>	<i>Error Message</i>	<i>Description</i>
E51	Problem in sending response back to user cell	The IVR module received a response from the TAPI Service Provider for a specific call and encountered problems while sending the necessary response to the user cell over the write queue. Contact your system administrator for assistance.
E52	Could not locate call with MsgRefId: <value> - queue is empty	The IVR module received a response from the TAPI Service Provider for a call for which it had no record stored internally. See description for E49 above.
E53	Could not find call with MsgRefId: <value> in the queue	See descriptions for E52 and E49 above.
E54	Problem in creating message queue	The IVR module encountered problems in creating a message queue. Contact system administrator
E55	Problem in setting message queue permissions	The IVR module successfully created a message queue but encountered problems in modifying its permission parameters. Contact system admin.
E56	Problem in cleaning up old log files before opening a new one	The IVR module encountered problems in logfile maintenance. Contact IVR module support staff.
E57	Problem in sending timeout message with MsgRefId: <value>	The IVR module encountered problems while sending a response over the write message queue to the user cell after a call exceeded the maximum wait time and timed out. Contact system admin.
E58	Problem in locating cause IE in processing status message	The IVR module expected to receive status info from the TAPI Service Provider and encountered problems in decoding the message. Contact TAPI Service Provider or IVR module support personnel.
E59	Cause value in status message unknown	The IVR module expected to receive status info from the TAPI Service Provider and encountered problems in decoding the message. Contact TAPI Service Provider or IVR module support personnel.
E60	Cause: message length is incorrect	The TAPI Service Provider returned a message from the IVR module unprocessed due to errors in message construction. Contact IVR module support personnel for assistance.
E61	Cause: mandatory IE is missing in message type	The TAPI Service Provider returned a message from the IVR module unprocessed due to errors in message construction. Contact IVR module support personnel for assistance.
E62	Cause: IVR name is already registered	The IVR module attempted to register with the TAPI Service Provider using a host name that is already associated with a prior registration. Check for multiple instances of IvModule running on your host or for multiple hosts using duplicate names. If problem persists contact IVR module support.
E63	Cause: no associations available - try later	The IVR module attempted to register with the TAPI Service Provider that is already serving its maximum number of client machines. The IVR module will function in off-line auto transfer mode and attempt to register periodically.

Error Messages, cont.

<i>msg</i>	<i>Error Message</i>	<i>Description</i>
E64	Cause: IVR not registered so no messages may be sent	The IVR module attempted to send messages to the TAPI Service Provider prior to successfully registering. If this problem persists, contact IVR module support personnel for assistance.
E65	Cause: This DN/port is already registered	The IVR module successfully sent registration information, which included a duplicate DN entered in the monitordn section of the IVRmodule.cfg file. Check your configuration file for errors. If problem persists, contact IVR module and TAPI Service Provider support personnel.
E66	Cause: Registration of this DN/port failed	The TAPI Service Provider received a DN in configuration options but could not access it for monitoring. Check the IVRmodule.cfg file for errors and check your switch for possible problems with the specific DN. If problem persists, contact IVR module or TAPI Service Provider support personnel.
E67	Cause: This DN/port has a bad format	The TAPI Service Provider received a DN in configuration options but encountered errors with its setup. Check the IVRmodule.cfg file for syntax errors and check the switch for possible problems with the specific DN. If problem persists, contact IVR module, TAPI Service Provider or switch support.
E68	Cause: This DN/port is not registered	The IVR module sent a user data message to the TAPI Service Provider referencing a DN that had not been previously registered with the TAPI Service Provider upon startup. Check the IVRmodule.cfg file for syntax errors. If problem persists, contact IVR module, TAPI Service Provider or switch support.
E69	Cause: Data transfer task is not responding to the IVR driver	The IVR driver is experiencing problems while attempting to transfer user data. Contact IVR driver support.
E70	Unknown cause value in cause IE	The IVR module expected to receive status info from the TAPI Service Provider and encountered problems in decoding the message. Contact TAPI Service Provider or IVR module support personnel.
E71	Problem in opening temp filename <string> in cleaning up log files	The IVR module encountered problems in logfile maintenance. Contact IVR module support staff.
E72	Problem in reading input file <string> in cleaning up log files	The IVR module encountered problems in logfile maintenance. Contact IVR module support staff.
E73	Recycling - Problem in closing read queue	While attempting to recycle the message queues, the IVR module encountered problems while closing the read queue. Contact your system administrator.
E74	Recycling - Problem in closing write queue	While attempting to recycle the message queues, the IVR module encountered problems while closing the write queue. Contact your system administrator.
E75	Recycling - Unable to open read queue	While attempting to recycle the message queues, the IVR module was unable to open the message queue through which it would send data to the user cells. Contact your system administrator.

Error Messages, cont.

<i>msg</i>	<i>Error Message</i>	<i>Description</i>
E76	Recycling - Unable to open write queue	While attempting to recycle the message queues, the IVR module was unable to open the message queue through which it would receive data from the user cells. Contact your system administrator.
E77	EINVAL error in message queue write	This error indicates that the write queue was invalid when the IVR module attempted to write data. Contact system administrator or support staff.
E78	EACCES error in message queue write	This error indicates that the IVR module process does not have the proper access permission to write to the write queue. Contact your system administrator or IVR module support personnel.
E79	EIDRM error in message queue write	This error indicates that the write queue identifier has been removed from the system. Contact system administrator or support personnel.
E80	E2BIG error in message queue write	The IVR module attempted to send a message that was too big for the message queue. Contact system administrator or support personnel.
E81	Configuration Error -- No command found	The IVR module encountered a missing command while processing configuration information in the IVRmodule.cfg file. Check the file for syntax errors. Refer to the section on IVR module setup and configuration for more information.
E82	Error in configuration	The IVR module encountered errors while processing configuration information in the IVRmodule.cfg file. Check file for syntax errors. Refer to the section on IVR module setup and configuration for more information.
E83	Configuration Error -- No Port Value specified	The IVR module found no port value while processing configuration information in the IVRmodule.cfg file. Check the file for syntax errors. Refer to the section on IVR module setup and configuration for more information.
E84	Configuration Error -- No Home Host specified	The IVR module found no local host name while processing configuration information in the IVRmodule.cfg file. Check the file for syntax errors. Refer to the section on IVR module setup and configuration for more information.
E85	Configuration Error -- No External Host specified	The IVR module found no external host name while processing configuration information in the IVRmodule.cfg file. Check the file for syntax errors. Refer to the section on IVR module setup and configuration for more information.
E86	IVR module encountered configuration errors	The IVR module encountered errors while processing configuration information in the IVRmodule.cfg file. Check file for syntax errors. Refer to the section on IVR module setup and configuration for more information.

Error Messages, cont.

<i>msg</i>	<i>Error Message</i>	<i>Description</i>
E87	Configuration Error -- Input line too long in configuration file	The IVR module encountered errors while processing configuration information in the IVRmodule.cfg file. Check file for syntax errors. Refer to the section on IVR module setup and configuration for more information.
E88	Configuration Error -- Too few words on input line in configuration file	The IVR module encountered errors while processing configuration information in the IVRmodule.cfg file. Check file for syntax errors. Refer to the section on IVR module setup and configuration for more information.
E89	Configuration Error -- Too many words on input line in configuration file	The IVR module encountered errors while processing configuration information in the IVRmodule.cfg file. Check file for syntax errors. Refer to the section on IVR module setup and configuration for more information.
E90	Configuration Error -- Expected digit and got character in configuration file	The IVR module encountered errors while processing configuration information in the IVRmodule.cfg file. Check file for syntax errors. Refer to the section on IVR module setup and configuration for more information.
E91	Configuration Error -- value exceeds maximum in configuration file	The IVR module encountered errors while processing configuration information in the IVRmodule.cfg file. Check file for syntax errors. Refer to the section on IVR module setup and configuration for more information.
E92	Configuration Error -- value too small in configuration file	The IVR module encountered errors while processing configuration information in the IVRmodule.cfg file. Check file for syntax errors. Refer to the section on IVR module setup and configuration for more information.

Removing the Symposium TAPI Service Provider Software

If it becomes necessary to remove the Symposium TAPI Service Provider software, an Un-Install program is provided. Running the *Un-Install* program deletes the database files.

Note: Do not remove the Symposium TAPI Service Provider software using the **Add/Remove** program on the Control Panel.

To Remove the Symposium TAPI Service Provider Software:

1. Access the *Select Installation* Dialog Box:
 - a. Log on to the Windows NT Server.
 - b. Insert the Symposium TAPI Service Provider CD ROM into the CD ROM driver.
 - c. Run the **Setup.exe** program.
Select **Run** from the Start menu to display the *Run* dialog box.
Type the CD ROM drive\setup.exe
For example, *E:\setup.exe*

Note: We do not recommend that you install the Symposium TAPI Service Provider software using the **Add/Remove** program on the Control Panel. Using the Add/Remove program displays a warning to close all open windows (including the Control Panel) before continuing with the installation.

Or

From the *Windows NT Explorer* window, click on the CD ROM drive to display the folders and files.

Double-click on the **Setup.exe** file.

The Meridian TAPI Service Provider installation process begins.

The *Select Components* dialog box is displayed.

2. Click on the **Uninstall** option. The Symposium **TAPI Service Provider** software files are removed. The *Remove Programs from Your Computer* information box displays the files as they are deleted.
3. Click on the **OK** button.

Appendix A Additional User Information

Customer Support for the Symposium TAPI Service Provider

If you have difficulty when using the Nortel Symposium TAPI Service Provider for Meridian 1 Release 2, help is available in different formats. This document provides troubleshooting tips in Chapter 7. For telephone support in the United States and Canada, contact your Nortel support personnel listed below:

For Customer Support

United States and Canada:
(800) 527-0797

For Developer Support

United States and Canada:
(800) NT4CTIO

For New Product Information:

(800) 4-NORTEL
8:00 a.m. - 6:00 p.m.
Monday -Friday

For support outside the United States and Canada, contact your CTS Representative.

To resolve a problem properly, Nortel field support personnel may require the following information:

1. A description of the problem, sufficiently detailed to help Nortel reproduce the problem. Include information such as, all error messages displayed on the screen and telephone, what was happening before and after the problem, and what worked or stopped working after the problem.
2. The software version number on the Symposium TAPI Service Provider for Meridian 1 Release 2.
3. Printouts of certain switch datafill. On Meridian 1, use LD 20 to print the TNB of the set. Ask your switch administrator for these.
4. The switch software release number. For the Meridian 1, indicate the X11 Rel. 19, 20, and so forth.
5. The Meridian Link software number.
6. Run the Logger Troubleshooting tool to capture a log file of the problem, if requested to by support personnel.
7. Know if your site has Symposium Call Center Server (SCCS).
8. Know if your site has IVR.
9. Know if you are using Remote TAPI Service Provider.

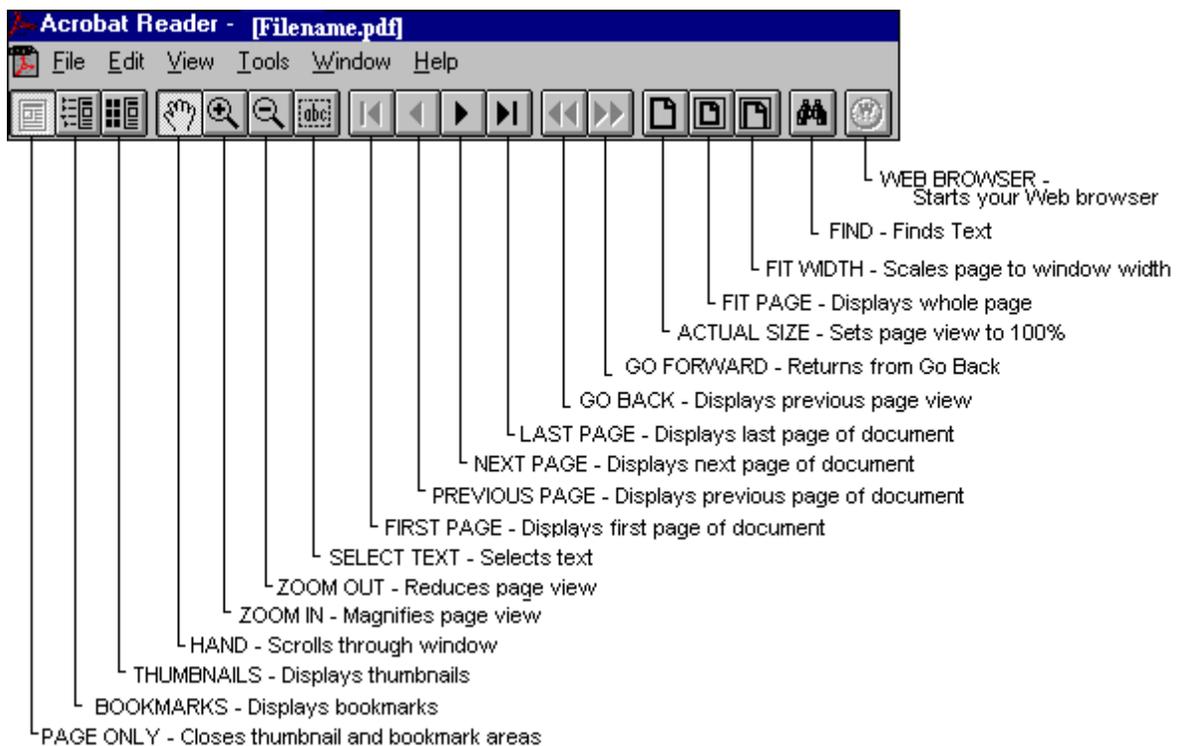
Overview of the Adobe Acrobat Reader

The User documents for Symposium TAPI Service Provider are provided electronically as online documents. These documents are contained on the CD ROM in the **Docs** directory.

The Adobe Acrobat Reader must be installed to access the online documentation. After installing the Adobe Acrobat Reader, double-clicking on the .PDF file opens the online document in the *Acrobat Reader* window. The Adobe Acrobat Reader allows you to view, search, and print this document.

Adobe Acrobat Reader Window

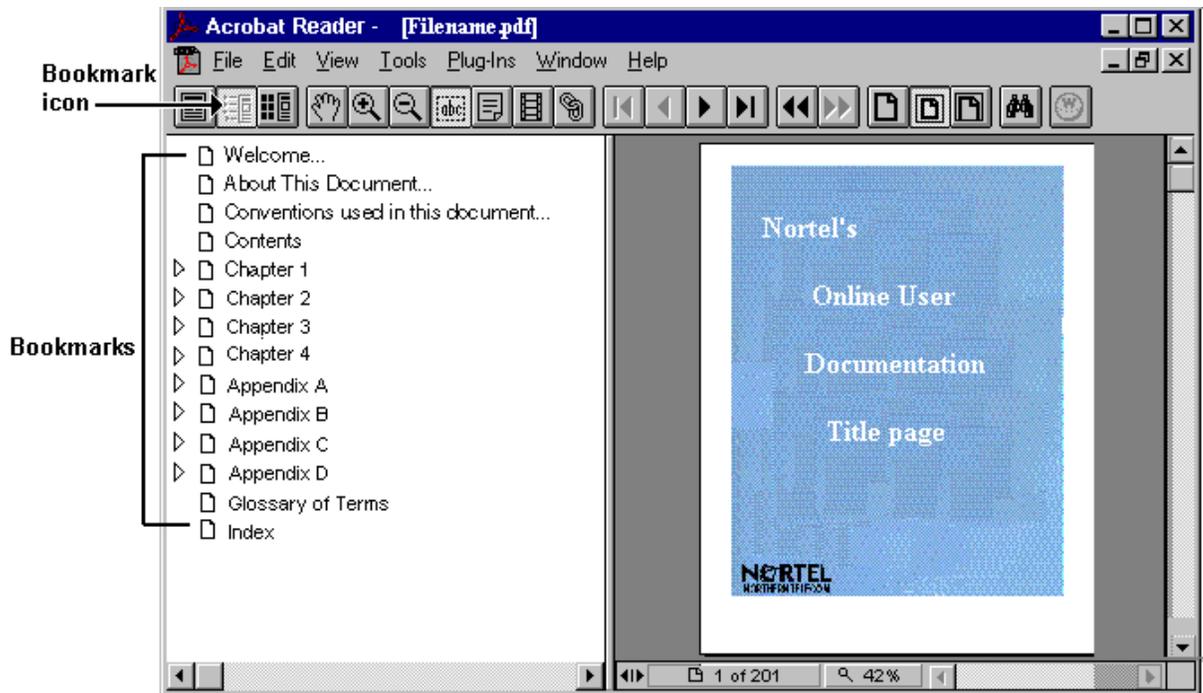
The *Acrobat Reader* window contains menus, tools, and buttons. The Menu bar of the *Acrobat Reader* window displays the **H**elp menu. The **H**elp menu contains important information on how to view and print the document. The Toolbar on the *Acrobat Reader* window provides tools for working with the documents. Select a tool by clicking the icon.



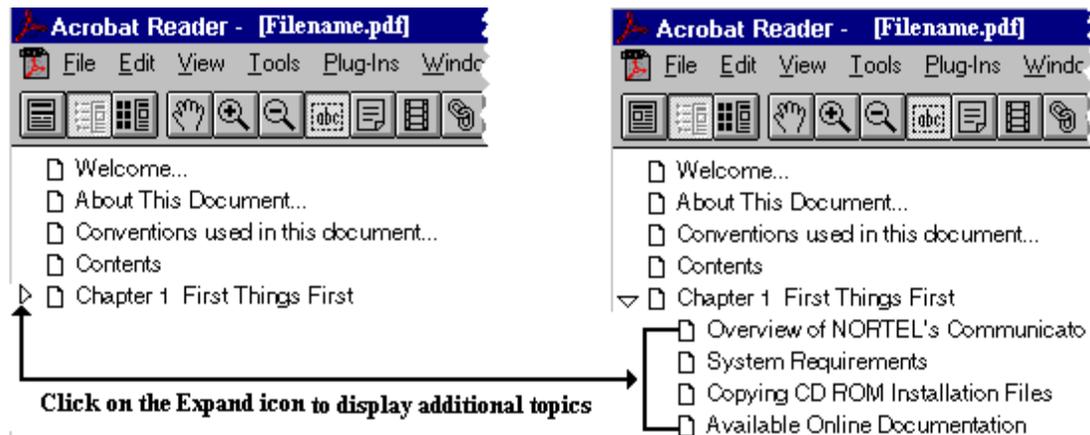
Using Bookmarks on the Acrobat Reader Window

The online documents contain bookmarks to assist you in finding information. Selecting the Bookmark button  provides an automated table of contents.

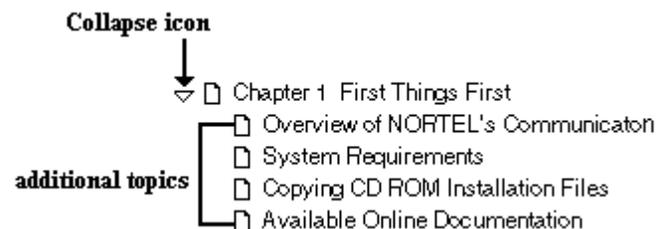
The Bookmarks are displayed on the left of the window.



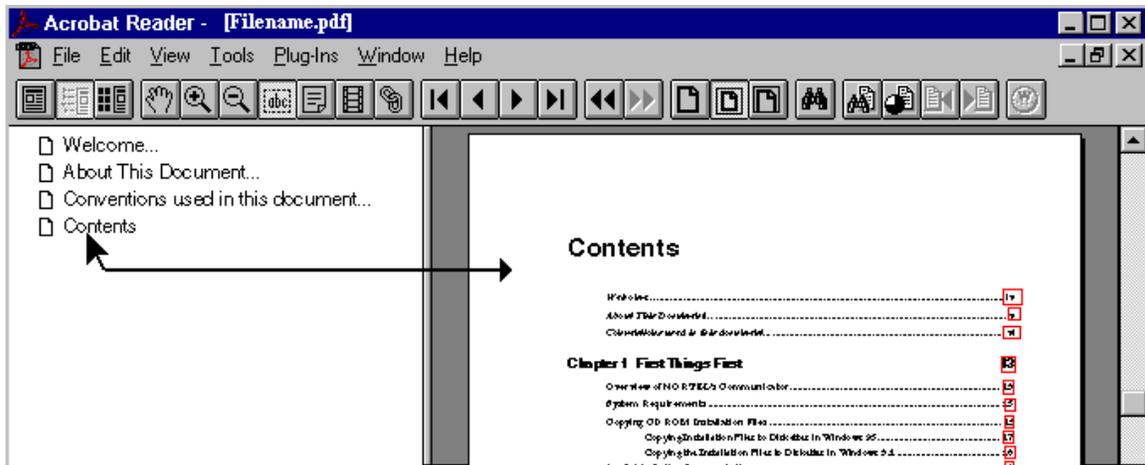
Clicking on the **Expand** icon  located to the left of the bookmark displays additional topics in a tree-view.



When the additional topics are displayed, the **Expand** icon changes to the **Collapse** icon.

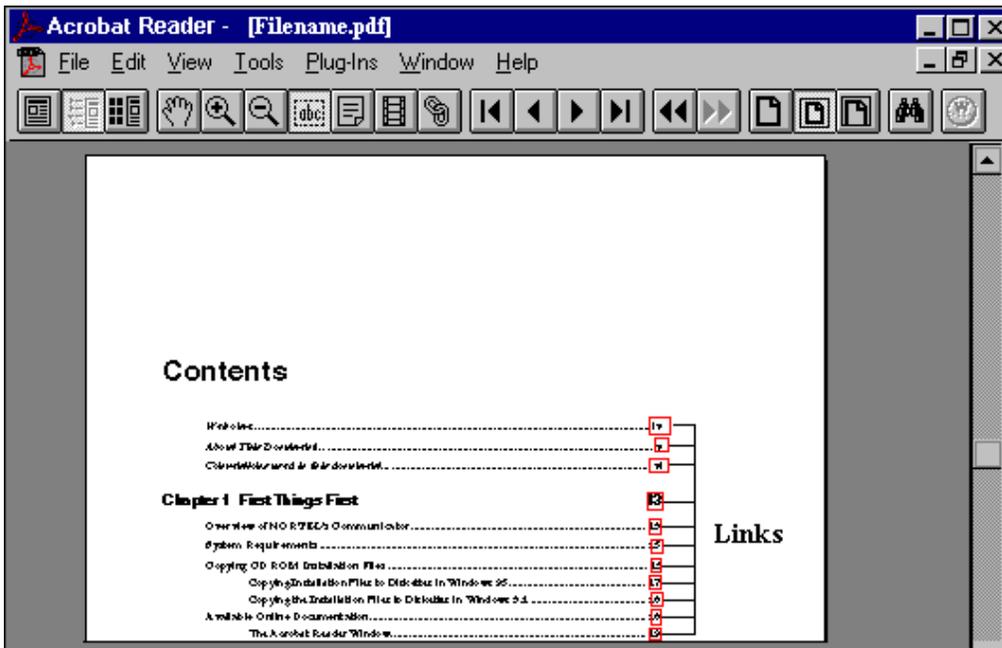


Clicking on the **Collapse** icon  removes the additional topics.
Clicking on a Bookmark takes you directly to the page containing the information.



Using Links on the Adobe Acrobat Window

The Table of Contents, Index, and certain words or phrases provide direct links to the page associated with the entries. Links are **red** boxes that enclose a page number or word. Clicking on the red box displays the page that contains the information.



Also,, certain pages reference additional information. When these references are enclosed in a **red** box, clicking in the box displays the referenced page or document.

Clicking on the **Back** button  displays the previous page.

Appendix B Configuration Files

This Appendix provides sample printouts of a Meridian 1 Option 61 PBX equipped with X11 Release 20 software. The following examples show how the system parameters should look when configuration is complete. You may choose to reference these printouts when configuring Meridian 1 to support the Symposium TAPI Service Provider for Meridian 1.

Defining the ESDI/MSDL

After defining the MSDL (Direct Connect Link) and VAS ID as specified in the “Meridian 1 configuration for Meridian Link/CCR” section of the *Meridian Link/Customer Controlled Routing Installation and Upgrade Guide* (553-3202-210), your configuration record and Customer Data Block should look similar to the example below.

The example below shows a sample printout of a Meridian 1 Option 61 Configuration record (LD 17). LD 22 is used to print out the configuration record.

Pay particular attention to the following prompts: AML 7 and VSID 7.

```
>LD 22
PLEASE WAIT - LOADING FROM DISK
PT2000
REQ  PRT
TYPE CFN
ADAN  HDK 0
      NUMD 2
      FTYP 3.5S
ADAN  TTY 0
      CTYP XS DI
      DNUM 0
      DES
      USER MTC
      XSM YES
      TTYLOG 0
ADAN  TTY 1
      CTYP XS DI
      DNUM 1
      DES
      USER MTC SCH
      XSM NO
      TTYLOG 0
ADAN  TTY 2
      CTYP XS DI
      DNUM 2
      DES
      USER MTC TRF SCH
      XSM NO
      TTYLOG 0
ADAN  TTY 3
      CTYP XS DI
      DNUM 3
      DES
```

```

USER MTC TRF SCH
XSM NO
TTYLOG 0
ADAN TTY 8
CTYP XSDI
DNUM 8
DES HSL
USER HSL
XSM NO
ADAN TTY 9
CTYP XSDI
DNUM 9
DES ACD
USER ACD
CUST 00
SSUP NO
APRT NO
XSM NO
ADAN AML 4
CTYP MSDL
DNUM 4
PORT 2
DES MERMAIL
BPS 9600
PARM RS232 DCE
IADR 003
RADR 001
T1 10
T2 010
N1 128
N2 08
K 7
PAGE 001
ADAN AML 7 ←
CTYP ESDI
DNUM 7
DES MERIDIAN_LINK
BPS 19200
CLOK INT
IADR 003
RADR 001
T1 04
T2 010
T3 010
N1 128
N2 08
K 7
RXMT 05
CRC 10
ORUR 005
ABOR 005
ADAN DCH 18
CTYP MSDL
DNUM 4
PORT 0
DES ATT
USR PRI
DCHL 18
OTBF 32
PARM RS422 DTE
DRAT 64KC
CLOK EXT
IFC ESS5
SIDE USR
CNEG 1
RLS ID 1
RCAP

```

```

MBGA NO
T200 3
T203 10
N200 3
N201 260
K 7
ADAN DCH 23
CTYP MSDL
DNUM 4
PAGE 002
PORT 1
DES DCHISDN
USR PRI
DCHL 23
OTBF 32
PARM RS422 DTE
DRAT 64KC
CLOK EXT
IFC SL1
SIDE USR
CNEG 1
RLS ID 19
RCAP ND2 NCT
MBGA NO
T200 3
T203 10
N200 3
N201 260
K 7
PARM
LPIB 96
HPIB 100
500B 500
SL1B 160
NCR 500
MGCR NULL
CSQI 020
CSQO 020
NCPU 2
CFWS NO
PCML MU
ALRM YES
ERRM ERR XBUG AUD
DTRB 100
TMRK 128
FCDR OLD
PCDR YES
CLID YES
DUR5 NO
MLDN YES
MARP YES
FRPT NEFR
DCUS 1
MSCL 10
PMSI
MANU PMS1
PMCR 60
PORT NONE
NDIS 20
OCAC NO
MTRO MR
CEQU
MPED 8D
TERM
REMO
TERD 024 025
REMD

```

```

TERQ 002 003
REMQ
SUPL 004 N032
XCT 000 016
PAGE 003
TDS * 000 * 016
CONF * 001 * 017
MFSD * 000 * 016
DLOP NUM DCH FRM LCMT YALM TRSH
TRK 008 24 D3 AMI DG2 00
    009 24 D3 AMI DG2 00
    020 24 D3 AMI DG2 00
    021 24 D3 AMI DG2 00
PRI 018 23 ESF B8S FDL 00
    023 23 ESF B8S FDL 00
MISP 010
EXT0 0 NIL 3PE
EXT0 1 NIL NIL
EXT0 2 NIL NIL
EXT0 3 NIL NIL
EXT0 4 NIL NIL
EXT1 0 NIL 3PE
EXT1 1 NIL NIL
EXT1 2 NIL NIL
EXT1 3 NIL NIL
EXT1 4 NIL NIL
MTYP 4M
SMEM NO
OVLY
SID 350
BKGD
PBXH X
TODR 00
DROL 035 044
CACH 10
PRTY
MULTI_USER ON
VAS
VSID 04
DLOP
AML 04
    SECU NO
    INTL 0001
    MCNT 9999
    CONF DIR
VSID 06
DLOP
VSID 07 ←
DLOP
AML 07
    SECU YES
    INTL 0004
    MCNT 0400
    CONF DIR
VSID 11
DLOP
AML 11
    SECU NO
    INTL 0001
    MCNT 9999
    CONF DIR
ATRN
CODE 0
SOLR 12
ROLR +45.00
PAGE 004
TOLR -45.00

```

```

AGCD NO
VOLR NO
HRLR +42.00
HTLR -44.00
ALARM
  FMT_OUTPUT : OFF
  AF_STATUS  : OFF
  FILTER     ENTRIES SUMMARY
  TRIGGER    SEVERITY  SUPPRESS  ESCALATE
  NO ENTRIES.
  EXCEPTION  ENTRIES SUMMARY
  TRIGGER
  NO ENTRIES.

```

Identifying VAS ID and defining status message groups

The example below shows a sample printout of a Customer Data Block (LD 15) after you have configured the VAS ID and defined the status Message Groups.

Note: Status Message Group 1 must be used for the TAPI Service Provider. LD 21 is used to print out the Customer Data Block. Pay particular attention to the prompt (VSID 7).

The TAPI Service Provider uses status message group 1 only (which is not defined in LD 15). Status message groups 2-15 (GRP2 to GRP15) are not used with the TAPI Service Provider.

```

>LD 21
PLEASE WAIT - LOADING FROM DISK
PT1000
REQ  PRT
TYPE CDB
CUST 0
TYPE CDB
CUST 00
DLDN NO
LDN0 2345
LDA0
LDA1
LDA2
LDA3
LDA4
LDA5
DGRP 0
IRNG NO
PKND 1
NIT1
TIM1
NIT2
TIM2
NIT3
TIM3
NIT4
TIM4
SPRE 4
ATDN 0
NCOS 0
OPT  LOA CTD ICI SYD
      XTG XDP XLF CFO
      MCI MWUD ROX CPA IHD
      DSX LRA HTU DNX
      COP XBL SBD DBA
      RTR RTD HVD CFRD AHD REA
      BLA RND BIXA BIND

```

```

      FKA
      PVCD TTAD XLDN
      VOBD
ACCD OVF OVF OVF ATN
CTVN OVF OVF OVF ATN
MBNR OVF OVF OVF ATN
CTRC OVF NAP OVF NAP
CLDN NAP OVF NAP NAP
NINV OVF OVF OVF ATN
NITR OVF OVF OVF ATN
NRES OVF OVF OVF ATN
NBLK OVF OVF OVF ATN
UBRI OVF NAP NAP NAP
RCLE ATN OVF ATN ATN
ANAT 444
ANLD 3400
RTIM 30 30 30
ATIM 0
ICI 00
ICI 01
ICI 02
ICI 03
ICI 04
ICI 05
ICI 06
ICI 07
ICI 08
ICI 09
IMS YES
IMA YES
  APL NONE
PAGE 002
UST NO
  APL NONE
UMG NO
  APL NONE
FLSH 45
RALL NO
CDTO 14
IFLS NO
MHLD NO
CNFD 1
TGLD 2
DISD 3
CCDO NO
RGNA STD STD
AOCS DIS ATN
RCY1 06
RCY2 04
ACNS NO
AFCO NO
CHLN 0
PREO 0
FCAF NO
FNAD FDN
FNAT FDN
FNAL FDN
CFN0 4
CFN1 4
CFN2 1
CFTA YES
DFN0 4
DFN1 4
DFN2 4
TRCL 0
PHDT 30
SRCD NONE

```

ATAC NONE
RTSA RSAD
IRFR NO
XRFR NO
CWUP NO
CWCL 0 0
CWTM 0 0
CWBZ NO NO
DNDL NO
DNDT ATT
DNDH NO
CCRS UNR
ECC1 UNR
ECC2 UNR
MDID YES
NDID YES
MWFB NO
MATT NO
SPVC 00
MUS NO
CONG OVFL
LLT OVF
DLT OVF
ODN0
ODN1
ODN2
ODN3
PAGE 003
ODN4
ODN5
ODN6
ODN7
ODN8
ODN9
ASTM 30
DIND 30
DIDT 14
LDTT 6
ADLD 0
BOTO 14
DBRC 60
NFCR YES
MAXT 30
IDCA YES
DCMX 30
EEST NO
STRL 1
STRG #
VSID 7 ←
GP02
GP03
GP04
GP05
GP06
GP07
GP08
GP09
GP10
GP11
GP12
GP13
GP14
GP15
AC2 NXX LOC
ISDN YES
PNI 1
MBG 0

```
BSGC 65535
HNPA 612
HNXX 932
HLOC 660
LSC
CNTP PDN
RCNT 5
ATRC NO
RANF
RAN1
RAN2
LA11
LA12
LA21
LA22
LA31
LA32
LA41
LA42
LA51
LA52
R2BN 00 00
PAGE 004
R2ED 00 00
NRWU 5
TAWU 0
TTBL 0
SCPL 0
ENS NO
ALDN
RECD NO
HWTT 0
VNR NO
NIT 8
PORT 0
STCB NO
MCDC NO
FOPT 14
```

Defining ACD groups in Automatic Call Distribution (LD 23) if required

After defining ACD groups as specified in the “Meridian 1 configuration for Meridian Link/CCR” chapter of the *Meridian Link/Customer Controlled Routing Installation and Upgrade Guide* (553-3202-210), your ACD DN printouts should look similar to the example below.

The example shows a sample printout of an ACD DN. LD 23 is used to print out the ACD DN. Pay particular attention to the following prompts: ISAP YES, VSID 7 (which match LD 17 and LD 15 VSID).

Note: Earlier Meridian 1 Software releases may show a prompt AST YES.

```
>LD 23
REQ PRT
TYPE ACD
CUST 0
ACDN 3800
TYPE ACD
CUST 0
ACDN 3800
MWC NO
DSAC NO
MAXP 5
```

```
SDNB NO
BSCW NO
ISAP YES ←
VSID 7 ←
RGAI NO
ACAA YES
FRRT
SRRT
NRRT
FROA NO
NCFW 7400
FNCF NO
FORC NO
SPCP NO
OBTN NO
CWTH 1
NCWL NO
BYTH 2
OVTH 2
TOFT NONE
HPQ NO
OCN NO
OVDN 7100
IFDN
OVBU LNK LNK LNK LNK
EMRT
MURT
RTPC NO
HOML YES
RDNA NO
ACNT
DAL NO
RPRT YES
RAGT 4
DURT 30
RSND 4
FCTH 20
CRQS 100
IVR NO
CWNT NONE
```

Configuring single-line telephones with associated set (AST) and Unsolicited Status Messages (USM) features

After defining single-line sets as specified in the “Meridian 1 configuration for Meridian Link/CCR” chapter of the *Meridian Link/Customer Controlled Routing Installation and Upgrade Guide* (553-3202-210), your printouts should look similar to the example below.

The example shows a sample printout of an analog ACD set configured using LD 10. LD 20 is used to print out the TNB. Pay particular attention to the following prompts: DN ____, AST YES, CLS C6A THFA and XHA, and IAPG 1.

If the analog telephone is an ACD set, the following additional prompts will appear in the printout: AACD YES, CLS AGTA and FTR ACD 3800 3812 AGN.

```
REQ: PRT
TYPE: TNB
TN 4 0 2 13
DATE
PAGE
DES
DES ACDALG
TN 004 0 02 13
TYPE 500
CDEN 4D
CUST 0
DN 1415 MARP ←
CPND
NAME Jenny Jacobs
XPLN 13
DISPLAY_FMT FIRST, LAST
AST YES ←
IAPG 1 ←
HUNT 7400
TGAR 0
LDN NO
NCOS 0
SGRP 0
RNPG 1
LNRS 16
XLST
SCI 0
CLS UNR DTN FBD XFA WTA THFA FNA HTD ONS ←
LPR XRD CWD SWD PUA MWD LPD XHA CCSD LNA TVD ←
CFTD SFD MRD C6A PDN CNID AUTU ←
ICDD CDMD EHTD MCTD
GPUD DPUD CFXA ARHD OVDD AGTA CLTA LDTD ASCD
CPFA CPTA
SHL ABDD CFHD
CWND USMD USRD
RCO 0
PLEV 02
SPID NONE
PRI 01
AACD YES
MLWU_LANG 0
FTR ACD 3800 3812
AGN
DATE 22-Apr-96
```

Configuring Multi-line telephones with associated set (AST) and Unsolicited Status Messages (USM) features

After defining multi-line sets as specified in the Meridian 1 configuration for Meridian Link/CCR” chapter of the *Meridian Link/Customer Controlled Routing Installation and Upgrade Guide* (553-3202-210), your printouts should look similar to the example below.

The example shows a sample printout of an M2616 ACD set configured using LD 11. LD 20 is used to print out the TNB. Pay particular attention to the following prompts: AST 00 01 (this allows TAPI Service Provider compliant applications to use Key 0 and Key 1 of the set to make and receive calls) and IAPG 1.

Note: The keys must be defined as either an In-Calls key or a Single Call Ringing DN (MADNs are not allowed). Each set must also be equipped with a transfer key and a Six Party Conference key.

If the M2616 telephone is an ACD set, the following additional prompts will appear in the printout: CLS AGN or SPV.

```
REQ: PRT
TYPE: TNB
TN 4 0 4 5
DATE
PAGE
DES
DES L4JI
TN 004 0 04 05
TYPE 2616
CDEN 8D
CUST 0
AOM 1
FDN
TGAR 0
LDN NO
NCOS 0
SGRP 0
RNPG 1
SCI 0
SSU 0000
LNRS 16
XLST
CLS UNR FBD WTA LPR PUA MTA FND HTD ADD HFA
MWD AAD IMD XHD IRD NID OLD VCE DRG1
POD DSX VMD CMSD CCSD SWD LNA CNDA
CFTA SFD MRD PDN DDV CNID
ICDD CDMD MCTD AUTU
GPUD DPUD DNDA CFXD ARHD FITA CNTD CLTA ASCD CPFA CPTA CFHD
USMD USRD

ENG
EFD
HUNT 000
EHT
LHK 0
PLEV 02
SPID 7108
AST 00 01 ←
IAPG 1 ←
ITNA NO
DGRP
PRI 01
MLWU_LANG 0
KEY 00 ACD 7100 7109
      SUPY ACID 7108 KEY 13
      01 SCR 1324     MARP
```

```
02 SCR 3095      MARP
03 TRN
04 CFW 16      612144443456
05 AO6
06 MSB
07
08
09 EMR
10 DSP
11
12 ASP
13 ASP
14 NRD
15
16 SCR 3600      MARP
17 SCR 3601      MARP
18 SCR 3602      MARP
19 SCR 3603      MARP
20 SCR 3604      MARP
21 SCR 3605      MARP
22 SCR 36551     MARP
23 SCR 365612    MARP
24 SCR 3657890   MARP
25
26
27 SCN 3476      MARP
28
29
30
31
32
33
34
35
36
37
DATE 22-Apr-98
```

Appendix C LD Configuration Files

This appendix provides an example of a configuration file, stored in ASCII text file after executing the overlay program. (Examples of the LD 20, LD 21 and LD 23 programs are included.) Errors may occur during the execution of an overlay program and end up in the text file. However, the configuration program ignores these errors and continues to the next line of the text. An error starts with the three letters "SCH" followed by a series of numbers specifying the error.

```
>LD 20
PT0000
REQ: PRT
TYPE: TNB
TN
CDEN
CUST
DATE
PAGE
DES

TN 000 0 00 00
TYPE DTR
CDEN 8D
DATE 3 APR 1993

TN 000 0 00 01
TYPE DTR
CDEN 8D
DATE 3 APR 1993

:
DES 9THFL
TN 004 0 00 06
TYPE 2616
CDEN 8D
CUST 0
AOM 0
FDN
TGAR 0
LDN NO
NCOS 0
SGRP 0
RNPG 0
SCI 0
SSU
LNRS 16
XLST
CLS UNR FBD WTA LPR MTD FND HTA ADD HFA
MWD AAD IMD XHD IRD NID OLD VCE DRG1
POD DSX VMD CMSD CCSD SWD LNA CNDA
CFTD SFD MRD PDN DDV CNID
ICDD CDMD LLCN MCTD AUTU
```

GPUD DPUD DNDD CFXA ARHD CLTD ASCD
 CPFA CPTA ABDD CFHD FICD NAID
 USMD USRD ULAD OCBP
 CPND_LANG ENG
 HUNT 000
 LHK 1
 PLEV 02
 AST 00 01
 IAPG 1
 ITNA NO
 DGRP
 MLWU_LANG 0
 DNDR 0
 KEY 00 SCR 4006 MARP
 CPND
 NAME Ron Young
 XPLN 10
 DISPLAY_FMT FIRST, LAST
 01 SCR 4106 MARP
 CPND
 NAME Ron Young
 XPLN 10
 DISPLAY_FMT FIRST, LAST
 02 TRN
 03 ADL 16
 04 CFW 16
 05 RGA
 06 AO6
 07
 08
 09
 10 PRK
 11
 12
 13
 14
 15
 DATE 21 FEB 1996
 :
 DES MMAGT6
 TN 010 0 00 10
 TYPE 2008
 CDEN 8D
 CUST 0
 KLS 1
 FDN
 TGAR 0
 LDN NO
 NCOS 0
 SGRP 0
 RNPG 0
 SCI 0
 SSU
 XLST
 CLS UNR FBD WTA LPR MTD FND HTD ADD
 MWD AAD IMA XHD IRD NID OLD VCE
 POD DSX VMA CMSD CCSD SWD LND CNDD
 CFTD SFD MRD PDN DDV CNID
 ICDD CDMD LLCN MCTD AUTU
 GPUD DPUD DNDD CFXA ARHD CNTD CLTD ASCD

CPFA CPTA ABDD CFHD FICD NAID
USMD USRD ULAD OCBD
HUNT
PLEV 02
SPID NONE
AST
IAPG 0
ITNA NO
DGRP
PRI 01
MLWU_LANG 0
DNDR 0
KEY 00 ACD 8888 7835
AGN
01 SCN 7805 MARP
02 MSB
03 NRD
04 RLS
05
06 TRN
07 AO3
DATE 6 NOV 1995

NACT
REQ: END

>LD 21
PT1000

REQ: RDB
SCH0099 RDB?
REQ: PRT
TYPE: RDB
CUST
SCH0274

CUST 0
ROUT
ACOD
TYPE RDB
CUST 00
DMOD
ROUT 0
TKTP TIE
ESN NO
CNVT NO
SAT NO
RCLS EXT
DTRK YES
DGTP DTI
ISDN YES
MODE NULL
IFC SL1
PNI 00000
NCNA YES
NCRD YES
TRO NO
CHTY ABCH

CTYP UKWN
INAC NO
ISAR NO
TGAR 0
DSEL VOD
PTYD DTT
AUTO NO
DNIS NO
DCDR NO
ICOG IAO
SRCH LIN
TRMB YES
STEP
ACOD 7920
TARG
BILN NO
OABS
INST
ANTK
SIGO STD
STYP SDAT
TIMR ICF 512
 OGF 512
 EOD 13952
 DSI 34944
 NRD 10112
 DDL 70
 ODT 4096
 RGV 640
 GRD 896
 SFB 3
 NRAG 30
 TFD 0
SST 5 0
NEDC ORG
FEDC ORG
CPDC NO
DLTN NO
HOLD 02 02 40
SEIZ 02 02
SVFL 02 02
DRNG NO
CDR NO

PAGE 002

MUS NO
MANO NO
FRL 0 0
FRL 1 0
FRL 2 0
FRL 3 0
FRL 4 0
FRL 5 0
FRL 6 0
FRL 7 0
OHQ NO
OHQT 00
CBQ NO
AUTH NO
TTBL 0

OHTD NO
PLEV 2
ALRM NO
ART 0
SGRP 0
:
TYPE RDB
CUST 00
DMOD
ROUT 52
TKTP FEX
SAT NO

PAGE 014

RCLS EXT
DTRK NO
ISDN NO
PTYP ACO
AUTO NO
DNIS NO
ICOG OGT
SRCH LIN
STEP
ACOD 7152
TARG
OABS
TIMR ICF 512
 OGF 512
 EOD 13952
 DSI 34944
 NRD 10112
 DDL 70
 ODT 4096
 RGV 640
 FLH 510
 GRD 896
 SFB 3
 TFD 0
 LEXT 100
SST 3 0
NEDC ETH
FEDC ETH
CPDC NO
SPCT IMM
HOLD 02 02 40
SEIZ 02 02
RGFL 02 02
RVSD 08 31
ILLR 02 02
CDR NO
MUS NO
MANO NO
EQAR NO
FRL 0 0
FRL 1 0
FRL 2 0
FRL 3 0
FRL 4 0
FRL 5 0

FRL 60
FRL 70
OHQ NO
OHQT 00
TTBL 0
OHTD NO
PLEV 2
ALRM NO
ART 0
SGRP 0

TYPE RDB
CUST 00
DMOD
ROUT 54
TKTP TIE
ESN NO

PAGE 015

CNVT NO
SAT NO
RCLS EXT
DTRK YES
DGTP PRI
ISDN YES
 MODE PRA
 IFC SL1
 PNI 03068
 NCNA YES
 NCRD NO
 CHTY BCH
 CTYP UKWN
 INAC NO
 ISAR NO
 TGAR 0
PTYP PRI
AUTO NO
DNIS NO
DCDR NO
ICOG IAO
SRCH LIN
TRMB YES
STEP
ACOD 8500
TARG
BILN NO
OABS
INST
ANTK
SIGO STD
TIMR ICF 512
 OGF 512
 EOD 13952
 NRD 10112
 DDL 70
 ODT 4096
 RGV 640
 GRD 896
 SFB 3
 NBS 2048

NBL 4096
NRAG 30
TFD 0
DRNG NO
CDR NO
MUS NO
EQAR NO
FRL 0 0
FRL 1 0
FRL 2 0
FRL 3 0
FRL 4 0
FRL 5 0
FRL 6 0
FRL 7 0
OHQ NO
OHQT 00
CBQ NO
AUTH NO
TTBL 0
PLEV 2

ALRM NO
ART 0
SGRP 0

REQ: END

>LD 23
ACD000
UDATA: 195675 0 PDATA: 189871 2
SCH5066

ACD DNS AVAIL: 75 USED: 25 TOT: 100
REQ PRT
TYPE CDN
CUST
SCH•0274
CUST 0
CDN
TYPE CDN
CUST 0
CDN 7600
FRRT
SRRT
FROA NO •
MURT
DFDN 7650
CEIL 2047
OVFL NO
TDNS NO
CNTL YES
VSID 5
HSID 5
CWTH 1
BYTH 30
OVTH 35

UDATA: 195675 0 PDATA: 189871 2
SCH5066

ACD DNS AVAIL: 75 USED: 25 TOT: 100
REQ END

>

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Glossary of Terms

ACD See Automatic Call Distribution.

ANI

See Automatic Number Identification.

Automatic Call Distribution

Referred to as ACD. A telephone system feature that automatically routes call to agents.

Automatic Number Identification

Referred to as ANI. Provides the capability that allows applications to identify the parties involved in a call and automatically transmit this information. ANI is typically a 10-digit number that is delivered by the network to identify the incoming caller.

Calling Line Identification

Referred to as CLID. Sends a telephone's designated number through the ISDN PRI network to the digit display on a receiving device.

CDN

See Control DN.

CLID

See Calling Line Identification.

Computer Telephony Integration Link

Referred to as CTI Link. A physical and logical connection between a PBX and computing system.

Control DN

Referred to as CDN. Similar to an ACD queue with no agents. In essence, it is a "holding place" for calls and used by host enhanced routing applications.

CTI

Computer Telephony Integration.

Dialed Number Identification Service

Referred to as DNIS. A telephone system feature that identifies a number that is dialed.

Direct Connect

A communication link between the Meridian 1 PBX and the Application Module (either the Meridian Link Module or the Customer Controlled Routing [CCR] Module). The Meridian Link IPE Module or Application Module software includes OA&M used to configure the Meridian Link connection.

Directory Number

Referred to as DN. A number that is the number assigned to a specific address.

DN

See Directory Number.

DNIS

See Dialed Number Identification Service.

DNs

Directory Numbers. See DN.

DTEV

Desktop Evolution

Integrated Services Digital Network

Referred to as ISDN. A specific type of switch-based telecommunication service. An international standard defined by the ITU (International Telecommunication Union) for an all-digital network providing end-to-end digital connectivity to support a wide range of voice and non-voice (data and video) services. An extension of the telephone system from analog to digital transmissions.

ISDN

See Integrated Services Digital Network.

IVR

Interactive Voice Response

MADN

Multiple Appearance Directory Number.

Meridian 1

The PBX telephone switch that controls the station sets associated with the TAPI client.

Meridian Link

Meridian Link commands and status messages use TCP/IP over a standard 10 Mbit Ethernet connection.

NORTEL Support Hotline

For additional information or help, call (800) 4 NORTEL.

PAPI

Pangea Application Programming Interface

SCCS

Symposium Call Center Server

Service Providers

Referred to as SP. Software files needed to enable TAPI applications to communicate with the physical telephony device.

SP

See Service Providers.

Symposium Call Center Server

TAPI

See Telephony Application Programming Interface.

TAPI Service Provider

Files needed to enable TAPI-compliant applications to communicate with the telephone device.

TCP/IP

Transport control protocol (Internet protocol, a standard Ethernet networking protocol).

Telephony Application Programming Interface

Referred to as TAPI. The Microsoft/Intel created standard for Windows telephony.

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***Nortel Symposium Network Manager's Guide
Reference Guide for the Symposium TAPI Service Provider
for Meridian 1 Release 2***

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