

**Lucent Technologies**  
Bell Labs Innovations



**PassageWay<sup>®</sup> Telephony Manager R2.0**  
**for DEFINITY<sup>®</sup> Enterprise**  
**Communications Server**  
Getting Started

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Issue 2  
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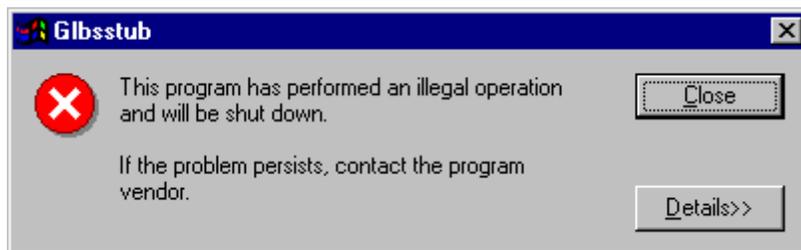
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## Attention Microsoft® Windows® 95 Users!

At two separate times during installation, you may see the following error message:



Please disregard this message and choose the **Close** button each time. Your installation will complete successfully.

## Attention All PassageWay® Users!

You will be unable to download the configuration information for your telephone from the DEFINITY system automatically via the PASTE feature and the **Auto Config** button. (The **Auto Config** button is disabled.) You must configure the PassageWay Service Provider manually.

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# Introduction

# 1

---

## **What is PassageWay Telephony Manager?**

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PassageWay® Telephony Manager is a set of computer telephony integration (CTI) applications enabling you to control telephone calls (both incoming and outgoing) directly from your IBM®-compatible personal computer (PC). These applications run with Microsoft® Windows® 95, Microsoft Windows NT™ Workstation 4.0 or later, and Microsoft Windows NT Server 4.0 or later, and provide you with an interface between your PC and your company's DEFINITY® Communications System via your telephone.

PassageWay Telephony Manager increases your telecommunications capabilities by providing the following applications:

- **Telephony Manager**

Telephony Manager is an application that enables you to control telephone calls (both incoming and outgoing) directly from your PC. From the Telephony Manager window, you can:

- make calls
- answer calls
- view the calling/called party information for each call (referred to as *caller ID* in this guide), if available

- take notes during calls
- place calls on hold
- hang up calls
- transfer calls
- set up and manage conference calls
- program speed dial buttons
- program and invoke system feature buttons

■ **Phonebook**

Phonebook is a card file application that enables you to maintain names, addresses, telephone numbers, and other information you need. You can place calls directly from Phonebook "cards," and you can set Telephony Manager to match the telephone numbers of incoming calls with entries in Phonebook. If the telephone number matches an entry in Phonebook, Telephony Manager displays the name of the caller, enabling you to know who is calling before you answer your telephone.

Phonebook can also open and use directories that were created with INTUITY™ Message Manager Phonebook.

■ **Log Manager**

Log Manager is an application that enables you to access information from the call log, which stores a record of every call you make and receive while Telephony Manager is running. Using Log Manager, you can review and edit notes you took during calls via Telephony Manager and place calls directly from the call records.

- **Script Editor**

Script Editor is an application that enables you to automate routine tasks by recording scripts that you can run with Telephony Manager. Scripts are user-defined tasks (such as, running a program, redirecting a call, or performing a set of actions). For example, using Script Editor, you can program automatic “screen pops,” where your database application searches your files to find a match with the information for the incoming call (such as the caller ID number or caller ID name) automatically. If a match is found, the record containing the matching information in your database application is displayed without you having to perform any actions. You can use these scripts with Auto-Task Manager and Telephony Manager Function buttons.

- **Auto-Task Manager**

Auto-Task Manager is an application that enables you to specify criteria (for example, incoming call or outgoing call, calling party number, calling party name, called party number, called party name, or call prompting digits) that will “trigger” scripts to run automatically. For example, suppose you wanted to have certain incoming calls directed to another extension. Using Auto-Task Manager, you could specify the calls using the person’s name or phone number, and then set those calls to trigger a “redirect” task.

- **Anywhere Dialer**

Anywhere Dialer is an application that enables you to dial telephone numbers from any Windows application via Telephony Manager.

## **Support for TAPI**

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Telephony Manager runs with the Microsoft Windows Telephony Application Programming Interface (TAPI). To be used with a DEFINITY system, Telephony Manager requires the PassageWay Service Provider software, which is a device driver that enables TAPI-compliant applications (such as Telephony Manager) to communicate with your DEFINITY telephone. Telephony Manager also supports the Unimodem and Unimodem V service providers, enabling you to use Telephony Manager on a laptop PC when you are away from the office (that is, not connected to your DEFINITY telephone).

## **New Features in Release 2.0**

---

Telephony Manager Release 2.0 provides the following new features:

- the Auto-Task Manager application
- the Script Editor application
- the Anywhere Dialer application
- the ability to program the following features to Function buttons in Telephony Manager:
  - Auto Call Back
  - Call Answer Back
  - Call Park
  - Call Pickup
  - Redirect

You can also associate scripts that you created with Script Editor.

- the ability to use Telephony Manager with a modem instead of a DEFINITY telephone, enabling you to use Telephony Manager on a laptop PC when you are away from the office (that is, not connected to a DEFINITY system)

## About This Guide

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- **Chapter 1 - Introduction**

This chapter describes the structure and content of this guide. This chapter also provides a brief introduction to Telephony Manager.

- **Chapter 2 - Installing and Configuring Telephony Manager**

This chapter describes how to install and configure the PassageWay Telephony Manager software and the PassageWay Service Provider software.

- **Chapter 3 - Using the Telephony Manager Applications**

This chapter describes how to start the Telephony Manager, Phonebook, Log Manager, Auto-Task Manager, Script Editor, and Anywhere Dialer applications.

- **Chapter 4 - Troubleshooting**

This chapter provides information about possible error conditions and how to respond to them when you install, start, and use PassageWay Telephony Manager.

- **Appendix A - PC Serial Ports**

This appendix provides detailed information about PC serial ports.

- **Appendix B - Changing the Settings for the 8411 Telephone**

This appendix provides the procedures and commands for changing or viewing options on the 8411 telephone.

- **Appendix C - PassageWay Service Provider Planning Form**

This appendix provides a planning form to help you configure the PassageWay Service Provider.

- **Index**

The index provides a quick way of locating information within this guide.

## **User Responsibilities**

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Before using the PassageWay Telephony Manager applications, you should be familiar with basic Windows functions and procedures. If not, consult your *Microsoft Windows User's Guide*.

You also may need to contact your PC vendor for information on configuring your PC to meet PassageWay Telephony Manager requirements.

## **Online Help**

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To access procedures on how to use the Telephony Manager applications, consult the online help for each application. You can access the online help for an application by pressing the F1 key on your keyboard or choosing Contents from the Help menu.

## **Conventions Used in This Guide**

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The following conventions are used in this guide:

- Commands and text you should enter appear *in this style of type*.
- Values, instructions, and prompts that appear on the screen are in **this style of type**.
- Components of dialog boxes (such as boxes) appear *in this style of type*.
- Key names that are always located on the keyboard in the same place appear in all capital letters (for example, ENTER).
- Key combinations (holding down one key while pressing another key) are connected with a "+" (for example, SHIFT+TAB).
- Only active windows are displayed.
- The terms *option buttons* and *radio buttons* refer to the same object.
- Throughout this guide, the term *DEFINITY* refers to all versions of the following systems:
  - DEFINITY ECS
  - DEFINITY ProLogix Solutions
  - DEFINITY G1, G2, and G3
  - System 75
  - System 85

## **Getting Help**

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If you have questions about or problems with PassageWay Telephony Manager applications that this guide or the online help does not resolve, call the Lucent Technologies National Customer Care Center at **1 800 242-2121** or your local Authorized Dealer.

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# Installing and Configuring Telephony Manager

# 2

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## Overview

---

This chapter provides the procedures for installing and configuring PassageWay Telephony Manager and the PassageWay Service Provider.

The information you must follow in this chapter depends on whether you have an earlier version of Telephony Manager installed on your PC.

## New Telephony Manager Users

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This section applies to new Telephony Manager users. If you have an existing version of Telephony Manager, proceed to the next section, “Upgrading from Telephony Manager Release 1.”

If you are a new Telephony Manager user, perform the following steps:

1. Read the section “PassageWay Telephony Manager Components” on page 2-6 to make sure that you have all of the Telephony Manager components.
2. Read the section “PassageWay Telephony Manager Requirements” on page 2-6 to make sure that you have the required hardware and software to run Telephony Manager.

3. Install and configure the PassageWay Service Provider by performing the procedures in the section “Installing and Configuring the PassageWay Service Provider” on page 2-11.

 **NOTE:**

If you will not use Telephony Manager with a DEFINITY system, you can skip Step 3. The PassageWay Service Provider is required to use Telephony Manager with a DEFINITY system.

To install and configure the PassageWay Service Provider, you must perform the following procedures:

- a. Read the section “Before You Begin” on page 2-12 to make sure you have the necessary information to set up and configure the PassageWay Service Provider.
  - b. Connect your 8411 telephone, Callmaster VI telephone, or PassageWay adapter to your PC:
    - If you have an 8411 telephone, perform the procedures in the section “Connecting Your 8411 Telephone to Your PC” on page 2-16.
    - If you have a Callmaster VI telephone, perform the procedures in the section “Connecting Your Callmaster VI Telephone to Your PC” on page 2-17.
    - If your telephone is not an 8411 or a Callmaster VI, perform the procedures in the section “Installing the PassageWay Adapter” on page 2-18.
  - c. Install the PassageWay Service Provider software by performing the procedures in the section “Installing the PassageWay Service Provider Software” on page 2-24.
4. Install Telephony Manager by performing the procedures in the section “Installing the Telephony Manager Software” on page 2-66.

5. Start Telephony Manager by performing the procedures in the section “Starting Telephony Manager” on page 2-70.
6. Configure the dialing information for Telephony Manager by performing the procedures in the section “Configuring the Dialing Information” on page 2-74.
7. Configure how Telephony Manager and Phonebook will operate by performing the procedures in the section “Configuring Telephony Manager and Phonebook Options” on page 2-78.

## **Upgrading from Telephony Manager Release 1**

---

This section applies to users who have Telephony Manager Release 1. If you have do not have Telephony Manager Release 1 installed, refer to the previous section, “New Telephony Manager Users.”

If you have Telephony Manager Release 1 installed on your PC, perform the following steps:

1. Read the section “PassageWay Telephony Manager Components” on page 2-6 to make sure that you have all of the Telephony Manager components.
2. Read the section “PassageWay Telephony Manager Requirements” on page 2-6 to make sure that you have the required hardware and software to run Telephony Manager.
3. Uninstall your existing version of the PassageWay Service Provider software. Refer to the section “Removing the PassageWay Service Provider” on page 2-83 for more information.
4. Uninstall your existing version of Telephony Manager (Release 1). Refer to the section “Removing Telephony Manager” on page 2-84 for more information. When you run the uninstall procedure, your existing Phonebook and Log Manager data files are not deleted. You can then use these files with the Phonebook and Log Manager applications in Release 2 of Telephony Manager.

5. Install and configure the new PassageWay Service Provider software by performing the procedures in the section “Installing and Configuring the PassageWay Service Provider” on page 2-11 in this chapter.

To install and configure the PassageWay Service Provider, you must perform the following procedures:

- a. Read the section “Before You Begin” on page 2-12 to make sure you have the necessary information to set up and configure the PassageWay Service Provider.
  - b. Install the PassageWay Service Provider software by performing the procedures in the section “Installing the PassageWay Service Provider Software” on page 2-24.
6. Install Telephony Manager by performing the procedures in the section “Installing the Telephony Manager Software” on page 2-66 in this chapter.
  7. Start Telephony Manager by performing the procedures in the section “Starting Telephony Manager” on page 2-70 in this chapter.
  8. Configure how Telephony Manager and Phonebook will operate by performing the procedures in the section “Configuring Telephony Manager and Phonebook Options” on page 2-78 in this chapter.

## PassageWay Telephony Manager Components

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Telephony Manager consists of the following components:

- a CD-ROM

 **NOTE:**

If you require 3-1/2" diskettes, please contact the PassageWay Fulfillment Center at 860 434-3961 and request the diskette version of software for Telephony Manager R2.

- this guide (A PDF version of this guide is located in the *Getting Started Guide* directory on the CD-ROM. Consult the *Readme* file in this directory for more information.)

## PassageWay Telephony Manager Requirements

---

Telephony Manager requires the hardware and software listed below. Note that system performance may be adversely affected by lower system speeds and lower memory capacities.

- an IBM PC-compatible or PS/2®-compatible PC with the following hardware:
  - an 80486/66DX or higher processor
  - an available serial port
  - a minimum of 16 MB of RAM
  - a 3.5-inch, 1.44-MB, high-density diskette drive or CD-ROM drive
  - a hard disk with at least 25 MB of space available
  - a VGA or better monitor

- a Windows-compatible pointing device (a mouse or trackball is recommended)

 **NOTE:**

If you want to use Telephony Manager with your DEFINITY telephone, you must have an available serial port in your PC that is dedicated to the PassageWay Service Provider. The PassageWay Service Provider cannot share a serial port with other devices.

If all the serial ports in your PC are already in use, you must purchase an additional serial port or free up an existing serial port to use with the PassageWay Service Provider. Consult Appendix A for more information on choosing a suitable serial port for the PassageWay Service Provider.

- Microsoft Windows 95, Microsoft Windows NT Server 4.0 or later, or Microsoft Windows NT Workstation 4.0 or later

 **NOTE:**

Only English (United States) is supported.

- The PassageWay Service Provider is required to use Telephony Manager or another TAPI application with your DEFINITY telephone. If you want to use Telephony Manager with a modem, you will need the Unimodem service provider or Unimodem V service provider. The Unimodem service provider should be present on your PC. However, if you never used your modem, you will be prompted to configure the Unimodem service provider.

 **NOTE:**

You should install and configure the service provider(s) before installing PassageWay Telephony Manager. This document describes how to install and configure the PassageWay Service Provider.

- any of the following telephones if you want to use Telephony Manager with a DEFINITY system:
  - 6400 Series telephones
  - 7400 Series telephones
  - 8400 Series telephones
  - Callmaster® Series telephones

 **NOTE:**

A complete list of all the telephones supported by the PassageWay Service Provider is provided in the PassageWay Service Provider software (also known as the “PassageWay Configurator”).

For caller ID capabilities, your telephone must have:

- a display. However, you can use a non-display telephone for caller ID capabilities if your company’s DEFINITY System Manager administers your extension as a display telephone. Consult your DEFINITY System Manager.
- an Inspect button and a Normal button programmed. The Inspect button is a display feature button that shows you call-related information for an incoming call when you are already active on a call. The Normal button is a display feature button that clears the information displayed by the Inspect button. The Normal button is not required if you have an 8411 telephone.

If you are using an 8411 telephone or Callmaster VI telephone, you may need one of three serial cables (a 9-pin to 25-pin cable, a 25-pin to 25-pin cable, or a 9-pin to 9-pin cable). The serial cable connects the 8411 telephone or Callmaster VI telephone to the serial port on your PC. If you have an 8411 telephone, use the 9-pin to 25-pin cable if your PC has a 9-pin serial port or the 25-pin to 25-pin cable if your PC has a 25-pin serial port. If you have a Callmaster VI telephone, use the 9-pin to 25-pin cable if your PC has a 25-pin serial port or the 9-pin to 9-pin cable if your PC has a 9-pin serial port.

If you are using a telephone other than an 8411 or Callmaster VI, you will need the following items:

— the PassageWay adapter

The PassageWay adapter provides an interface between your telephone and an available serial (COM) port on your PC by connecting to the following objects:

- the line jack on your telephone
- the wall jack in your office
- the serial port on your PC

— one of two serial cables (a 9-pin to 9-pin cable or a 9-pin to 25-pin cable)

The serial cable connects the PassageWay adapter to the serial port on your PC. Use the 9-pin to 9-pin cable if your PC has a 9-pin serial port. Use the 9-pin to 25-pin cable if your PC has a 25-pin serial port.

— a 7-foot, 4-pair, modular phone cord (D8W)

This modular phone cord connects the PassageWay adapter to your telephone.

— a local power supply, a D6AP cord, and a 400B or 400B2 adapter

The local power supply, D6AP cord, and 400B or 400B2 adapter provide power for the PassageWay adapter if your telephone does not have auxiliary power supplied from a power source in the wire closet (telephone closet). Ask your company's DEFINITY System Manager if you have a question about whether you already have auxiliary power to your telephone.

- a telephone connected to a DEFINITY system that is configured and operating properly (if you want to use Telephony Manager with a DEFINITY system).

Telephony Manager operates with all versions of the following DEFINITY systems:

- DEFINITY ECS
- DEFINITY ProLogix Solutions
- DEFINITY Communications System G1, G2, and G3
- System 75
- System 85

 **NOTE:**

Throughout this document, the term *DEFINITY* is used to refer to all of the systems listed above.

## **Installing and Configuring the PassageWay Service Provider**

---

This section describes how to install and configure the PassageWay Service Provider. You must perform the procedures in this section if you want to use Telephony Manager with a DEFINITY system. You should install the PassageWay Service Provider before you install Telephony Manager.

The PassageWay Service Provider is a device driver that enables applications that are compliant with the Microsoft Windows Telephony Application Programming Interface (TAPI) (such as PassageWay Telephony Manager) to communicate with your telephone and your company's DEFINITY system. The PassageWay Service Provider accepts the basic TAPI requests from your TAPI-compliant application and translates these requests into instructions to the PassageWay adapter (or "PassageWay link," if your telephone has the PassageWay adapter built in) to control your telephone and interact with your company's DEFINITY system.

## **Before You Begin**

---

This section describes the information that is required to install and configure the PassageWay Service Provider.

If your company has a DEFINITY G3 V5 or later system, you can download the configuration information for your telephone from the DEFINITY system automatically. However, to use this feature, you must:

- have a display telephone. However, you can use a non-display telephone if your company's DEFINITY System Manager administers your extension as a display telephone. Consult your DEFINITY System Manager. If you have a non-display telephone, you must also use the Advanced button in the Telephone Options dialog box to specify that your extension has display capabilities even though your telephone does not have a display.

 **NOTE:**

You cannot automatically download the configuration information for your telephone if you have a 6402 telephone or a 6402D telephone.

- know the PASTE feature access code for your DEFINITY system. You must contact your DEFINITY System Manager for this feature access code.
- have a Next feature button administered on your telephone, depending on your type of telephone. If you have a 6400 Series telephone without a display, a 7400 Series telephone, an 8400 Series telephone, or a Callmaster telephone other than a Callmaster VI, you must have a Next feature button administered on your telephone. However, if you have a Callmaster VI telephone or a 6400 Series telephone with a display, you do not need a Next feature button administered on your telephone.

If your company's DEFINITY system supports the PASTE feature, you only need to know the following information to configure the PassageWay Service Provider. (Use Appendix C to record this information.)

- the type of telephone you have
- the PASTE feature access code for your DEFINITY system
- the location of the Next feature button administered on your telephone if you have a 6400 Series telephone without a display, a 7400 Series telephone, an 8400 Series telephone, or a Callmaster telephone other than a Callmaster VI. If you have a Callmaster VI telephone or a 6400 Series telephone with a display, you do not need a Next feature button administered on your telephone.

If your company's DEFINITY system does not support the PASTE feature, you must know the following information before installing the PassageWay Service Provider:

- the telephone number and type of call appearances on your telephone (that is, primary, bridged, or monitored)
- the location of call appearances on your telephone
- the location of feature buttons on your telephone

 **NOTE:**

If you have a 6400 Series telephone (other than a 6402 or 6402D), make sure your DEFINITY System Manager programmed a Drop feature button on your telephone. Consult your DEFINITY System Manager.

- the access codes for the features you want to program on your telephone. You can program the following features:
  - Auto Call Back On
  - Auto Call Back Off
  - Call Answer Back

- Call Park
- Call Pickup
- Forward Off
- Forward On
- Leave Word Calling
- Leave Word Cancel
- Priority
- Send All Calls Off
- Send All Calls On
- Speed Call Program

 **NOTE:**

Depending on your telephone, you may be unable to program some of these features. Any features that are not supported by your telephone will be disabled.

You can get these access codes from your DEFINITY System Manager. If you need to modify any of this information at a later time, use the PassageWay Configurator application.

- whether your telephone has auxiliary power (either from the telephone closet [wire closet] or from an auxiliary power supply). The PassageWay adapter requires auxiliary power. You can obtain this information from your System Manager.

 **NOTE:**

The 8411 telephone requires auxiliary power. An auxiliary power supply is provided with the 8411 telephone. Refer to your 8411 User's Guide for more information.

- the number of the COM port (for example, COM1, COM2, COM3, COM4, etc.) to which you are connecting the serial cable from the 8411 telephone or the Callmaster VI telephone, or the PassageWay adapter for all other telephones. (PassageWay supports up to COM9.) If you are unable to determine the number of the COM port, you can set PassageWay to determine the COM port for you when you install the software.
- the location of the Inspect button and Normal button on your telephone (if an Inspect button and/or a Normal button is administered on your telephone).



**NOTE:**

The 8411 telephone does not have a Normal button.

- the location of the Next feature button on your telephone (if administered on your telephone).
- whether your telephone is administered as a display telephone (if you have a non-display telephone).

## **Connecting Your 8411 Telephone to Your PC**

This section describes how to connect an 8411 telephone to your PC. Only perform the steps in this section if you have an 8411 telephone. Otherwise, see “Connecting Your Callmaster VI Telephone to Your PC” or “Installing the PassageWay Adapter.”

The 9-pin to 25-pin serial cable connects your PC and your 8411 telephone, enabling you to access the DEFINITY system from your PC. This cable has a 9-pin connector for 9-pin serial ports. If you have a 25-pin serial port on your PC, use the 25-pin to 25-pin cable to connect your 8411 telephone to your serial port.

To connect your telephone to your PC:

1. Turn off your PC.
2. Determine the type of serial port (9 pin or 25 pin) you have on your PC. If you have a 9-pin serial port, you will use the 9-pin to 25-pin serial cable. If you have a 25-pin serial port, you will use the 25-pin to 25-pin serial cable.
3. Connect the 25-pin connector of the serial cable to the 25-pin connector on the back of your 8411 telephone.
4. Connect the other end of the serial cable to the serial (COM) port on your PC.
5. Turn on your PC.

Proceed to “Installing the PassageWay Service Provider Software.”

## **Connecting Your Callmaster VI Telephone to Your PC**

---

This section describes how to connect a Callmaster VI telephone to your PC. Only perform the steps in this section if you have a Callmaster VI telephone. Otherwise, see “Connecting Your 8411 Telephone to Your PC” or “Installing the PassageWay Adapter.”

The 9-pin to 9-pin serial cable connects your PC and your Callmaster VI telephone, enabling you to access the DEFINITY system from your PC. This cable has a 9-pin connector for 9-pin serial ports. If you have a 25-pin serial port on your PC, use the 9-pin to 25-pin cable to connect your Callmaster VI telephone to your serial port.

To connect your telephone to your PC:

1. Turn off your PC.
2. Determine the type of serial port (9 pin or 25 pin) you have on your PC. If you have a 9-pin serial port, you will use the 9-pin to 9-pin serial cable. If you have a 25-pin serial port, you will use the 9-pin to 25-pin serial cable.
3. Connect the 9-pin connector of the serial cable to the 9-pin connector on the back of your Callmaster VI telephone.
4. Connect the other end of the serial cable to the serial (COM) port on your PC.
5. Turn on your PC.

Proceed to “Installing the PassageWay Service Provider Software.”

## **Installing the PassageWay Adapter**

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This section describes how to connect the PassageWay adapter to your PC and your telephone. Only perform the steps in this section if your PassageWay adapter is not installed already or if you do not have an 8411 telephone or a Callmaster VI telephone. If you have an 8411 telephone, see “Connecting Your 8411 Telephone to Your PC.” If you have a Callmaster VI telephone, see “Connecting Your Callmaster VI Telephone to Your PC.”

The PassageWay adapter provides an interface between your PC and your telephone, enabling you to access the DEFINITY system from your PC. The PassageWay adapter has a 9-pin connector for 9-pin serial ports. If you have a 25-pin serial port on your PC, use the 9-pin to 25-pin cable to connect the PassageWay adapter to your serial port.

The PassageWay adapter requires auxiliary power. Before installing the PassageWay adapter, consult your System Manager to determine whether your telephone has auxiliary power. If your telephone does not have auxiliary power, refer to “Install the PassageWay Adapter with a Local Power Supply.” If your telephone has auxiliary power, refer to “Install the PassageWay Adapter with Telephone Closet Power.”



**NOTE:**

Do not install the PassageWay adapter while you are active on a call.

### **Install the PassageWay Adapter with a Local Power Supply**

Perform the following steps if your telephone requires a local power supply. You will need the 400B or 400B2 adapter, D6AP cable, and power supply provided. Refer to Figure 2-1 while installing the PassageWay adapter. The numbers in Figure 2-1 indicate the procedure steps.

To install the PassageWay adapter with a local power supply:

1. Turn off your PC.
2. Unplug the line cord from the wall jack.
3. Connect the line cord to the jack labeled "Phone" on the PassageWay adapter.
4. Place the 400B or 400B2 adapter into the wall jack.
5. Connect one end of the 7-foot, 4-pair, modular phone cord (D8W) to the jack labeled "Line" on the PassageWay adapter.
6. Connect the other end of the 7-foot, 4-pair, modular phone cord (D8W) to the Line jack on the 400B or 400B2 adapter.
7. Determine the type of serial port (9 pin or 25 pin) you have on your PC. If you have a 9-pin serial port, you will use the 9-pin to 9-pin cable. If you have a 25-pin serial port, you will use the 9-pin to 25-pin cable.
8. Connect one end of the appropriate serial cable to the 9-pin connector on the PassageWay adapter.
9. Connect the other end of the serial cable to the serial (COM) port on your PC.
10. Connect the D6AP power line to the power supply.
11. Connect the other end of the D6AP power line to the Power jack on the 400B or 400B2 adapter.
12. Plug the power supply into an AC electrical outlet.

13. Check the LED on the top of the PassageWay adapter.

If the red LED is “on,” proceed to Step 14.

If the red LED is “off,” proceed to the section “PassageWay Adapter LEDs” in Chapter 4.

If the red LED is “blinking,” proceed to the section “PassageWay Adapter LEDs” in Chapter 4.

14. Turn on your PC.

Proceed to “Installing the PassageWay Service Provider Software.”

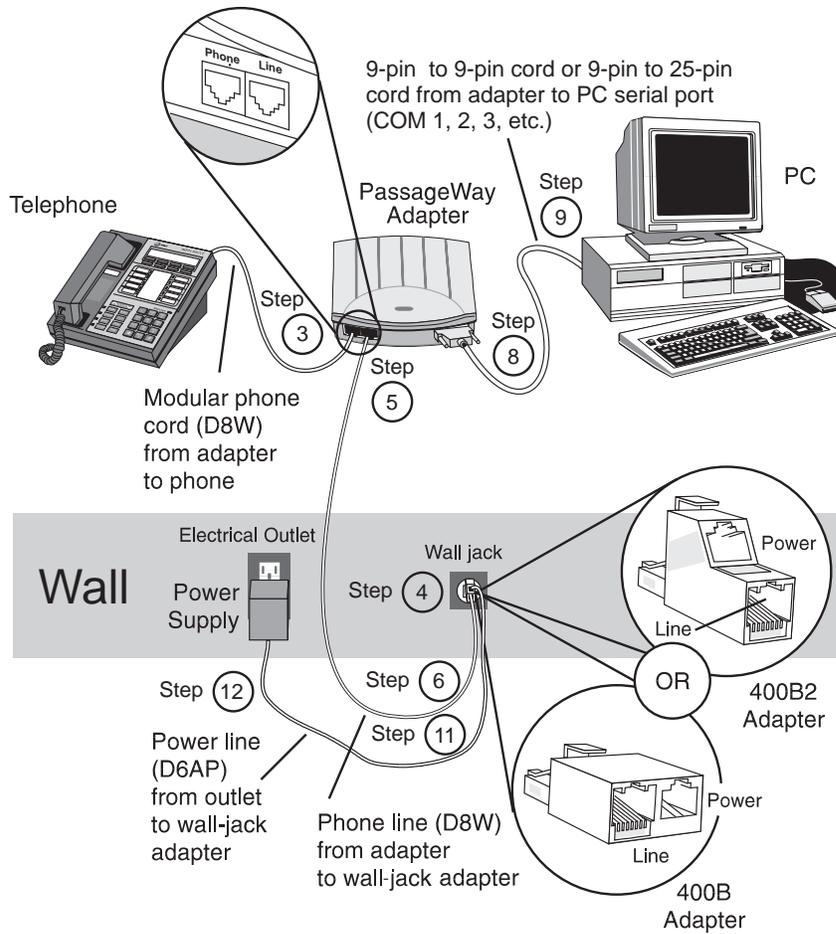


Figure 2-1. PassageWay Adapter Installed with a Local Power Supply

### Install the PassageWay Adapter with Telephone Closet Power

Perform the following steps if your telephone has auxiliary power. Refer to Figure 2-2 while installing the PassageWay adapter. The numbers in Figure 2-2 indicate the procedure steps.

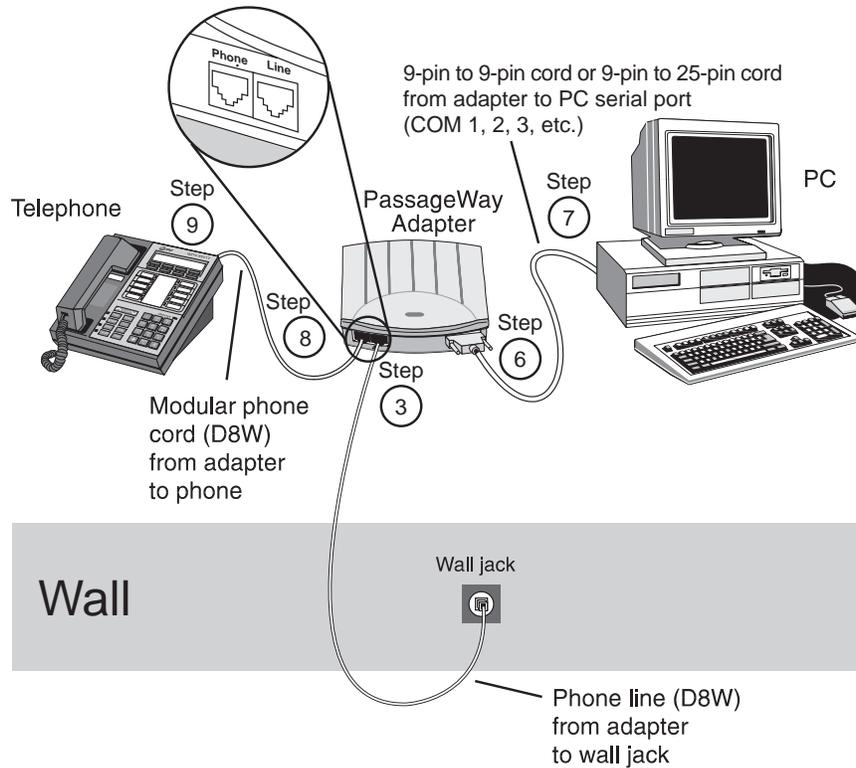


Figure 2-2. PassageWay Adapter Installed with Telephone Closet Power

To install the PassageWay adapter with telephone closet power:

1. Turn off your PC.
2. Unplug the line cord from your telephone.
3. Connect the line cord to the jack labeled "Line" on the PassageWay adapter.
4. Check the LED on the top of the PassageWay adapter.  
If the red LED is "on," proceed to Step 5.  
If the red LED is "off," proceed to the section "PassageWay Adapter LEDs" in Chapter 4.  
If the red LED is "blinking," proceed to the section "PassageWay Adapter LEDs" in Chapter 4.
5. Determine the type of serial port (9 pin or 25 pin) you have on your PC. If you have a 9-pin serial port, you will use the 9-pin to 9-pin cable. If you have a 25-pin serial port, you will use the 9-pin to 25-pin cable.
6. Connect one end of the appropriate serial cable to the 9-pin connector on the PassageWay adapter.
7. Connect the other end of the serial cable to the serial (COM) port on your PC.
8. Connect one end of the 7-foot, 4-pair, modular phone cord (D8W) to the jack labeled "Phone" on the PassageWay adapter.
9. Connect the other end of the 7-foot, 4-pair, modular phone cord (D8W) to the Line jack on your telephone.
10. Turn on your PC.

Proceed to "Installing the PassageWay Service Provider Software."

## **Installing the PassageWay Service Provider Software**

---

This section describes how to install and configure the PassageWay Service Provider. You can modify the PassageWay Service Provider configuration information later by running the PassageWay Configurator.



**NOTE:**

If you have an earlier version of PassageWay Solution, you must exit Connect or AT&TConnect (if it is running) before installing the new PassageWay Service Provider.

To install the PassageWay Service Provider:

1. Start Windows (if it is not running already).
2. Shut down all applications running on your PC.
3. If you have an earlier version of PassageWay Solution applications (for example, AT&TCall, AT&TConnect, or AT&TBuzz) installed already, perform one of the following steps:
  - If you do not want to run the earlier version of PassageWay Solution applications again, delete Connect or AT&TConnect from your StartUp folder (if present).
  - If you want to run the earlier version of PassageWay Solution applications again, leave Connect or AT&TConnect in your StartUp folder (if present). Be sure to install the PassageWay Service Provider in the directory that contains the PassageWay Solution applications. If you install the PassageWay Service Provider in a different directory, you must manually change the properties of Connect or AT&TConnect in the StartUp folder so that it uses the new Connect application. (See your Windows User's Guide to change the properties of a shortcut in the StartUp folder.)

4. If you are installing from CD-ROM, insert the Telephony Manager CD-ROM into the CD-ROM drive of your PC. If the Autorun feature is enabled on your PC, the PassageWay Setup dialog box appears. Proceed to Step 7.

If you are installing from a shared directory on a network server, proceed to Step 5.

If you are installing from diskette, insert PassageWay Service Provider diskette #1 into the diskette drive of your PC. Proceed to Step 5.

5. Double-click on the My Computer icon on your desktop.

The My Computer window appears.

6. Depending on whether you are installing from a CD-ROM, a shared directory, or a diskette, perform one of the following steps:
  - If you are installing from CD-ROM, double-click on the CD-ROM icon, and then double click on **start.exe**. The PassageWay Setup dialog box appears.
  - If you are installing from a shared directory, double-click on the network drive icon specified by your Network Administrator, and then double-click on **setup.exe**. The PassageWay for DEFINITY Service Provider Setup dialog box appears. Proceed to Step 8.
  - If you are installing from diskette, double-click on the diskette drive icon, and then double-click on **setup.exe**. The PassageWay for DEFINITY Service Provider Setup dialog box appears. Proceed to Step 8.
7. Select the *PassageWay Service Provider* option button, and then choose the OK button.

The PassageWay for DEFINITY Service Provider Setup dialog box appears.

8. Choose the Next button.

The Select Destination Directory dialog box appears. This dialog box displays the name of the directory where the PassageWay Service Provider software will be installed by default.

9. If the default directory is unacceptable, choose the Browse button and specify an alternate directory. Otherwise, proceed to Step 10.
10. Choose the Next button.

The Select App Folder dialog box appears. This dialog box displays the name of the application folder to which the PassageWay Service Provider icons will be added.

11. If the default application folder is unacceptable, enter the name of the new folder to be created or select an existing folder. Otherwise, proceed to Step 12.
12. Choose the Next button.

The Ready to Install dialog box appears.

13. Choose the Next button.

The installation program copies files to the destination directory. The installation program displays a message box to inform you of its status as it installs files.

If you are installing from diskette, insert the requested PassageWay Service Provider software diskette into the PC when prompted, and choose the OK button.

After the software is installed, the Creating Application Folder & Short Cuts message box appears.

14. Choose the OK button.

The Installation Completed message box appears.

15. Choose the Finish button.

The PassageWay Configurator is launched, and it displays the Find PassageWay Phone dialog box.



---

**Figure 2-3. Find PassageWay Phone Dialog Box**

The PassageWay Configurator is a software application that enables you to set up the PassageWay Service Provider. Until you set up the PassageWay Service Provider, you will be unable to use any TAPI applications.

Setting up the PassageWay Service Provider consists of specifying the following information:

- the COM port to which the 8411 telephone, Callmaster VI telephone, or PassageWay adapter is connected
- type of telephone you have
- the telephone number, the type (that is, primary, bridged, or monitored), and the location of call appearances on your telephone
- the location of feature buttons on your telephone
- the access codes for the features you want to program on your telephone

 **NOTE:**

The PassageWay Configurator does not verify whether the information you enter is correct. When you run a TAPI application (for example, Telephony Manager), the PassageWay Service Provider tries to use the information you entered via the PassageWay Configurator. If the information you entered in the PassageWay Configurator was correct, the TAPI application works properly. If any of the information you entered is incorrect, the TAPI application will not work. You must then run the PassageWay Configurator and change the incorrect information.

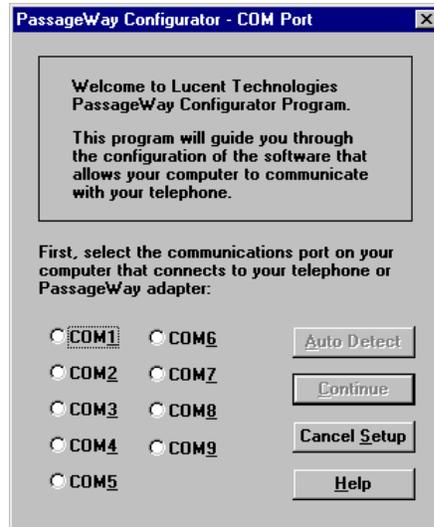
The Find PassageWay Phone dialog box enables you to have the PassageWay Configurator determine the COM port to which your telephone or PassageWay adapter is connected.

16. Choose the Yes button.

If the PassageWay Configurator found the COM port to which your telephone or PassageWay adapter is connected, the PassageWay Link Found message box appears. Choose the OK button. The PassageWay Configurator - COM Port dialog box appears, and the option button for the corresponding COM port is selected.

If the PassageWay Configurator did not find the COM port to which your telephone or PassageWay adapter is connected, the PassageWay Link Not Found message box appears. Choose the OK button. The PassageWay Configurator - COM Port dialog box appears, and no COM port option button is selected.

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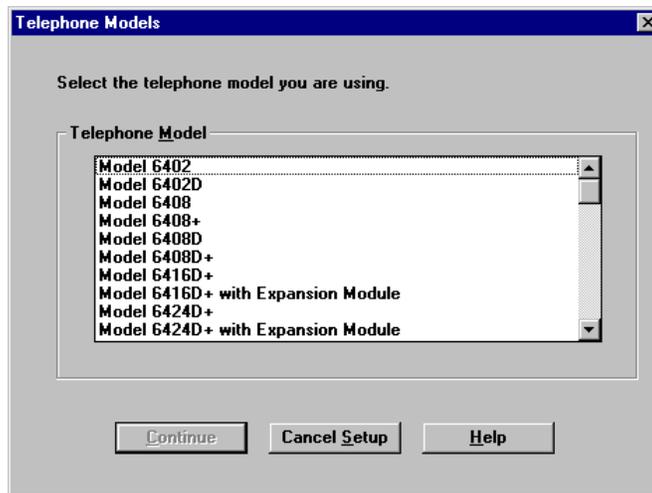
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Figure 2-4. Sample PassageWay Configurator - COM Port Dialog Box

17. Perform one of the following steps:

- If PassageWay “found” the COM port for you, choose the Continue button.
- If PassageWay did not find the COM port for you, select the option button of the COM port in your PC to which your telephone (if you have an 8411 telephone or Callmaster VI telephone) or PassageWay adapter is connected, and then choose the Continue button.

The Telephone Models dialog box appears.



---

Figure 2-5. Telephone Models Dialog Box

Depending on the type of telephone you are using, proceed to the appropriate section of this chapter:

- If you are using a 7400 Series, 8400 Series, or Callmaster telephone, proceed to “Configuring 7400 Series, 8400 Series, and Callmaster Telephones” later in this chapter.
- If you are using a 6400 Series telephone, proceed to “Configuring 6400 Series Telephones” later in this chapter.

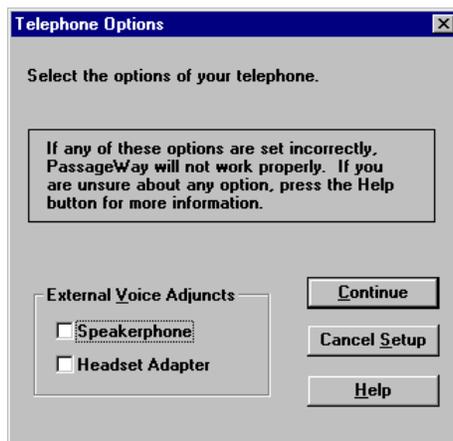
## Configuring 7400 Series, 8400 Series, and Callmaster Telephones

If you are using a 7400 Series, 8400 Series, or Callmaster telephone, perform the following steps to configure your telephone:

1. From the Telephone Models dialog box, select the telephone you are using, and then choose the Continue button.

If you are using a Callmaster VI telephone, the Phone Line Information dialog box appears. Proceed to Step 4.

If you are using a 7400 Series, 8400 Series, or Callmaster telephone other than a Callmaster VI, the Telephone Options dialog box appears.



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Figure 2-6. Sample Telephone Options Dialog Box

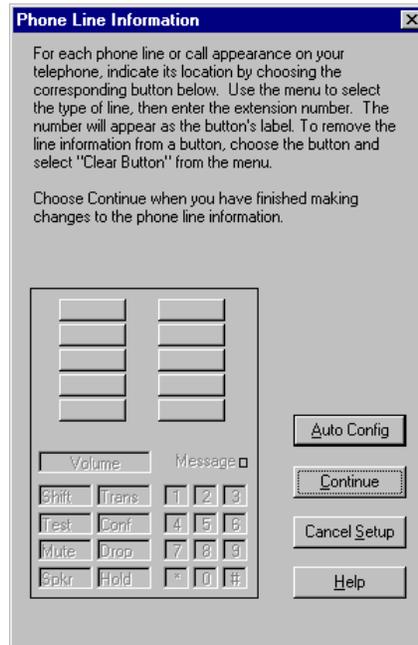
The Telephone Options dialog box enables you to specify whether your telephone has an external voice adjunct (that is, an external speakerphone or a headset adapter), if supported.

2. In the External Voice Adjuncts area, select the external voice adjunct you have (if any).

 **NOTE:**

If you have a non-display telephone, the Advanced button is present. The Advanced button gives you the ability to use display features such as caller ID. By choosing the Advanced button, you can specify that your extension has display capabilities even though your telephone does not have a display. However, in order for your extension to have these display capabilities, your DEFINITY System Manager must administer your extension for display capabilities.

3. When you are finished, choose the Continue button.  
The Phone Line Information dialog box appears.



---

**Figure 2-7. Sample Phone Line Information Dialog Box**

This dialog box presents a representation of the buttons on your telephone.

If your company has a DEFINITY G3 V5 or later system, the PassageWay Configurator can automatically download the following information for your telephone from the DEFINITY system via the Auto Config button:

- the location and type (that is, primary line, bridged line, or monitored line) of call appearances on your telephone.
- the location of features assigned to buttons on your telephone.
- the feature access codes for certain features that are not programmed as buttons on your telephone.

If you want to configure your telephone automatically via the Auto Config button, you must:

- have a display telephone. However, you can use a non-display telephone if your company's DEFINITY System Manager administers your extension as a display telephone. Consult your DEFINITY System Manager. If you have a non-display telephone, you must also use the Advanced button in the Telephone Options dialog box to specify that your extension has display capabilities even though your telephone does not have a display.
- know the PASTE feature access code for your DEFINITY system. You must contact your DEFINITY System Manager for this feature access code.
- have a Next feature button administered on your telephone, depending on your type of telephone. If you have a 7400 Series telephone, an 8400 Series telephone, or a Callmaster telephone other than a Callmaster VI, you must have a Next feature button administered on your telephone. However, if you have a Callmaster VI telephone, you do not need a Next feature button administered on your telephone.

If you do not use the Auto Config button, you will use the Phone Line dialog box to specify the location and type for each call appearance on your telephone. You can specify the following types of call appearances:

- Primary Line, which is the extension of your telephone.
- Bridged Line, which is the extension of another person's telephone to which you have full access (that is, you can “bridge” onto calls appearing at that person's telephone).
- Monitored Line, which is the extension of another person's telephone for which you can monitor the status (that is, in use, on hold, or inactive).

4. Perform one of the following steps:

- If you want to manually configure the PassageWay Configurator, proceed to Step 5.
- If you want to automatically configure the PassageWay Configurator, perform the following steps:

- a. If you have a Callmaster VI telephone, proceed to Step c.

If you do not have a Callmaster VI telephone, choose the button where the Next button is located on your telephone.

A submenu appears.

- b. Choose **Next**.

The Next label appears on the button you selected.

- c. Choose the Auto Config button.

The PASTE Requirements dialog box appears, stating the requirements for using this feature. If your system meets the requirements, proceed to Step d. Otherwise, choose the Cancel button and proceed to Step 5 to manually configure the PassageWay Configurator.

- d. Choose the OK button.

The Enter PASTE Feature Access Code dialog box appears. You must enter the PASTE feature access code for your DEFINITY system. Without this feature access code, the PassageWay Configurator cannot download your telephone's configuration information from the DEFINITY system. Consult your DEFINITY System Manager to get this feature access code.

- e. Enter the PASTE feature access code, and then choose the Continue button.

The PASTE Download dialog box appears, and the OK button is disabled.



**NOTE:**

The download will take several minutes.

- f. Choose the Begin button.

The configuration information is downloaded from the DEFINITY system. If you have a PassageWay adapter installed, you may hear some dialing occur during the download.

When the download is complete, the OK button is enabled.

- g. Choose the OK button.

If you have a Callmaster VI telephone, the Feature Access Codes dialog box appears, displaying the feature access codes for your DEFINITY system. You cannot change any of this information during this session. To change this information, you must restart the PassageWay Configurator. Proceed to Step i.

If you do not have a Callmaster VI telephone, the Phone Line Information dialog box appears, displaying the locations of all call appearances and feature buttons on your telephone. You cannot change any of this information during this session. To change this information, you must restart the PassageWay Configurator. Proceed to Step h.

- h. Choose the Continue button.

The Feature Access Codes dialog box appears, displaying the feature access codes for your DEFINITY system. You cannot change any of this information during this session. To change this information, you must restart the PassageWay Configurator.

- i. Choose the Continue button.

The PassageWay Configurator - Complete message box appears.

- j. Proceed to Step 16.

5. Choose the location of a call appearance on your telephone.

A submenu appears displaying "Clear Button," "Primary Line," "Bridged Line," "Monitored Line," and "Cancel."

 **NOTE:**

Make sure you specify the correct location and type of each call appearance on your telephone. If you incorrectly specify any of this information, your system will not work as expected.

6. Choose the appropriate type of call appearance for the selected button.

If you select **Clear Button**, the programming (if any) and label (if any) are removed from that button.

If you select **Cancel**, the submenu closes, and the programming for the selected button is not changed.

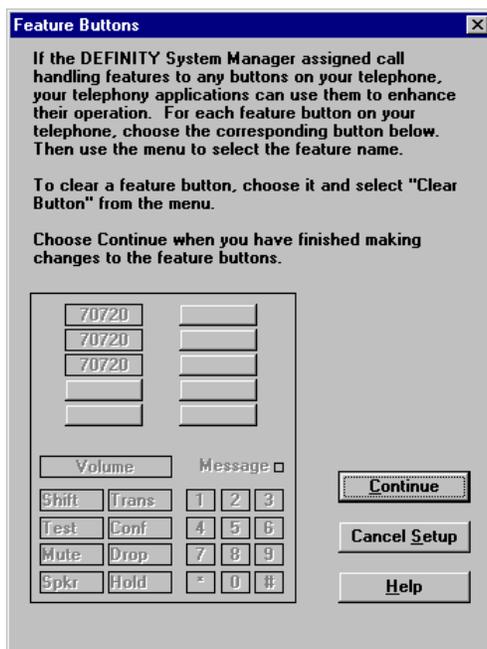
If you select one of the other options, another dialog box appears. You must enter the appropriate information in that dialog box, and then choose the OK button in that dialog box.

7. Repeat Steps 5 and 6 for any other call appearances on your telephone.
8. When you are finished, choose the Continue button.

If you are using a Callmaster VI telephone, the Feature Access Codes dialog box appears. Proceed to Step 13.

If you are using a 7400 Series, 8400 Series, or Callmaster telephone other than a Callmaster VI, the Feature Buttons dialog box appears.

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**Figure 2-8. Sample Feature Buttons Dialog Box**

⇒ **NOTE:**  
The Feature Buttons dialog box only shows the buttons on your telephone to which features can be programmed. This dialog box does not show the soft keys on your telephone (if available).

Using this dialog box, you specify the location of call handling features assigned to buttons on your telephone by the DEFINITY System Manager. By specifying the locations of feature buttons, other telephony applications can use these call handling features to enhance their operation.

The PassageWay Service Provider can recognize the following call handling features programmed to your telephone:

- Auto Call Back
- Call Answer Back
- Call Forward
- Call Information
- Call Park
- Call Pickup
- Drop
- Inspect
- Leave Word Calling
- Leave Word Cancel
- Normal (if supported by your telephone)
- Release

- Send All Calls
- Speed Call Button
- Speed Call Program

 **NOTE:**

- Features that cannot be programmed to buttons on your telephone are disabled (that is, you cannot program these features).
- Make sure you specify the correct type and location of each feature assigned to buttons on your telephone. If you incorrectly specify any of this information, your system will not work as expected.

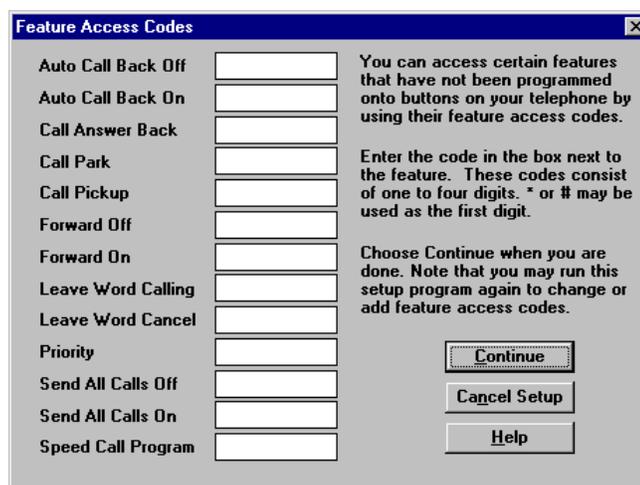
9. Choose a button where a feature is assigned.

A submenu appears, displaying the following options:

- Clear Button
- Auto Call Back
- Call Answer Back
- Call Forward
- Call Information
- Call Park
- Call Pickup
- Drop
- Inspect
- Leave Word Calling
- Leave Word Cancel
- Normal

- Release
- Send All Calls
- Speed Call Button
- Speed Call Program
- Cancel

10. Choose the appropriate feature for the selected button.  
The label for the selected feature appears on the button.
11. Repeat Steps 9 and 10 for any other buttons.
12. When you are finished, choose the Continue button.  
The Feature Access Codes dialog box appears.



---

Figure 2-9. Feature Access Codes Dialog Box

Using this dialog box, you can program the following features to your telephone:

- Auto Call Back Off
- Auto Call Back On
- Call Answer Back
- Call Park
- Call Pickup
- Forward Off
- Forward On
- Leave Word Calling
- Leave Word Cancel
- Priority
- Send All Calls Off
- Send All Calls On
- Speed Call Program

 **NOTE:**

- Before you can program these features to your telephone, you must know the associated feature access codes. If you incorrectly specify this information, your system will not work as expected. Consult your DEFINITY System Manager for these access codes.
- Features that your telephone does not support are disabled (that is, you cannot program these features).

13. In the box to the right of the feature you want to program, enter the access code for that feature.
14. Repeat Step 13 for any other features you want to program.
15. When you are finished, choose the Continue button.  
The PassageWay Configurator - Complete message box appears.
16. Choose the OK button.  
The Configuration Complete message box appears.
17. Choose the OK button.  
The Verify Firmware Version dialog box appears.



**NOTE:**

If you have a Callmaster VI telephone, do not verify the firmware version. Make sure the check box is not selected.

If you want to verify that your PassageWay adapter or 8411 telephone has current firmware, make sure the check box is selected. (This check box is selected by default.) If the firmware in your PassageWay adapter or 8411 telephone is not current, you may be unable to make and receive calls with Telephony Manager. By selecting this check box, the version of the firmware in your PassageWay adapter or 8411 telephone will be checked.

If you are using Windows 95, the Connect application will be started, and it will check the version of the firmware in your PassageWay adapter or 8411 telephone. If you are using Windows NT Workstation 4.0 or later or Windows NT Server 4.0 or later, the Pumpware Module will be started, and it will check the version of the firmware in your PassageWay adapter or 8411 telephone. If the firmware is not current, Connect or the Pumpware Module will “pump” new firmware to the PassageWay adapter or 8411 telephone.

18. Choose the Next button.

If you are using Windows 95 and the check box was selected, Connect starts, verifies the PassageWay link, and then checks the firmware version. If the firmware is current, the Connect button appears at the bottom of your screen. Proceed to Step 22.

If the firmware is not current, a Connect dialog box appears, stating that the PassageWay firmware is not fully compatible with Connect. Proceed to Step 19.

If you are using Windows NT and the check box was selected, the Pumpware Module starts, verifies the PassageWay link, and then checks the firmware version. If the firmware is current, the Pumpware window appears. Proceed to Step 22.

If the firmware is not current, a dialog box appears, stating that the PassageWay firmware is not fully compatible with the Pumpware Module. Proceed to Step 19.

If the check box was not selected, the View README file dialog box appears. If you want to view the Readme file now, make sure the check box is selected. (This check box is selected by default.) If you do not want to view the Readme file now, make sure the check box is not selected. Proceed to Step 23.

19. Choose the Yes button to update the PassageWay firmware now.

A dialog box appears, stating that the PassageWay firmware is about to be downloaded.

 **NOTE:**

You will be unable to make or receive any calls during the download. The download process takes several minutes.

20. Hang up any calls that are on your telephone, and then choose the OK button.

The firmware is downloaded to the PassageWay adapter or 8411 telephone. A window displays the status of the download.

If the download was successful, a message box appears, stating that the download was successful.

If the download was unsuccessful, a dialog box appears, stating that an error occurred during the procedure and prompting you to repeat the download procedure. Choose the Retry button and repeat the download procedure.

21. Choose the OK button.

Depending on your version of Windows, Connect or the Pumpware Module verifies the PassageWay link. While the PassageWay link is verified, the mouse arrow becomes an hourglass. When Connect or the Pumpware Module is finished verifying the link, the hourglass becomes an arrow again. The PassageWay link verification message box remains on your screen. Proceed to Step 22.

22. If you are using Windows 95, click on the Connect button on the bottom of your screen to open the Connect window, and then select **Exit** from the File menu in Connect to close Connect.

If you are using Windows NT, select **Exit** from the File menu in the Pumpware window to close the Pumpware Module.

The View README File dialog box appears. If you want to view the Readme file now, make sure the check box is selected. (This check box is selected by default.) If you do not want to view the Readme file now, make sure the check box is not selected.

23. Choose the Finish button.

If the *Readme file* check box was selected, the Notepad window appears, displaying the contents of the Readme file. Proceed to Step 24.

If the *Readme file* check box was not selected, the About To Restart Windows message box appears. Proceed to Step 25.

24. When you are finished reading the Readme file, select **Exit** from the File menu to close the Notepad window.

 **NOTE:**

If you have any other Notepad windows open, you must close all of them now. The installation will not continue until all Notepad windows are closed.

The About To Restart Windows message box appears.

25. Choose the OK button.

The Install dialog box appears.

26. Remove the diskette from the diskette drive (if you are installing from diskette), and choose the OK button.

Depending on your version of Windows, either the system or Windows restarts.

The PassageWay Service Provider is now installed.

If you need to modify any of the information for your telephone (for example, lines or features are added to or removed from your telephone), run the PassageWay Configurator. The PassageWay Configurator is located in the application folder that contains the PassageWay Service Provider. (The default application folder is `PassageWay for DEFINITY`.)



**NOTE:**

If you experience any difficulties running telephony applications, ask your DEFINITY System Manager to check the administration of your telephone and then run the PassageWay Configurator again to correct any errors you may have made.

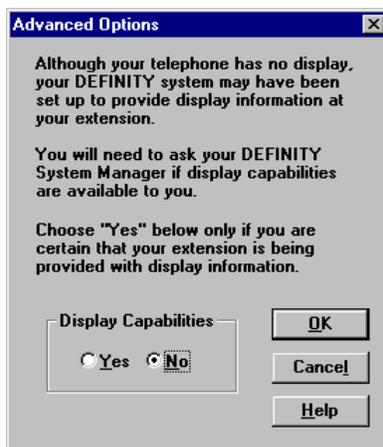
## Configuring 6400 Series Telephones

If you are using a 6400 Series telephone, perform the following steps to configure your telephone:

1. From the Telephone Models dialog box, select the telephone you are using, and then choose the Continue button.

Depending on the type of telephone you selected, one of the following dialog boxes appears:

- If you selected a 6402, 6408, or 6408+ telephone, the Advanced Options dialog box appears.



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Figure 2-10. Sample Advanced Options Dialog Box

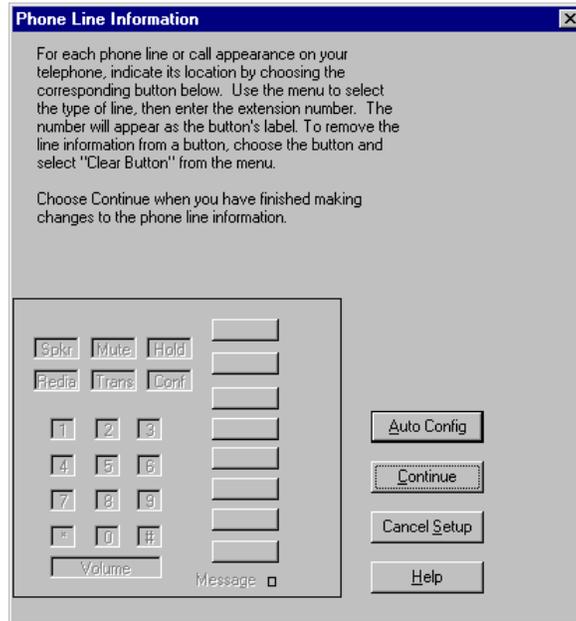
The Advanced Options dialog box gives you the ability to use display features such as caller ID. Using this dialog box, you can specify that your extension has display capabilities even though your telephone does not have a display. However, in order for your extension to have these display capabilities, your DEFINITY System Manager must administer you extension for display capabilities.

Perform the following steps:

- i. Specify whether your extension has display capabilities.  
Choose the *Yes* option button if your extension has display capabilities. Otherwise, choose the *No* option button.
- ii. Choose the OK button.

The Phone Line Information dialog box appears (Figure 2-11).

- If you selected a 6400 Series telephone other than a 6402, 6408, or 6408+ telephone, the Phone Line Information dialog box appears.



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**Figure 2-11. Sample Phone Line Information Dialog Box for a 6408D Telephone**

This dialog box presents a representation of the buttons on your telephone.

If your company has a DEFINITY G3 V5 or later system, the PassageWay Configurator can automatically download the following information for your telephone from the DEFINITY system via the Auto Config button:

- the location and type (that is, primary line, bridged line, or monitored line) of call appearances on your telephone.
- the location of features assigned to buttons on your telephone.
- the feature access codes for certain features that are not programmed as buttons on your telephone.

If you want to configure your telephone automatically via the Auto Config button, you must:

- have a display telephone. However, you can use a non-display telephone if your company's DEFINITY System Manager administers your extension as a display telephone. Consult your DEFINITY System Manager. If you have a non-display telephone, you must also use the Advanced Options dialog box to specify that your extension has display capabilities even though your telephone does not have a display



**NOTE:**

You cannot automatically download the configuration information for your telephone if you have a 6402 telephone or a 6402D telephone.

- know the PASTE feature access code for your DEFINITY system. You must contact your DEFINITY System Manager for this feature access code.

- have a Next feature button administered on your telephone, depending on your type of telephone. If you have a 6400 Series telephone without a display, you must have a Next feature button administered on your telephone. However, if you have a 6400 Series telephone with a display, you do not need a Next feature button administered on your telephone.

If you do not use the Auto Config button, you will use the Phone Line dialog box to specify the location and type for each call appearance on your telephone. You can specify the following types of call appearances:

- Primary Line, which is the extension of your telephone.
- Bridged Line, which is the extension of another person's telephone to which you have full access (that is, you can “bridge” onto calls appearing at that person's telephone).
- Monitored Line, which is the extension of another person's telephone for which you can monitor the status (that is, in use, on hold, or inactive).

2. Perform one of the following steps:

- If you want to manually configure the PassageWay Configurator, proceed to Step 3.
- If you want to automatically configure the PassageWay Configurator, perform the following steps:
  - a. If you have a 6400 Series telephone with a display, proceed to Step c.

If you have a 6400 Series telephone without a display, choose the button where the Next feature button is located on your telephone.

A submenu appears.

- b. Choose **Next**.

The Next label appears on the button you selected.

- c. Choose the Auto Config button.

The PASTE Requirements dialog box appears, stating the requirements for using this feature. If your system meets the requirements, proceed to Step d. Otherwise, choose the Cancel button and proceed to Step 3 to manually configure the PassageWay Configurator.

- d. Choose the OK button.

The Enter PASTE Feature Access Code dialog box appears. You must enter the PASTE feature access code for your DEFINITY system. Without this feature access code, the PassageWay Configurator cannot download your telephone's configuration information from the DEFINITY system. Consult your DEFINITY System Manager to get this feature access code.

- e. Enter the PASTE feature access code, and then choose the Continue button.

The PASTE Download dialog box appears, and the OK button is disabled.



**NOTE:**

The download will take several minutes.

- f. Choose the Begin button.

The configuration information is downloaded from the DEFINITY system. If you have a PassageWay adapter installed, you may hear some dialing occur during the download.

When the download is complete, the OK button is enabled.

- g. Choose the OK button.

The Feature Access Codes dialog box appears, displaying the feature access codes for your DEFINITY system. You cannot change any of this information during this session. To change this information, you must restart the PassageWay Configurator.

- h. Choose the Continue button.

The PassageWay Configurator - Complete message box appears.

- i. Proceed to Step 14.

3. Choose the location of a call appearance on your telephone.

A submenu appears displaying "Clear Button," "Primary Line," "Bridged Line," "Monitored Line," and "Cancel."

 **NOTE:**

Make sure you specify the correct location and type of each call appearance on your telephone. If you incorrectly specify any of this information, your system will not work as expected.

4. Choose the appropriate type of call appearance for the selected button.

If you select **Clear Button**, the programming (if any) and label (if any) are removed from that button.

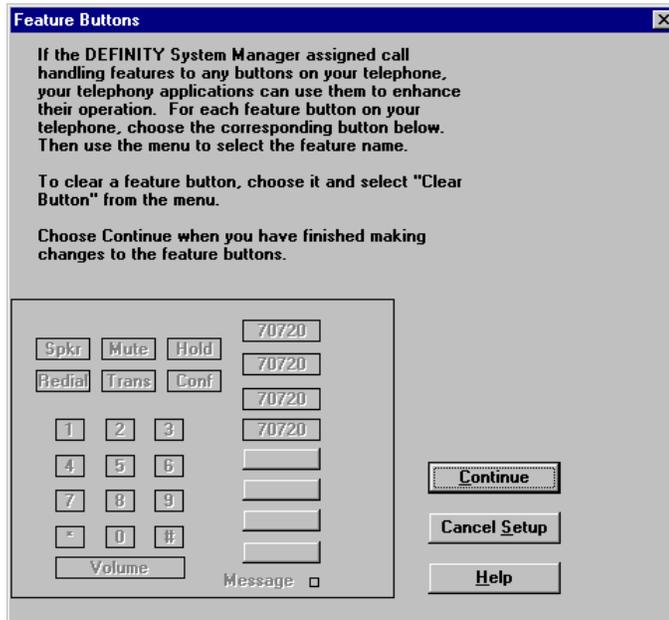
If you select **Cancel**, the submenu closes, and the programming for the selected button is not changed.

If you select one of the other options, another dialog box appears. You must enter the appropriate information in that dialog box, and then choose the OK button in that dialog box.

5. Repeat Steps 3 and 4 for any other call appearances on your telephone.

6. When you are finished, choose the Continue button.

The Feature Buttons dialog box appears.



---

**Figure 2-12. Sample Feature Buttons Dialog Box**



**NOTE:**

The Feature Buttons dialog box only shows the buttons on your telephone to which features can be programmed. This dialog box does not show the soft keys on your telephone (if available).

Using this dialog box, you specify the location of call handling features assigned to buttons on your telephone by the DEFINITY System Manager. By specifying the locations of feature buttons, other telephony applications can use these call handling features to enhance their operation.

The PassageWay Service Provider can recognize the following call handling features programmed to your telephone:

- Auto Call Back
- Call Answer Back
- Call Forward
- Call Information
- Call Park
- Call Pickup
- Drop



**NOTE:**

You should have a Drop feature button programmed on your telephone. Consult your DEFINITY System Manager.

- Inspect
- Leave Word Calling
- Leave Word Cancel
- Normal (if supported by your telephone)
- Release
- Send All Calls
- Speed Call Button
- Speed Call Program

 **NOTE:**

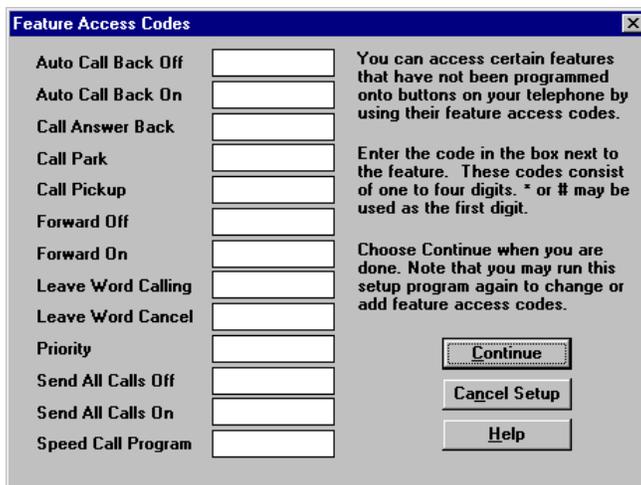
- Features that cannot be programmed to buttons on your telephone are disabled (that is, you cannot program these features).
- Make sure you specify the correct type and location of each feature assigned to buttons on your telephone. If you incorrectly specify any of this information, your system will not work as expected.

7. Choose a button where a feature is assigned.

A submenu appears, displaying the following options:

- Clear Button
- Auto Call Back
- Call Answer Back
- Call Forward
- Call Information
- Call Park
- Call Pickup
- Drop
- Inspect
- Leave Word Calling
- Leave Word Cancel
- Normal
- Release
- Send All Calls
- Speed Call Button

- Speed Call Program
  - Cancel
8. Choose the appropriate feature for the selected button.  
The label for the selected feature appears on the button.
  9. Repeat Steps 7 and 8 for any other buttons.
  10. When you are finished, choose the Continue button.  
The Feature Access Codes dialog box appears.



---

Figure 2-13. Feature Access Codes Dialog Box

Using this dialog box, you can program the following features to your telephone:

- Auto Call Back Off
- Auto Call Back On
- Call Answer Back
- Call Park
- Call Pickup
- Forward Off
- Forward On
- Leave Word Calling
- Leave Word Cancel
- Priority
- Send All Calls Off
- Send All Calls On
- Speed Call Program

 **NOTE:**

- Before you can program these features to your telephone, you must know the associated feature access codes. If you incorrectly specify this information, your system will not work as expected. Consult your DEFINITY System Manager for these access codes.
  - Features that your telephone does not support are disabled (that is, you cannot program these features).
11. In the box to the right of the feature you want to program, enter the access code for that feature.
  12. Repeat Step 11 for any other features you want to program.

13. When you are finished, choose the Continue button.

The PassageWay Configurator - Complete message box appears.

14. Choose the OK button.

The Configuration Complete message box appears.

15. Choose the OK button.

The Verify Firmware Version dialog box appears. If you want to verify that your PassageWay adapter has current firmware, make sure the check box is selected. (This check box is selected by default.) If the firmware in your PassageWay adapter is not current, you may be unable to make and receive calls with Telephony Manager. By selecting this check box, the version of the firmware in your PassageWay adapter will be checked.

If you are using Windows 95, the Connect application will be started, and it will check the version of the firmware in your PassageWay adapter. If you are using Windows NT Workstation 4.0 or later or Windows NT Server 4.0 or later, the Pumpware Module will be started, and it will check the version of the firmware in your PassageWay adapter. If the firmware is not current, Connect or the Pumpware Module will "pump" new firmware to the PassageWay adapter.

16. Choose the Next button.

If you are using Windows 95 and the check box was selected, Connect starts, verifies the PassageWay link, and then checks the firmware version. If the firmware is current, the Connect button appears at the bottom of your screen. Proceed to Step 20.

If the firmware is not up-to-date, a Connect dialog box appears, stating that the PassageWay firmware is not fully compatible with Connect. Proceed to Step 17.

If you are using Windows NT and the check box was selected, the Pumpware Module starts, verifies the PassageWay link, and then checks the firmware version. If the firmware is current, the Pumpware window appears. Proceed to Step 20.

If the firmware is not up-to-date, a Pumpware Module dialog box appears, stating that the PassageWay firmware is not fully compatible with the Pumpware Module. Proceed to Step 17.

If the check box was not selected, the View README file dialog box appears. If you want to view the Readme file now, make sure the check box is selected. (This check box is selected by default.) If you do not want to view the Readme file now, make sure the check box is not selected. Proceed to Step 21.

17. Choose the Yes button to update the PassageWay firmware now.

A dialog box appears, stating that the PassageWay firmware is about to be downloaded.

 **NOTE:**

You will be unable to make or receive any calls during the download. The download process takes several minutes.

18. Hang up any calls that are on your telephone, and then choose the OK button.

The firmware is downloaded to the PassageWay adapter. A window displays the status of the download. The download process takes several minutes.

If the download was successful, a message box appears, stating that the download was successful.

If the download was unsuccessful, a dialog box appears, stating that an error occurred during the procedure and prompting you to repeat the download procedure. Choose the Retry button and repeat the download procedure.

19. Choose the OK button.

Depending on your version of Windows, Connect or the Pumpware Module verifies the PassageWay link. While the PassageWay link is verified, the mouse arrow becomes an hourglass. When Connect or the Pumpware Module is finished verifying the link, the hourglass becomes an arrow again. The PassageWay link verification message box remains on your screen. Proceed to Step 20.

20. If you are using Windows 95, click on the Connect button on the bottom of your screen to open the Connect window, and then select **Exit** from the File menu in Connect to close Connect.

If you are using Windows NT, select **Exit** from the File menu in the Pumpware window to close the Pumpware Module.

The View README File dialog box appears. If you want to view the Readme file now, make sure the check box is selected. (This check box is selected by default.) If you do not want to view the Readme file now, make sure the check box is not selected.

21. Choose the Finish button.

If the *Readme file* check box was selected, the Notepad window appears, displaying the contents of the Readme file. Proceed to Step 22.

If the *Readme file* check box was not selected, the About To Restart Windows message box appears. Proceed to Step 23.

22. When you are finished reading the Readme file, select **Exit** from the File menu to close the Notepad window.

 **NOTE:**

If you have any other Notepad windows open, you must close all of them now. The installation will not continue until all Notepad windows are closed.

The About To Restart Windows message box appears.

23. Choose the OK button.

The Install dialog box appears.

24. Remove the diskette from the diskette drive (if you are installing from diskette), and choose the OK button.

Depending on your version of Windows, either the system or Windows restarts.

The PassageWay Service Provider is now installed.

If you need to modify any of the information for your telephone (for example, lines or features are added to or removed from your telephone), run the PassageWay Configurator. The PassageWay Configurator is located in the application folder that contains the PassageWay Service Provider. (The default application folder is `PassageWay for DEFINITY`.)

 **NOTE:**

If you experience any difficulties running telephony applications, ask your DEFINITY System Manager to check the administration of your telephone and then run the PassageWay Configurator again to correct any errors you may have made.

## Installing the Telephony Manager Software

---

This section describes how to install Telephony Manager.

To install Telephony Manager:

1. Start Windows (if it is not running already).
2. Shut down all applications running on your PC.
3. If you are installing from CD-ROM, insert the Telephony Manager CD-ROM into the CD-ROM drive of your PC. If the Autorun feature is enabled on your PC, the PassageWay Setup dialog box appears. Proceed to Step 6.

If you are installing from a shared directory on a network server, proceed to Step 4.

If you are installing from diskette, insert Telephony Manager diskette #1 into the diskette drive of your PC.

4. Double-click on the My Computer icon on your desktop.

The My Computer window appears.

5. Depending on whether you are installing from a CD-ROM, a shared directory, or a diskette, perform one of the following steps:
  - If you are installing from CD-ROM, double-click on the CD-ROM icon, and then double click on **start.exe**. The PassageWay Setup dialog box appears.
  - If you are installing from a shared directory, double-click on the network drive icon specified by your Network Administrator, and then double-click on **setup.exe**. The PassageWay Telephony Manager Setup dialog box appears. Proceed to Step 7.

- If you are installing from diskette, double-click on the diskette drive icon, and then double-click on **setup.exe**. The PassageWay Telephony Manager Setup dialog box appears. Proceed to Step 7.
- 6. Select the *PassageWay Telephony Manager* option button, and then choose the OK button.  
The PassageWay Telephony Manager Setup dialog box appears.
- 7. Choose the Next button.  
The Select Destination Directory dialog box appears. This dialog box displays the name of the directory where the Telephony Manager applications will be installed by default.
- 8. If the default directory is unacceptable, choose the Browse button and specify an alternate directory. Otherwise, proceed to Step 9.
- 9. Choose the Next button.  
The Select App Folder dialog box appears. This dialog box displays the name of the application folder to which the Telephony Manager icons will be added. Proceed to Step 10.
- 10. If the default application folder is unacceptable, enter the name of the new folder to be created or select an existing folder. Otherwise, proceed to Step 11.
- 11. Choose the Next button.  
The Creating Short Cuts dialog box appears.
- 12. If you would like to have a short cut for Telephony Manager on the Windows desktop, make sure the first check box is selected. (The check box is selected by default.)
- 13. If you would like to have a short cut for Telephony Manager on the Start menu, make sure the second check box is selected. (The check box is selected by default.)

14. Choose the Next button.

The Add to StartUp dialog box appears.

15. If you would like to have the Anywhere Dialer application added to your Startup folder so that it starts every time you start your system, make sure the first check box is selected. (The check box is selected by default.) Anywhere Dialer allows you to use Telephony Manager to dial telephone numbers that are located in other applications.
16. If you would like to have Telephony Manager added to your Startup folder so that it starts every time you start your system, make sure the second check box is selected.
17. Choose the Next button.

The Ready to Install dialog box appears.

18. Choose the Next button.

The installation program copies files to the destination directory. The installation program displays a message box to inform you of its status as it installs files.

If you are installing from diskette, insert the requested diskette into the PC when prompted, and choose the OK button.

After the software is installed, the Installation Completed dialog box appears. If you want to view the Readme file now, make sure the check box is selected. (This check box is selected by default). If you do not want to view the Readme file now, make sure the check box is not selected.

19. Choose the Finish button.

If the *Readme file* check box was selected, the Notepad window appears, displaying the contents of the Readme file. Proceed to Step 20.

If the *Readme file* check box was not selected, the About To Restart Windows message box appears. Proceed to Step 21.

20. When you are finished reading the Readme file, select **Exit** from the File menu to close the Notepad window.

 **NOTE:**

If you have any other Notepad windows open, you must close all of them now. The installation will not continue until all Notepad windows are closed.

The About To Restart Windows message box appears.

Depending on your system, you may have to restart your PC.

21. Choose the OK button.

If the Install dialog box appears, remove the diskette from the diskette drive (if you are installing from diskette), and choose the OK button.

If the Install dialog box does not appear, the installation is completed.

Telephony Manager is now installed. Proceed to “Starting Telephony Manager.”

## **Starting Telephony Manager**

---

If you did not have a previous version of Telephony Manager installed, the first time you start Telephony Manager you are prompted to configure the following settings:

- the number of primary call appearances on your telephone. You can enter up to 32 call appearances, but no more than 6 call appearances will be displayed in the Telephony Manager window.
- the minimum number or default number of call appearances you want displayed in the Telephony Manager window. These call appearances will be displayed even when there is no corresponding call on your telephone.
- whether you want the size of the Call Appearance area of the Telephony Manager window to change automatically as you make and receive calls. If you enable the Auto-Sizing feature, the Telephony Manager window automatically displays a call appearance for each call that appears at your telephone up to the number of call appearances you specified in the *Number of telephone lines available* setting (that is, the number of primary call appearances on your telephone). When each call disconnects, the call appearance for each call is automatically removed from the Call Appearance area of the Telephony Manager window. The number of call appearances that remains is the minimum number or default number of call appearances you specified. By default, the Auto-Sizing feature is enabled.

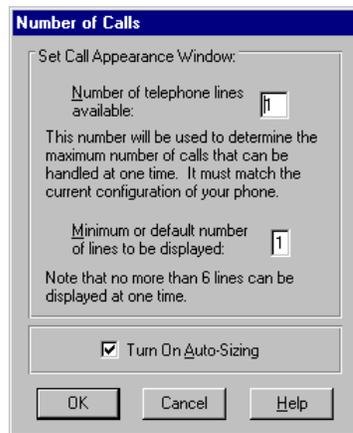
If you disable the Auto-Sizing feature, the maximum number, minimum number, or default number of call appearances you specified appears in the Call Appearance area of the Telephony Manager window, depending on the state of the Maximize/Minimize Call Appearance Area button. These call appearances are displayed even when there are no calls appearing on your telephone.

To start Telephony Manager:

1. Select the Start button.  
The Start menu appears.
2. Select **Programs**.
3. Select the application folder that contains PassageWay Telephony Manager. (The default application folder is PassageWay Telephony Manager.)
4. Select **PassageWay Telephony Manager**.

If you have configured the Dialing Properties for your PC previously, the Number of Calls dialog box appears the first time you start Telephony Manager.

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**Figure 2-14. Number of Calls Dialog Box**

If you have not configured the Dialing Properties for your PC previously, a message box appears, prompting you to configure your dialing locations. Choose the OK button. The Dialing Properties dialog box appears. Perform Steps 3 to 9 in the next section “Configuring the Dialing Information” to configure your dialing locations and then perform the steps in this procedure.

5. In the *Number of telephone lines available* box, enter the number of primary call appearances on your telephone.
6. In the *Minimum or default number of lines to be displayed* box, enter the minimum number of call appearances you want displayed in the Telephony Manager window. These call appearances will be displayed even when there are no calls appearing at your telephone.
7. Select the *Turn On Auto-Sizing* check box to enable or disable the Auto-Sizing feature. A check mark in the *Turn On Auto-Sizing* check box indicates that the Auto-Sizing feature is enabled.

If you want the size of the Telephony Manager window to change automatically as you make and receive calls, enable the Auto-Sizing feature and make sure the Call Appearance area is not maximized (using the Maximize/Minimize Call Appearance Area button in the Telephony Manager window).

If you do not want the size of the Telephony Manager window to change automatically as you make and receive calls, disable the Auto-Sizing feature. If you want to view all of the call appearances, you must maximize the Call Appearance area (using the Maximize/Minimize Call Appearance Area button in the Telephony Manager window).

8. Choose the OK button.

If only one telephony provider is installed on your PC (that is, either the PassageWay Service Provider or the Unimodem Service Provider), the Telephony Manager window appears. Proceed to “Configuring the Dialing Information,” later in this chapter.

If both the PassageWay Service Provider and the Unimodem Service Provider are installed and configured on your PC, a message box appears, stating that you must select a service provider.

Choose the OK button to close the message box. The Connect Using dialog box appears. From the *Line* box, select the telephony provider you want to use, and then choose the OK button. (If you are using Telephony Manager with a DEFINITY system, select **DEFINITY/line**). The Telephony Manager window appears. Proceed to “Configuring the Dialing Information,” later in this chapter.

## **Configuring the Dialing Information**

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This section describes how to configure the following dialing information:

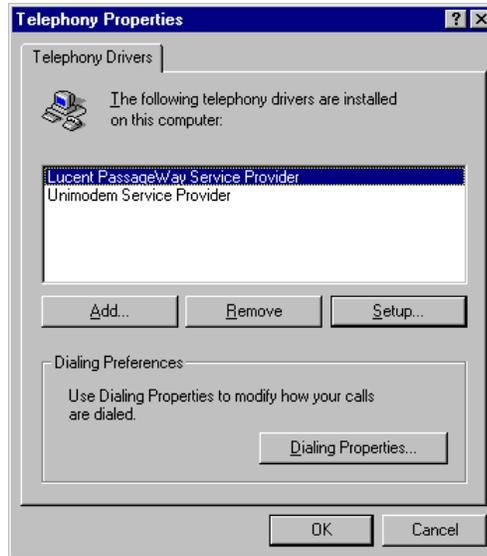
- the digit(s) you must dial before you can make a local call (that is, an external call)
- the digit(s) you must dial before you can make a long-distance call
- the area code for your telephone

To configure the dialing information:

1. From the View menu in the Telephony Manager window, choose **Dialing Properties**.

If you are using Windows NT, the Dialing Properties dialog box appears. Proceed to Step 3.

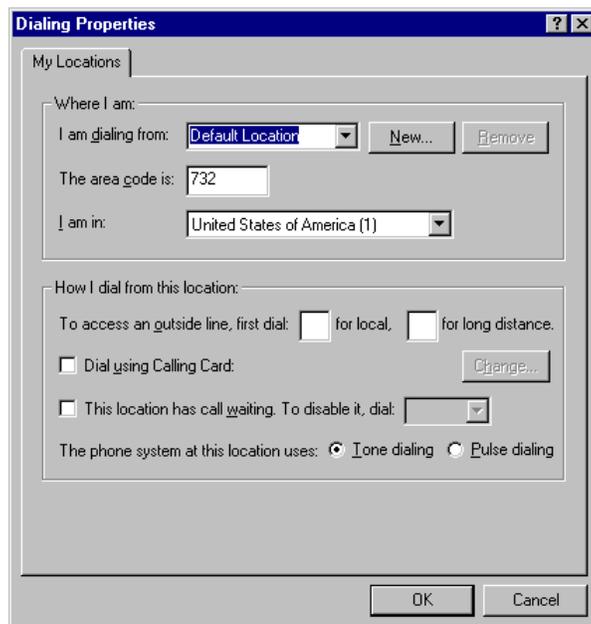
If you are using Windows 95, the Telephony Properties dialog box appears (Figure 2-15).



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**Figure 2-15. Sample Telephony Properties Dialog Box**

2. If you are using Windows 95, choose the Dialing Properties button.  
The Dialing Properties dialog box appears.



---

**Figure 2-16. Sample Dialing Properties Dialog Box**

3. In the *I am dialing from* box, select **Default Location**.
4. In *The area code is* box, enter the area code for your location.
5. In the *I am in* box, select your country.

6. In the *First dial for local* box, enter the digit(s) you must dial to access an outside line for local calls (for example, "9"). Once you enter the digit(s), you do not need to enter them when you make calls from Telephony Manager. Telephony Manager inserts the digit(s) automatically.
7. In the *First dial for long distance* box, enter the digit(s) you must dial to access an outside line for long-distance calls (for example, "9"). Once you enter the digit(s), you do not need to enter them when you make calls from Telephony Manager. Telephony Manager inserts the digit(s) automatically.



**NOTE:**

Do not enter "1" in the *First dial for long distance* box. The "1" is inserted automatically when necessary for a long-distance call.

8. Choose the OK button.  
The Dialing Properties dialog box closes.
9. If you are using Windows 95, choose the OK button in the Telephony Properties dialog box.

Proceed to "Configuring Telephony Manager and Phonebook Options," later in this chapter.

## **Configuring Telephony Manager and Phonebook Options**

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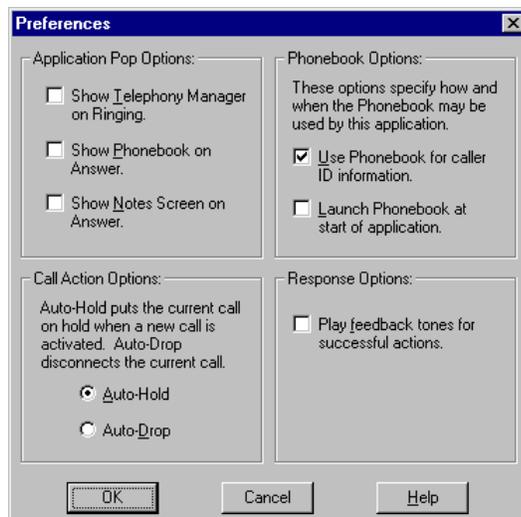
This section describes how to configure the following:

- how you want Telephony Manager and Phonebook to operate when you receive and answer calls.
- whether you want Telephony Manager to match the caller ID for calls against entries in your Phonebook directory.
- whether you want Phonebook to start automatically every time you start Telephony Manager.
- whether you want Telephony Manager to place active calls on hold automatically when you make or answer another call.
- whether you want Telephony Manager to play feedback tones on your sound system speakers when you transfer and conference calls successfully via Telephony Manager.

To configure the Phonebook options:

1. From the Options menu in the Telephony Manager window, choose **Preferences**.

The Preferences dialog box appears.



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**Figure 2-17. Preferences Dialog Box**

2. In the Application Pop Options area, select the *Show Telephony Manager on Ringing* check box to specify whether Telephony Manager will appear when you receive a call. A check mark in the *Show Telephony Manager on Ringing* check box indicates that the Telephony Manager window will appear when you receive a call.

3. Select the *Show Phonebook on Answer* check box to specify whether the Phonebook window will appear when you answer a call. A check mark in the *Show Phonebook on Answer* check box indicates that the Phonebook window will appear when you answer a call.
4. Select the *Show Notes Screen on Answer* check box to specify whether the Log Notes and Details window will appear when you answer a call. A check mark in the *Show Notes Screen on Answer* check box indicates that the Log Notes and Details window will appear when you answer a call.
5. In the Phonebook Options area, select the *Use Phonebook for caller ID information* check box to enable or disable caller ID matching. A check mark in the *Use Phonebook for caller ID information* check box indicates that Telephony Manager will try to match caller ID with Phonebook entries.

If you set Telephony Manager to match caller ID with Phonebook entries, Telephony Manager takes the caller ID (if available) for incoming, external calls and tries to find a matching telephone number in Phonebook. If a match is found, the name and telephone number from Phonebook are displayed for the call in the Call Appearance area of Telephony Manager. If a match is not found, the information from your company's telephone system is displayed for the call in the Call Appearance area.

 **NOTE:**

Caller ID matching is only performed when there is no calling name provided with the incoming call. Also, Phonebook must be running for caller ID matching to work.

If you do not set Telephony Manager to match caller ID with Phonebook entries, the information from your company's telephone system is displayed for the call in the Call Appearance area of Telephony Manager.

6. Select the *Launch Phonebook at start of application* check box to enable or disable Phonebook to start automatically when Telephony Manager starts. A check mark in the *Launch Phonebook at start of application* check box indicates that Phonebook will start automatically when Telephony Manager starts.
7. In the Call Action Options area, select the option button of the action you want Telephony Manager to perform when you make or answer a call while you are already active on a call.

If you want Telephony Manager to place the active call on hold automatically when you make or answer another call, select the *Auto-Hold* option button.

If you want Telephony Manager to drop (that is, hang up) the active call automatically when you make or answer another call, select the *Auto-Drop* option button.

8. In the Response Options area, select the *Play feedback tones for successful actions* check box to enable or disable Telephony Manager to play feedback tones on your sound system speakers when you transfer and conference calls successfully. If you do not have a sound board and speakers, you will not hear these tones. A check mark in the *Play feedback tones for successful actions* check box indicates that Telephony Manager will play the feedback tones on your sound system speakers when you transfer and conference calls successfully.
9. Choose the OK button.

You have finished configuring Telephony Manager and Phonebook. Refer to Chapter 3 to start the Telephony Manager applications. If you need information about features and procedures for Telephony Manager, Phonebook, Log Manager, Anywhere Dialer, Auto-Task Manager, and Script Editor, be sure to consult the online help that is provided with these applications.

 **NOTE:**

If you want to convert your existing telephone number/address files (such as AT&TCall files and Message Manager files) into Phonebook files, select the **Import** command from the File menu in Phonebook. Be sure to check the Phonebook online help for complete instructions on importing existing files into Phonebook. (See the “Import files into a Phonebook directory” topic, which is located under “Exporting/Importing Information” in the online help.)

## **Removing the PassageWay Service Provider**

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Use the following procedure to remove the PassageWay Service Provider.

To remove the PassageWay Service Provider from your PC:

1. Close all PassageWay applications and telephony applications.
2. Select the Start button.  
The Start menu appears.
3. Select **Programs**.
4. Select the application folder that contains the PassageWay Service Provider. (The default application folder is `PassageWay for DEFINITY`.)
5. Select **UnInstaller for Service Provider**.  
The PassageWay for DEFINITY UnInstaller dialog box appears.
6. Choose the Next button.  
The Ready to UnInstall dialog box appears.
7. Choose the Finish button.  
The Perform Uninstall status box appears, displaying the status of the uninstall process. When the uninstall is completed, the UnInstaller Finished message box appears.
8. Choose the OK button.

## **Removing Telephony Manager**

---

Use the following procedure to remove Telephony Manager.

To remove Telephony Manager from your PC:

1. Close all PassageWay applications and telephony applications.
2. Select the Start button.  
The Start menu appears.
3. Select **Programs**.
4. Select the application folder that contains Telephony Manager. (The default application folder is `PassageWay Telephony Manager`.)
5. Select **UnInstaller for Telephony Manager**.  
The PassageWay Telephony Manager UnInstaller dialog box appears.
6. Choose the Next button.  
The Ready to UnInstall dialog box appears.
7. Choose the Finish button.  
The Perform Uninstall status box appears, displaying the status of the uninstall process. When the uninstall is completed, the UnInstaller Finished message box appears.
8. Choose the OK button.

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# Using the Telephony Manager Applications

# 3

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## **Overview**

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This chapter provides an overview of each Telephony Manager application and describes how to start each application. Refer to the online help for each application for the specific tasks you can perform with the application.

## Using Telephony Manager

---

Telephony Manager is a software application that enables you to control telephone calls (both incoming and outgoing) directly from your IBM-compatible PC. From the Telephony Manager window, you can:

- make calls
- answer calls
- view the calling/called party information for each call (referred to as caller ID), if available
- place calls on hold
- hang up calls
- transfer calls
- set up and manage conference calls
- program speed dial buttons
- program call handling features such as Auto Call Back, Call Answer Back, Call Forwarding, Call Park, Call Pickup, Send All Calls, Redirect, and Transfer to AUDIX (depending on your company's DEFINITY system) to Function buttons. You can also program Function buttons with scripts that you created with Script Editor.

Using Telephony Manager, you can place calls from Phonebook, INTUITY Message Manager and its Phonebook (if installed), or Log Manager.

You can also set Telephony Manager to match the telephone numbers of incoming calls with entries in Phonebook. If the telephone number matches an entry in Phonebook (and no caller name is provided with call), Telephony Manager displays the name of the caller, enabling you to know who is calling before you answer your telephone.

## **Starting Telephony Manager**

---

If you specified that you wanted Telephony Manager to be added to your Startup folder during installation, Telephony Manager is started automatically when you start your system.

Depending on the selections you made when you installed Telephony Manager, you can start Telephony Manager in the following ways:

- Double-click on the Telephony Manager desktop shortcut.
- Select **PassageWay Telephony Manager** from the Start menu.
- Perform the following steps:
  1. Select the Start button.  
The Start menu appears.
  2. Select **Programs**.
  3. Select the application folder that contains PassageWay Telephony Manager. (The default application folder is **PassageWay Telephony Manager**.)
  4. Select **PassageWay Telephony Manager**.

The Telephony Manager window appears. Refer to the online help to use Telephony Manager.

## Using Phonebook

---

Phonebook is a card file application that serves as your phone book in which you store names, addresses, and phone numbers. By clicking the mouse, you can place calls directly from Phonebook.

To understand how Phonebook operates, it is helpful to recall how a card file works. A card file is a unit that stores separate index cards, which are sorted according to whatever method you want (usually alphabetical order) and contain specific information you enter. When you obtain a new card file, it is usually empty. You must then enter data on a card and add the card to the card file. Eventually, the card file contains a “bank” of cards. If you want to modify a card in the card file, you must find the card in the card file, remove it, make your changes, and then place it back to its position in the bank. If you want to delete a card, you must locate the card in the card file and remove it (usually, you throw it away).

Each Phonebook directory can be thought of as being a separate card file unit. Each Phonebook directory contains separate data entries, which are referred to as “cards.” Each Phonebook directory can contain a maximum of 20,000 cards. These cards contain specific information that you enter. When you create a new Phonebook directory, it does not contain any cards. The card list box, which lists the cards present in the directory, is empty, and the Card Contents form displays a blank card. As with a card file, you must then access a new, blank card (via the Add button), enter data on the blank card, and add the new card to the Phonebook (via the Save button).

If you want to modify a card in the Phonebook directory, you must find the card that you wish to modify, remove it from the card list box, make your changes to the card (via the Edit button), and then place it back in the card list box (via the Save button). If you want to delete a card, you must locate the card in the card list box and delete it (via the Delete button) from the directory.

Unlike a card file, Phonebook enables you to perform the following tasks quickly and easily:

- place calls directly from a card
- modify the card field labels for all the cards in all of the Phonebook directories
- include notes for each card

You can convert your existing telephone number/address files (such as AT&TCall files and Message Manager files) into Phonebook files by selecting the **Import** command from the File menu in Phonebook. Be sure to check the Phonebook online help for complete instructions on importing existing files into Phonebook. (See the “Import files into a Phonebook directory” topic, which is located under “Exporting/Importing Information” in the online help.)

### **Starting Phonebook**

---

To start Phonebook:

1. Select the Start button.  
The Start menu appears.
2. Select **Programs**.
3. Select the application folder that contains PassageWay Phonebook. (The default application folder is **PassageWay Telephony Manager**.)
4. Select **PassageWay Phonebook**.

The PassageWay Phonebook window appears. Refer to the online help to use Phonebook.

If Telephony Manager is running, you can also start Phonebook by choosing the Phonebook button in the Telephony Manager window.

## Using Log Manager

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Log Manager is an application that stores information on incoming and outgoing calls by automatically generating a call record. The information stored includes the date, time and duration of the call, the number dialed or the number received, the status of the call, the type of call, the subject of the call, and the name of the person. Log Manager allows you to add and modify the notes for a call record.

The Log Manager window displays a list of all call records in the call log. The list contains a one-line summary of each call. You can select a record from the list to review a detailed record for that call, to add or modify notes in the record, or to delete the call record. You can also dial the selected number from the record.

Each call record consists of the following components:

- the name of the caller or called party
- the telephone number of the incoming or outgoing call
- the time the call started
- the duration of the call
- the status of the call
- the type of call including direction
- the subject of the call
- any notes you took about the call

## **Starting Log Manager**

---

To start Log Manager:

1. Select the Start button.  
The Start menu appears.
2. Select **Programs**.
3. Select the application folder that contains PassageWay Log Manager.  
(The default application folder is **PassageWay Telephony Manager**.)
4. Select **PassageWay Log Manager**.

The Log Manager window appears. Refer to the online help to use Log Manager.

If Telephony Manager is running, you can also start Log Manager by choosing the Log button in the Telephony Manager window.

## Using Anywhere Dialer

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Anywhere Dialer is an application that enables you to dial telephone numbers from any Windows application via Telephony Manager.

### Starting Anywhere Dialer

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If you specified that you wanted Anywhere Dialer to be added to your Startup folder during installation, Anywhere Dialer is started automatically when you start your system. When running, the Anywhere Dialer icon appears in the system tray on the Windows Taskbar. Figure 3-1 shows the Anywhere Dialer icon in the system tray.



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**Figure 3-1. Anywhere Dialer Icon in the System Tray**

To start Anywhere Dialer manually:

1. Select the Start button.  
The Start menu appears.
2. Select **Programs**.
3. Select the application folder that contains PassageWay Anywhere Dialer. (The default application folder is **PassageWay Telephony Manager**.)

4. Select **PassageWay Anywhere Dialer**.

The Anywhere Dialer icon appears in the system tray on the Windows Taskbar.

### **Making Calls with Anywhere Dialer**

---

To make a call with Anywhere Dialer:

1. Make sure Anywhere Dialer is running.
2. Open the application that has the telephone number you want to dial.
3. Highlight (that is, select) the telephone number you want to dial.
4. Perform one of the following steps:
  - Double-click on the Anywhere Dialer icon in the system tray on the Windows Taskbar.
  - Right-click the mouse on the Anywhere Dialer icon in the system tray on the Windows Taskbar. A menu appears. Select **Dial Highlighted Text** from the menu.

If the **Confirm Before Dialing** option is not selected in the menu, a call appearance appears in the Telephony Manager window, and the call is placed.

If the **Confirm Before Dialing** option is selected in the menu, the Confirm Double-Click Dialing dialog box appears, displaying the number that will be dialed. Choose the Yes button to dial the number. A call appearance appears in the Telephony Manager window, and the call is placed.

If you do not want the Confirm Double-Click Dialing dialog box to appear every time you use Anywhere Dialer, select the **Confirm Before Dialing** option in the Anywhere Dialer menu. A check next to this option indicates that the dialog box will be displayed when you try to place a call with Anywhere Dialer.

When Anywhere Dialer places a call, the Telephony Manager window becomes active if it is already open (that is, not minimized). If the Telephony Manager window is minimized, it “pops” open automatically when Anywhere Dialer places a call. You can set whether the Telephony Manager window “pops” open if it is minimized when you make calls using Anywhere Dialer. See “Set Telephony Manager to pop on dialing” in the Anywhere Dialer online help.

## Using Script Editor

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Script Editor is an application that enables you to automate routine tasks by creating scripts that you can run with Telephony Manager. For example, using Script Editor, you can program automatic “screen pops,” where your database application searches your files to find a match with the information for the incoming call (such as the caller ID number or caller ID name) automatically. If a match is found, the record containing the matching information in your database application is displayed without you having to perform any actions.

When you start Script Editor, the Script Editor window is empty. At this point, you can create a new script or modify an existing script. You can create your scripts by recording the movements of your mouse or by entering the keystrokes that you want the script to perform. If you create a script by entering keystrokes instead of recording the movements of your mouse, the script will be much more reliable.

Once you create scripts, you can associate them with Function buttons in the Telephony Manager window or incorporate them into auto-tasks using Auto-Task Manager.

For example, suppose you have all of your contact information (that is, names and telephone numbers) in the Microsoft Outlook application. You can create a script that will perform the following actions to give you screen pops on incoming calls:

1. Start the Outlook application
2. Take the caller ID name or caller ID number for the call and search for matching information in Outlook
3. Display the matching record in Outlook (if there is a match)

Once you enter the keystrokes and commands to perform the actions described above, you can incorporate this script into an auto-task in the Auto-Task Manager, enabling you to have Telephony Manager execute this script when a call rings at your telephone or when you answer a call.

### **Starting Script Editor**

---

To start Script Editor:

1. Select the Start button.  
The Start menu appears.
2. Select **Programs**.
3. Select the application folder that contains PassageWay Script Editor. (The default application folder is **PassageWay Telephony Manager**.)
4. Select **PassageWay Script Editor**.

The Script Editor window appears. Refer to the online help to create and modify scripts. Be sure to read the Planning Tips and Recording Tips topics in the online help.

You can also start Script Editor by choosing the ScriptEd button in the Telephony Manager window.

## **Using Auto-Task Manager**

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Auto-Task Manager is an application that enables you to specify criteria (for example, incoming call or outgoing call, calling party number, calling party name, called party number, called party name, or call prompting digits) that will “trigger” tasks to run automatically. For example, suppose you wanted to have certain incoming calls redirected to another extension. Using Auto-Task Manager, you could specify the calls using the person’s name or phone number, and then set those calls to trigger a “redirect” task. The criteria and tasks you specify are known as “auto-tasks.”

Once you create auto-tasks, you add them to an auto-task group, which you can use with Telephony Manager. When an auto-task group is activated (that is, selected to be used by Telephony Manager), any calls you make or receive while Telephony Manager is running will be checked to see if they match the criteria you specified for any of the auto-tasks in the selected auto-task group. Telephony Manager checks the criteria of the auto-tasks in the selected auto-task group in the order in which the auto-tasks are listed in the auto-task group. The first auto-task that matches the criteria (if any) is then run (that is, the actions for the specified auto-task are performed).

You can create a maximum of 200 auto-tasks and 100 auto-task groups. An auto-task can consist of a maximum of 16 actions.

## **Starting Auto-Task Manager**

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To start Auto-Task Manager:

1. Select the Start button.  
The Start menu appears.
2. Select **Programs**.
3. Select the application folder that contains PassageWay Auto-Task.  
(The default application folder is **PassageWay Telephony Manager**.)
4. Select **PassageWay Auto-Task Manager**.

The Auto-Task Manager window appears. Refer to the online help to create, modify, and activate auto-tasks and auto-task groups.

You can also start Auto-Task Manager by choosing the Auto-Task button in the Telephony Manager window.

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# Troubleshooting

# 4

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## Overview

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This chapter provides information that can assist you in solving problems you might encounter when you install, start, and use the Telephony Manager applications. This chapter is divided into the following sections:

- Troubleshooting Telephony Manager
- General Troubleshooting for the PassageWay Service Provider
- PassageWay Adapter LEDs
- Troubleshooting Connect

Refer to the appropriate section to find the information required to solve your particular problem.

If you are using Windows 95, keep in mind that Telephony Manager depends on Connect in order to communicate with your telephone (when used with the PassageWay Service Provider). Connect is installed when you install the PassageWay Service Provider with Windows 95; Connect is not present with Windows NT 4.0 or later. As a result, Connect may be used to help diagnose problems with Telephony Manager.

## Troubleshooting Telephony Manager

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This section presents some common problems that you might encounter while using Telephony Manager.

### **Problem 1: No API is available after installation.**

If Telephony Manager shows the error "No API available" immediately after installation, try rebooting the machine and then restarting Telephony Manager. This will often clear up the problem.

### **Problem 2: When you start Telephony Manager, a message box appears displaying the message: TAPI is not installed or a necessary file is missing or corrupted.**

This message can appear if:

- TAPI.DLL is not installed on your PC.
- TAPI.DLL is corrupted.
- The wrong PassageWay Service Provider platform is installed on your PC.

Uninstall (remove) the PassageWay Service Provider (if installed), restart the system, and then re-install the PassageWay Service Provider. (Refer to Chapter 2 to uninstall and install the PassageWay Service Provider.)

**Problem 3: When you start Telephony Manager, a message box appears displaying the message: There are no telephony service providers available on your computer. A service provider is required for your computer to communicate with your telephone or modem. Please install and configure a service provider and try again.**

This message appears if the PassageWay Service Provider is not installed on your PC.

You must have TAPI and the Unimodem or PassageWay Service Provider (version 2.41 or later) installed on your PC. TAPI is installed automatically when you install the PassageWay Service Provider.

Install and configure the service provider you want to use. If you want to use the PassageWay Service Provider, refer to Chapter 2 to install the PassageWay Service Provider.

**Problem 4: When you start Telephony Manager, a message box appears displaying the message: The telephony service provider previously in use is no longer available. The remaining service provider will be used. Note that changing service providers may affect the availability of certain features in the application.**

This message may appear if either of the following conditions exists:

- You had two service providers installed on your PC, but you uninstalled the service provider that Telephony Manager was using.
- You had only one service provider installed on your PC, but you uninstalled the service provider and then reinstalled it. (In this case, Telephony Manager is looking for the ID that it assigned to the previous installation of the service provider.)

If the service provider that Telephony Manager was using is not installed (that is, you uninstalled the service provider), perform the following steps:

1. Choose the OK button to close the message box.
2. Reinstall the service provider.
3. Restart Telephony Manager.
4. Select the new service provider using the **Change Telephony Provider** option in the View menu.

If the service provider is already installed, choose the OK button in the message box.

**Problem 5: When you start Telephony Manager, a message box appears displaying the message: Cannot initialize the service provider.**

The service provider is not working properly. If you are using the PassageWay Service Provider, uninstall the PassageWay Service Provider, restart the system, and then re-install the PassageWay Service Provider. (Refer to Chapter 2 to uninstall and install the PassageWay Service Provider.)

**Problem 6: When you start Telephony Manager, a message box appears displaying the message: Service Provider not started.**

No service provider is configured. Choose the OK button to close the message box and configure the service provider.

**Problem 7: When you start Telephony Manager, a message box appears displaying the message: There is not enough memory available to run this application. Please close some other applications or restart Windows and try again.**

Close any other applications that may be running and then restart Telephony Manager.

**Problem 8: Telephony Manager starts successfully, but the following message is displayed in the Call Status area at the bottom of the Telephony Manager window: Telephony is not available.**

If you are using the PassageWay Service Provider, there may be a problem with your telephone, the connection between your telephone and your PC, or your company's DEFINITY system. Perform the following steps:

1. Check the connection between your PC and your telephone or PassageWay adapter.
2. Check the connection between the wall jack and your telephone or PassageWay adapter.
3. Restart Telephony Manager.

If this message still appears, contact your DEFINITY System Manager.

If you are not using the PassageWay Service Provider, there may be a problem with your modem, the connection between your modem and your PC or your telephone line. Perform the following steps:

1. Check the connection between your PC and your modem.
2. Check the connection between the wall jack and your modem.
3. If you have an external modem, check that it is plugged in.
4. Restart Telephony Manager.

**Problem 9: Existing calls are not displayed in the Telephony Manager window when you start Telephony Manager.**

Any calls that you make or receive after you start Telephony Manager will appear in the Telephony Manager window.

**Problem 10: The Mute and Volume Control buttons are disabled.**

The Mute button and Volume Control buttons only work with 8411 telephones and Callmaster VI telephones. However, the Mute button will not work with an 8411 telephone if an external speaker is installed.

**Problem 11: During a conference call started by another caller, you are unable to drop/hang up from the call while using the telephone handset.**

If you are participating in a conference call that was started by another caller (that is, you did not start the conference) and you are not using your speakerphone, you will be unable to use Telephony Manager to hang up from the conference. To hang up, you must place the handset back in the cradle.

**Problem 12: During a conference call, the information in the Conference Manager is not updated as participants drop from the call.**

If you have a conference and participants hang up, the Conference Manager will not update the information to reflect the participant(s) that dropped. If all but one of the participants drop (that is, you are now talking to only one participant), the Telephony Manager Switch Information area will change from showing "CONFERENCE" to showing the information for the participant to whom you are talking.

 **NOTE:**

Once participants start dropping from the conference, the Drop Last button in the Conference Manager may not work properly. Additionally, if you are only talking to one participant, the Drop Last button will hang up on that participant and then go off-hook again. Also, choosing the Hangup button in the Telephony Manager window will display the Confirm Drop Conference dialog box, even though you are no longer on a conference.

**Problem 13: The Drop Last button does not function properly in the Conference Manager.**

If you use the Conference Manager, it is possible that you may encounter a problem using the Drop Last feature in the Conference Manager window.

After a conference is established and parties drop off of the conference (that is, the far end party leaves the conference), the Telephony Manager Conference Manager will not update to reflect just the parties that remain on the conference. Additionally, if all but one of the parties drop from the conference, you are no longer in a conference. However, the Conference Manager is still not updated. The problem that exists here is that pressing the Drop Last button will act peculiarly if you are using the speakerphone. It will drop the party to whom you are talking and then go back off-hook.

**Problem 14: Starting conferences from your telephone.**

The conference will be tracked by the Telephony Manager except Drop Last in the Conference Manager may not work properly. To ensure that Telephony Manager handles conference calls properly, you should establish the conference using Telephony Manager.

**Problem 15: Incoming calls are treated as outgoing calls.**

A few types of calls that you might consider to be incoming calls are actually treated by Telephony Manager as if they were outgoing calls. These include internal auto-answer, call pickup, and answer back (for parked calls). The impact is that they will not pop Telephony Manager on ringing, nor cause Phonebook or Notes to pop on answer (if these options are set). Also, in Log Manager, these calls will show up as outgoing calls.

**Problem 16: Call Forwarding is not supported on phones without speakerphones.**

Due to a limitation with the Service Provider, call forwarding is not supported on telephones that do not have speakerphones. This is true even if you go off-hook on such a telephone.

Additionally, the Send All Calls (SAC) feature is not supported on these telephones unless a feature button is administered. If you are trying to use the SAC feature solely with a feature access code (FAC) that is defined in the Configurator of the Service Provider, this feature will not work.

**Problem 17: There is a long delay before you are able to place a call on hold.**

Due to a limitation with the PassageWay hardware, you may experience a long delay (around six or more seconds) before you can place a call on hold. This problem is most often seen when trying to place a call after answering an incoming call.

**Problem 18: You are unable to use the Conference and Transfer features.**

If your telephone is configured with one bridged call appearance or multiple bridged call appearances to different extensions, you will be unable to conference and transfer calls using Telephony Manager (and any other TAPI application). This situation will not occur if you have more than one bridged appearance for each number.

**Problem 19: You are unable to drop/hang up a call using a 500A headset adapter.**

If you are using a 500A headset adapter, you will be unable to drop/hang up calls using a TAPI application such as Telephony Manager. (Even if the person you are talking with hangs up, your telephone will still be "off hook.") You must manually disconnect the call.

**Problem 20: You are unable to hear digits being dialed when making calls with Telephony Manager (or other TAPI applications).**

If you have a 7403, 7405, or 7407D01A telephone, you will not hear the digits being dialed when you make calls with TAPI applications such as Telephony Manager. Even though you cannot hear the digits being dialed, the call will be completed properly.

**Problem 21: Calls are not being completed.**

Telephony Manager dials the call, but the call fails (that is, you hear a “fast-busy” signal or an announcement that the call could not be completed). Insert a ^ in front of the number you are dialing and then dial the number. The ^ character disables TAPI from prepending digits for that particular call.

**Problem 22: When you receive a call, two call appearances appear in the Telephony Manager window.**

This situation occurs if you are a member of a call pickup group, and you did not specify the location of the Call Pickup button on your telephone when you configured the PassageWay Service Provider. Both of the call appearances represent the same call. If you answer one of the calls, the other call appearance disappears.

To solve this problem, perform the following steps:

1. From the View menu in Telephony Manager, choose **Telephone Setup**.

The PassageWay Configurator - COM Port dialog box appears.

2. Choose the Continue button until you access the Feature Buttons dialog box.
3. In the Feature Buttons dialog box, choose the button where your Call Pickup button is assigned.

A submenu appears.

4. Choose **Call Pickup**.

The Call Pickup label appears on the button.

5. Choose the Continue button.

The Feature Access Codes dialog box appears.

6. Choose the Continue button.

The PassageWay Configurator - Complete message box appears.

7. Choose the OK button.

8. Restart Telephony Manager.

**Problem 23: You cannot access the Dialpad window when any dialog box is open.**

To use the Dialpad window, you must first close the open dialog box(es).

**Problem 24: You are unable to transfer calls with Telephony Manager when other TAPI applications are also running.**

If you are running Telephony Manager and other TAPI applications (such as Snap) at the same time, and you did not start Telephony Manager first, you will be unable to transfer calls using Telephony Manager. If you are going to use Telephony Manager with other TAPI applications, make sure you start Telephony Manager before the other TAPI applications.

**Problem 25: You have programmed a Function button with the Call Answer Back feature, but this Function button does not work.**

If you are using Windows 95, a Function button programmed with the Call Answer Back feature will not work. However, you can use this feature by programming the feature access code for the Call Answer Back feature as a Speed Dial. When you want to use the Call Answer Back feature, choose the Speed Dial to which you programmed the Call Answer Back feature access code. Consult your DEFINITY System Manager for this access code.

**Problem 26: When you start Phonebook or Log Manager, you receive the following message: Run-Time Error 7 - Out of Memory.**

If you are using Windows 95, there is either not enough memory or not enough hard disk space available to start Phonebook or Log Manager. Close some other applications that are running and then try to start Phonebook or Log Manager. If Phonebook or Log Manager still does not run, free up some disk space and then try to start the application.

If you are using Windows NT 4.0 or later, there is not enough memory available to start Phonebook or Log Manager. Close some applications that are running and then try to start Phonebook or Log Manager.

**Problem 27: When you start Phonebook or Log Manager, you receive the following message: Memory could not be read.**

There is not enough hard disk space available on your Windows NT system to start Phonebook or Log Manager. Free up some disk space and then try to start Phonebook or Log Manager.

**Problem 28: Phonebook is using an old database file.**

When you remove (uninstall) the Telephony Manager software, not all of the files are removed (see "Removing Telephony Manager"). The database files you may have created will remain. The configuration files used by the software will also remain. If you then install the software again, you will find that the Phonebook application will open the old database file. This may be disconcerting if the second installation of the software is in a different directory. If you do not want to use this database, you should create a new database in the desired directory.

**Problem 29: When you start Log Manager, an error message appears indicating that a database is corrupted.**

Call the Lucent Technologies Customer Care Center at 1 800 242-2121.

**Problem 30: Scripts you created with Script Editor are not working properly.**

If your script is not working properly, try to identify where the script is failing, and insert a delay at those points in the script. If this does not solve your problem, try recreating the script without using your mouse (that is, use keystrokes and commands). Scripts that consist of keystrokes and commands are more reliable than scripts that contain recorded mouse movements.

Also, open your applications before you start recording. Using desktop short cuts and the Start menu during recording may cause problems with your script.

## **General Troubleshooting for the PassageWay Service Provider**

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This section presents some common problems you might encounter while using TAPI applications such as Telephony Manager with the PassageWay Service Provider. For each problem, a strategy is presented that you can follow to isolate and solve your problem.

### **Problem 1: When you start the PassageWay Configurator, a message box appears displaying the message: `PassageWay Link Not Found`.**

This message box appears if at least one of the following conditions exists:

- The COM port you selected in the PassageWay Configurator - COM Port dialog box is not the COM port to which you connected the 8411 telephone, Callmaster VI telephone, or PassageWay adapter.
- A telephony application is currently running on your PC.
- There is a problem with the connection between your PC and your 8411 telephone, Callmaster VI telephone, or PassageWay adapter.
- You are using a PassageWay adapter that is incompatible with your telephone (that is, you are using a 4-wire PassageWay adapter with a 2-wire telephone, or you are using a 2-wire PassageWay adapter with a 4-wire telephone).
- Your PassageWay adapter is not receiving power.
- Your PassageWay adapter is defective.

Perform the following steps:

1. Make sure no telephony applications are running on your PC. If any telephony applications are running, close them.
2. Look at the back of your PC and verify the COM port to which the serial cable from your 8411 telephone, Callmaster VI telephone, or PassageWay adapter is connected.
3. Check the PC-side and telephone-side cabling associated with your 8411 telephone, Callmaster VI telephone, or PassageWay adapter. Insure that all of the cables are completely inserted into the correct jacks. If you have a PassageWay adapter, refer to "Installing the PassageWay Adapter" in Chapter 2. If you have an 8411 telephone, refer to "Connecting Your 8411 Telephone to Your PC" in Chapter 2. If you have a Callmaster VI telephone, refer to "Connecting Your Callmaster VI Telephone to Your PC" in Chapter 2.
4. If you have a PassageWay adapter, look at the LEDs on top of the adapter.

If the LED is "off," your telephone system may not support the remote powering of adjuncts. Consult your DEFINITY System Manager to obtain the proper wall power supply to power your PassageWay adapter or to correct any wiring problems that may be the cause. If you already have an auxiliary power supply installed, make sure it is installed properly. Refer to "Installing the PassageWay Adapter" in Chapter 2.

If both LEDs are "blinking," perform the following steps:

- a. Determine whether you have a 2-wire or 4-wire telephone.
  - If you have a 6400 Series telephone, you have a 2-wire telephone, which requires a 2-wire PassageWay adapter.
  - If you have a 7400 Series telephone, you have a 4-wire telephone, which requires a 4-wire PassageWay adapter.

- If you have an 8400 Series telephone (with display), press the following buttons on your telephone dialpad: SHIFT MUTE # #.

The bottom, left-corner of the telephone's display will show either `LINK : 2W` or `LINK : 4W`. `LINK : 2W` indicates that you have a 2-wire telephone, while `LINK : 4W` indicates that you have a 4-wire telephone.

- b. Look at the bottom of your PassageWay adapter to determine whether it is a 2-wire adapter or a 4-wire adapter. If the label states, "PassageWay Solution Two-Wire DCP Interface," you have a 2-wire PassageWay adapter, which only operates with 2-wire telephones. If the label does not state, "PassageWay Solution Two-Wire DCP Interface," you have a 4-wire PassageWay adapter, which only operates with 4-wire telephones.

Contact your DEFINITY System Manager if your PassageWay adapter is incompatible with your telephone.

5. Choose the OK button in the PassageWay Link Not Found message box, and then choose the Auto Detect button in the PassageWay Configurator - COM Port dialog box.

**Problem 2: You are unable to dial from a TAPI-compliant application.**

Perform the following steps:

1. Start the PassageWay Configurator and verify that the PassageWay Service Provider was installed and configured properly.
2. If you are using Windows NT, proceed to Step 3.

If you are using Windows 95, close all telephony applications, and then run Connect. Select `Test Link` from the Setup menu, and follow the instructions on the screen.

 **NOTE:**

Connect is only available on Windows 95.

If the PassageWay Link Test fails, note the error number and refer to the next section, "Troubleshooting Connect."

If all tests pass successfully, run the TAPI-compliant application.

3. Verify that you have an up-to-date version of the PassageWay firmware in your 8411 telephone or PassageWay adapter. You must have an up-to-date version of the PassageWay firmware before you can use any TAPI-compliant applications.



**NOTE:**

If you have a Callmaster VI telephone, you cannot update the PassageWay firmware.

To verify the PassageWay firmware:

- a. Select the Start button.

The Start menu appears.

- b. Select **Programs**.

- c. Select the application folder that contains the PassageWay Service Provider. (The default application folder is `PassageWay for DEFINITY`.)

- d. Perform one of the following steps:

- If you are using Windows 95, select **PassageWay Connect**.

If the Connect button appears at the bottom of your screen, the PassageWay firmware is up to date. Close Connect.

If a dialog box appears informing you that the PassageWay firmware is out of date, choose the Yes button to load (or "pump") the new PassageWay firmware to the 8411 telephone or PassageWay adapter. Follow the on-screen prompts to "pump" the new firmware. When you are finished, close Connect.

- If you are using Windows NT 4.0 or later, select **PassageWay Pumpware Module**.

A dialog box appears informing you whether the PassageWay firmware is out of date.

If the dialog box states that the PassageWay firmware is out of date, choose the Yes button to load (or "pump") the new PassageWay firmware to the 8411 telephone or PassageWay adapter.

If the dialog box states that the PassageWay is up to date, choose the No button.

The PassageWay firmware is now verified.

**Problem 3: You are unable to hang up calls from your TAPI application using a 6400 Series telephone.**

Perform the following steps:

1. Start the PassageWay Configurator and verify that you specified a Drop button in the Feature Buttons dialog box. Also verify that you specified the correct location of the Drop button in the Feature Buttons dialog box.
2. Contact your DEFINITY System Manager to verify that a Drop feature button is programmed on your telephone.

**Problem 4: A message box appears displaying the message: A required component of the DEFINITY Service Provider is corrupt. The registry does not contain a SwitchType setting. Re-installing the DEFINITY software may fix this problem.**

Uninstall and reinstall the PassageWay Service Provider.

**Problem 5: A message box appears displaying the message:**

A required component of the DEFINITY Service Provider is corrupt. The registry contains an inconsistent SwitchType. Re-installing the DEFINITY software may fix this problem.

Uninstall and reinstall the PassageWay Service Provider.

**Problem 6: A message box appears displaying the message:**

A required component of the DEFINITY Service Provider is corrupt. The registry does not contain a valid PassageWayPath setting. Re-installing the DEFINITY software may fix this problem.

Uninstall and reinstall the PassageWay Service Provider.

**Problem 7: A message box appears displaying the message:**

A required component of the DEFINITY driver (file name) is missing. Re-installing the DEFINITY software may fix this problem.

Uninstall and reinstall the PassageWay Service Provider.

**Problem 8: A message box appears displaying the message:**

A required component of the DEFINITY driver (file name) is corrupt. Re-installing the DEFINITY software may fix this problem.

Uninstall and reinstall the PassageWay Service Provider.

**Problem 9: A message box appears displaying the message:**

A required component of the DEFINITY driver (file name) could not initialize properly. Check your COM port setting.

Uninstall and reinstall the PassageWay Service Provider.

**Problem 10: A message box appears displaying the message:**

**A required component of the DEFINITY driver (file name) could not initialize properly. Re-installing the DEFINITY software may fix this problem.**

Uninstall and reinstall the PassageWay Service Provider.

**Problem 11: A message box appears displaying the message:**

**A required registry entry of the DEFINITY Service Provider is missing (DEFINITY). Re-installing the DEFINITY software may fix this problem.**

Reinstall the PassageWay Service Provider.

**Problem 12: A message box appears displaying the message: The DEFINITY adapter firmware is out of date. Please upgrade the firmware.**

Choose the OK button and update the PassageWay firmware.

To update the PassageWay firmware, perform the following steps:

1. Select the Start button.

The Start menu appears.

2. Select **Programs**.

3. Select the application folder that contains the PassageWay Service Provider. (The default application folder is PassageWay for DEFINITY.)

4. Perform one of the following steps:

- If you are using Windows 95, select **PassageWay Connect**.

A dialog box appears informing you that the PassageWay firmware is out of date.

Choose the Yes button to load (or "pump") the new PassageWay firmware to the 8411 telephone or PassageWay adapter.

Follow the on-screen prompts to "pump" the new firmware.

When you are finished, close Connect.

- If you are using Windows NT 4.0 or later, select **PassageWay Pumpware Module**.

A dialog box appears informing you that the PassageWay firmware is out of date.

Choose the Yes button to load (or "pump") the new PassageWay firmware to the 8411 telephone or PassageWay adapter.

Follow the on-screen prompts to "pump" the new firmware.

## **PassageWay Adapter LEDs**

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This section describes the error conditions represented by the LEDs on top of the PassageWay adapter.

### **Problem 1: All LEDs are "off."**

This indicates that your PassageWay adapter is not receiving power. Your telephone system wiring may not support the remote powering of adjuncts. Consult your DEFINITY System Manager to obtain the proper wall power supply to power your PassageWay adapter or to correct any wiring problems that may be the cause.

If you already have an auxiliary power supply installed, make sure it is installed properly. Refer to "Installing the PassageWay Adapter" in Chapter 2.

### **Problem 2: Both LEDs are "blinking."**

This indicates that your PassageWay adapter is incompatible with your telephone (that is, you are using a 4-wire PassageWay adapter with a 2-wire telephone, or you are using a 2-wire PassageWay adapter with a 4-wire telephone).

1. Determine whether you have a 2-wire or 4-wire telephone.
  - If you have a 6400 Series telephone, you have a 2-wire telephone, which requires a 2-wire PassageWay adapter.
  - If you have a 7400 Series telephone, you have a 4-wire telephone, which requires a 4-wire PassageWay adapter.
  - If you have an 8400 Series telephone (with display), press the following buttons on your telephone dialpad: SHIFT MUTE # #.

The bottom, left-corner of the telephone's display will show either `LINK: 2W` or `LINK: 4W`. `LINK: 2W` indicates that you have a 2-wire telephone, while `LINK: 4W` indicates that you have a 4-wire telephone.

2. Look at the bottom of your PassageWay adapter to determine whether it is a 2-wire adapter or a 4-wire adapter. If the label states, "PassageWay Solution Two-Wire DCP Interface," you have a 2-wire PassageWay adapter, which only operates with 2-wire telephones. If the label does not state, "PassageWay Solution Two-Wire DCP Interface," you have a 4-wire PassageWay adapter, which only operates with 4-wire telephones.

Contact your DEFINITY System Manager if your PassageWay adapter is incompatible with your telephone.

## Troubleshooting Connect

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This section presents some common problems that you might encounter while using Connect. For each problem, a strategy is presented that you can follow to isolate and solve your problem.



**NOTE:**

Connect is only present with Windows 95. Connect is not present with Windows NT 4.0 or later.

**Problem 1: Connect displays the message: This application requires a serial port and terminates.**

This message indicates that Connect cannot find an available serial port on your system. This message will most likely appear immediately after you have completed the installation of the PassageWay software using the setup program since this is the first time Connect tries to run.

If you do not have an available serial port (for example, if you have only one serial port, and this port is being used by your mouse), you will need to add an additional serial port to your PC in order to use the PassageWay Service Provider. Your computer vendor can assist you in obtaining the necessary hardware to add another serial port. See Appendix A for more information.

If you are certain that you have an available serial port (other than a port being used by your mouse), the available port might be disabled, in which case Connect will be unable to detect its presence.

If you are able to determine that your PC has no active COM ports, or only COM1 is active (but is used by your mouse under Windows), you will need to either purchase an additional COM port for your PC or consult your PC's hardware documentation to determine how to re-enable a COM port that might be disabled. (Refer to Appendix A for information on COM ports.) Re-enabling a COM port may require changing the placement of a jumper on your computer's system board or running your PC's setup program.

**Problem 2: Connect displays its Communications Error dialog box within a few seconds after it is run.**

This message indicates that Connect cannot communicate properly with your telephone. This message can appear for one of the following reasons:

- If you have an 8411 telephone or Callmaster VI telephone, your telephone is not connected properly to your PC serial port. If you do not have an 8411 telephone or Callmaster VI telephone, your PassageWay adapter is not connected properly to your PC serial port and/or your telephone.
- Your 8411 telephone, Callmaster VI telephone, or PassageWay adapter is not receiving power.
- Connect is administered to use a different serial port than the one to which the telephone is connected.
- One or more cables and/or adapters are damaged, not properly attached, or not compatible with the PassageWay Service Provider.

You should follow the instructions provided in this dialog box to troubleshoot the problem. These instructions ask you to verify the following items:

- The PC-side and phone-side cabling are connected properly.

If you have an 8411 telephone or Callmaster VI telephone, insure that the phone cord between the wall jack and the jack marked "Line" on the telephone is completely inserted into both the wall jack and the jack marked "Line" on the telephone. A proper connection is confirmed by a tactile "click" as the cord is fully inserted.

If you do not have an 8411 telephone or Callmaster VI telephone, insure that the 7-foot phone cord between the jack marked "Line" on the telephone and the jack marked "Phone" on the PassageWay adapter is completely inserted into both jacks. A proper connection is confirmed by a tactile "click" as the cord is fully inserted.

Also insure that any RS-232 cables and adapters that you might be using to connect the telephone or PassageWay adapter to your PC are NOT null modem cables (a special type of cable), and that the total length of the combined RS-232 cabling does not exceed about 40 feet (the length should be as short as is convenient for your setup).

- Insure your 8411 telephone or Callmaster VI telephone is receiving power.

If your 8411 telephone or Callmaster VI telephone is not receiving power, you should consult your account representative or authorized dealer to obtain the proper wall power supply to power your telephone or to correct any wiring problems that may be the cause.

- Insure your PassageWay adapter is receiving power (as indicated by the illumination of the power LED).

If you have verified that the PassageWay adapter is properly connected to your telephone, yet the LED on the adapter is NOT illuminated, your telephone system wiring may not support the remote powering of adjuncts. If this is the case, you should consult your account representative or authorized dealer to obtain the proper wall supply to power your PassageWay adapter or to correct any wiring problems that may be the cause.

- Connect's software-based link test passes.

To assist you in diagnosing problems, Connect contains a built-in link test procedure. This test can be run directly from the Communications Error dialog box by choosing the Test button.

If the test procedure concludes successfully, Connect is communicating properly with your 8411 telephone, Callmaster VI telephone, or PassageWay adapter over the COM port you selected, and you should select the Continue button on the Communications Error dialog box to restore normal operation.

If, however, the test fails, an error number will be provided. Refer to the following pages to interpret the error numbers and to find suggestions for how to resolve the particular error you encountered.

**Failure Code -101**

Meaning: The Link test could not be completed due to insufficient memory.

Things to Try: Close one or more applications; then retry the Link test.

**Failure Code -102, -103**

Meaning: The Link test could not be completed because the currently selected COM port is in use by another application.

Things to Try: Close the application that is using the designated COM port; then retry the Link test.

**Failure Code -104**

Meaning: The currently selected COM port is incompatible with PassageWay Solution.

Things to Try: Try connecting your telephone to a different COM port on your PC.

**Failure Code -111**

Meaning: The PassageWay adapter is not receiving power.

Things to Try: If you are using an auxiliary power supply, verify that it is properly installed. (See Chapter 2 for more information.)

If you are not using an auxiliary power supply, you will need to obtain one unless your DEFINITY system is wired to provide adjunct power to your extension. (Your DEFINITY System Manager can provide this information.) Your Lucent sales representative can supply you with the proper power supply, if needed.

**Failure Code -112**

Meaning: The connection between your PC's COM port and the 25-pin connector on your telephone may be faulty.

Things to Try:

- Verify that the connection between your PC's COM port and the telephone is secure.
- Verify that the COM port number you selected during the Connect setup procedure matches the number of the COM port that is physically connected to your telephone.
- If you are using an auxiliary power supply, verify that it is properly installed.
- If you are not using an auxiliary power supply, you will need to obtain one unless your DEFINITY system is wired to provide adjunct power to your extension (your System Manager can provide this information). Your Lucent sales representative can supply you with the proper power supply, if needed.
- Verify the connections between your telephone and your DEFINITY system.

**Failure Code -121**

Meaning: Connect is not receiving data over the specified COM port.

Things to Try: Follow the instructions for failure code -112.

**Failure Code -122, -142**

Meaning: Your PassageWay Link has reported an internal problem.

Things to Try:

- Try connecting your 8411 telephone, Callmaster VI telephone, or PassageWay adapter to a different COM port on your PC.
- Verify that the connection between your PC's COM port and the 8411 telephone, Callmaster VI telephone, or PassageWay adapter is secure.
- Verify that the COM port number you selected during the PassageWay Service Provider setup procedure (via the PassageWay Configurator) matches the number of the COM port that is physically connected to your 8411 telephone, Callmaster VI telephone, or PassageWay adapter.
- If you are using an auxiliary power supply, verify that it is properly installed.
- If you are not using an auxiliary power supply, contact your System Manager.
- Unplug and plug the cable connected to the Line jack on the back of the telephone and PassageWay adapter.

**Failure Code -123, -131, -141**

Meaning: Connect is receiving incorrect data over the specified COM port.

Things to Try: Verify that the COM port number you selected during the PassageWay Service Provider setup procedure (via the PassageWay Configurator) matches the number of the COM port that is physically connected to your 8411 telephone, Callmaster VI telephone, or PassageWay adapter. This failure usually indicates that the specified COM port is connected to a modem or data module rather than your telephone or PassageWay adapter.

**Failure Code -143**

Meaning: The 8411 telephone, Callmaster VI telephone, or PassageWay adapter is not properly connected to your DEFINITY system. The PassageWay adapter may also not be properly connected to your telephone. Things to Try: Verify the connections between your 8411 telephone, Callmaster VI telephone, or PassageWay adapter and your DEFINITY system.

**Failure Code -144**

Meaning: The PassageWay adapter is not properly connected to your telephone. Things to Try: Verify the connection between your PassageWay adapter and your telephone.

**Failure Code -2xx**

Meaning: An unexpected Windows communications error has occurred. Things to Try: Try closing all applications except Connect and Program Manager, and then repeat the Link test procedure.

**Problem 3: Connect will not work on COM ports other than COM1 and COM2.**

By default, many PCs are not configured to permit the simultaneous use of three or more COM ports. Specifically, most PCs are configured such that COM ports are grouped into pairs: COM1 is paired with COM3, and COM2 is paired with COM4. By default, such PCs permit only one COM port from each pair to be operating at the same time (for example, COM1 with COM2). COM ports within the same pair will usually conflict with one another and are not supported (that is, COM1 with COM3, or COM2 with COM4).

If you cannot get Connect to work properly on COM3, check if another device is using COM1 at the same time. Similarly, if you cannot get Connect to work on COM4, determine if another device is using COM2 at the same time. If so, you may need to make some changes to your PC configuration to support using the PassageWay Service Provider on COM3 or COM4. Refer to Appendix A for more information. If you need additional assistance in setting up devices on COM ports other than COM1 and COM2, consult your PC hardware vendor.

**Problem 4: Connect occasionally displays its initialization window while one or more PassageWay applications are running.**

Connect displays its initialization window whenever it establishes (or re-establishes) communication with the telephone. Generally, this window is displayed only once, at the time when a single PassageWay application is first executed. However, if a communications problem occurs at any time, Connect attempts to clear the problem by reinitializing itself, which causes the initialization window to reappear temporarily. If this occurs while a PassageWay application is performing a task involving the telephone, the operation in progress will be aborted and must be restarted manually once the initialization window disappears. If no task involving the telephone is in progress during this process, the operation of PassageWay applications is unaffected.

The chance of a communications problem depends on your PC's configuration. The PassageWay Service Provider operates at a data rate of 9600 baud, and it relies on Windows to manage the flow of data through your PC's serial port. Depending upon the speed of your PC, the number and type of applications you are using, and various hardware components in your PC configuration, Windows will be able to manage serial communications with varying degrees of effectiveness.

If you encounter frequent communications errors using the PassageWay Service Provider, your PC's current hardware configuration may not support reliable high-speed communications under Windows. Appendix A includes information about choosing serial port hardware that can work reliably at high speeds under Windows.

**Problem 5: Connect will not run. It displays the message: Connect must terminate due to an unexpected communications error and then terminates.**

This message indicates that Connect cannot communicate with the COM port you specified using the PassageWay Configurator. Run the PassageWay Configurator and select a different COM port.

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## PC Serial Ports



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### Overview

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This appendix provides detailed information about PC serial ports, including background information about what they are and how they work. It also explains how Microsoft Windows 3.1 manages serial ports, how to resolve problems using COM3 or COM4 under Windows, and how to choose serial port hardware that is well-suited to the PassageWay Service Provider. If you are familiar with serial port terminology (for example, I/O port addresses, IRQs, etc.), you may wish to skip over the background section. If not, you should review the background section before reading further.

If you are having problems using the PassageWay Service Provider on COM3 or COM4, you should refer to "Workarounds and Solutions to the IRQ Conflict Problem." If you intend to purchase an add-on serial port card for use with the PassageWay Service Provider, you should refer to "Selecting an Add-On Serial Port Card" for information that can assist you in selecting a card.

## **Background**

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Serial ports (also sometimes referred to as communications ports or COM ports) are hardware interfaces that permit your PC's microprocessor to communicate with peripheral devices using a communications standard called RS-232 (hence, serial ports are also sometimes referred to as RS-232 ports). Many common computer accessories make use of serial ports, including serial mice, modems, and serial printers.

Under DOS (and Windows, which works cooperatively with DOS), the serial port interfaces in a PC are uniquely identified by specific device names: COM1 ("serial communications port 1"), COM2 ("serial communications port 2"), and so on, usually up through COM4. A particular PC might have none of these devices, some of them, or all of them installed. For example, most PCs currently on the market arrive from the manufacturer with two serial ports already installed (COM1 and COM2), often integrated onto the computer's main system board. Installing additional serial ports (for example, COM3 or COM4) is usually accomplished by purchasing an add-on card and installing it into a free expansion slot.

For most purposes (such as configuring software), the generic description of serial ports provided by their device names is sufficient. For example, during the PassageWay Service Provider installation procedure, you are asked to provide the device name of the serial port to which you have connected the telephone (for example, COM2). Unfortunately, this abstract view of serial ports is not sufficient for other purposes, notably for troubleshooting problems: To be able to do this effectively, a basic understanding of serial port hardware is required. In particular, it is essential to understand the mechanics by which the computer's microprocessor communicates with serial port hardware.

The microprocessor/serial port communication consists of two aspects: an I/O port address and an interrupt request signal (IRQ). The I/O port address represents a small region of the microprocessor's input/output memory space that is used to pass data back and forth to the serial port. This memory region acts something like a mailbox: Outgoing mail (data from the microprocessor to be transmitted to the peripheral device) is placed in the mailbox by the owner (the microprocessor) to be picked up by the mail carrier (the serial port hardware) for subsequent delivery to the destination party (the peripheral device). In turn, the mail carrier (the serial port hardware) places incoming mail (data from the peripheral device) into the box to be picked up by the owner (the microprocessor). This analogy illustrates an additional important point about I/O port addresses: Just as individual mailboxes help the residents in a neighborhood keep their mail from getting mixed up, each device using an I/O port address to communicate with the microprocessor should have a unique address that does not conflict with that of any other device.

### **IRQ Mechanism**

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The mailbox analogy is also helpful in understanding the IRQ mechanism. Normally, we place our outgoing mail in our mailbox at any convenient time before the mail carrier arrives to pick it up. The outgoing mail sits in our mailbox until the mail carrier arrives, at which time it is picked up and possibly some incoming mail is placed in the mailbox. Then, some time later, we check our mailbox and retrieve our new incoming mail. The problem with this scheme is that it is not very efficient; both the outgoing and incoming mail spend some time just sitting in the mailbox. A better approach would be if the mail carrier provided some sort of signal (for example, ringing the doorbell) to announce his or her arrival, in which case we could hand over the outgoing mail and pick up the incoming mail immediately.

In the PC architecture, IRQs act like the doorbell in our analogy: They provide a method by which hardware devices in the computer can get the microprocessor's attention to deal efficiently with some process. The serial port hardware makes use of an IRQ to announce that it is ready to receive more outgoing data and/or that new data have arrived from the peripheral device that need to be processed.

Like I/O port addresses, IRQs must generally be unique among the active hardware devices in a computer system. In the mailbox analogy, the doorbell is probably not a good signal since virtually anyone could ring the doorbell for any number of reasons, not just to indicate the arrival of mail. Similarly, if a particular IRQ signal is used (PCs generally support 16 unique IRQ signals, denoted IRQ0, IRQ1, and so on, up through IRQ15), the microprocessor must take the appropriate action for the device associated with that IRQ. If there is a mix-up, or if more than one device attempts to use the same IRQ at the same time, a conflict occurs, and the outcome is often unpredictable and usually undesirable (for example, the computer may "hang"). Because IRQs are a limited resource, some newer PCs support IRQ sharing, a hardware mechanism that permits more than one device to make use of the same IRQ, but most PCs do not. For example, all PCs that use IBM's MicroChannel Architecture (MCA) support IRQ sharing, as do most PCs that use the Enhanced Industry Standard Architecture (EISA) design. However, most PCs in the marketplace -- even new models -- are based on the traditional Industry Standard Architecture (ISA), which generally does not support IRQ sharing.

 **NOTE:**

IRQ sharing is a PC feature. If your PC supports IRQ sharing, you can put two COM ports on one IRQ. You will not encounter the types of complications that this appendix addresses if your PC supports IRQ sharing.

The specific I/O port address and IRQ that a particular serial port uses is determined by the hardware configuration of the serial port. Generally, these parameters cannot be changed for built-in serial ports, but add-on cards containing serial ports often provide jumpers or switches that can be used to configure them to use one of several I/O port addresses and IRQ combinations.

The table below lists the default I/O port addresses and IRQs used by the serial ports of IBM-PC/AT-compatible computers:

Serial Port Device Name	I/O Port Address	IRQ
COM1	03F8	4
COM2	02F8	3
COM3	03E8	4
COM4	02E8	3

The values in this table play an important part in understanding the "wrinkles" associated with serial ports: although there is provision for up to four serial ports, with four unique I/O addresses, there are only two unique IRQs associated with them (recall that most PCs require the IRQs used by each active device to be unique to avoid conflicts). To understand why, it is useful to recall what the PC world was like before the widespread availability of products like Windows.

When the architecture of the current generation of PCs was first being designed (for the IBM PC/AT), the concept of multitasking was not nearly as important in the PC marketplace as it is today. Consequently, since DOS (before Windows) did not permit multiple applications to run simultaneously (with the notable exception of certain specialized programs such as mouse drivers), there was little need to provide a mechanism by which several serial ports could be operated simultaneously. Consequently, the strategy used was to conserve IRQs by assigning the same IRQ to more than one COM port (that is, the COM1 and COM3 ports were both assigned to IRQ4, and the COM2 and COM4 ports were both assigned to IRQ3). Then, under the assumption that at most two serial ports would be active simultaneously (for example, COM1 and COM2, which have unique IRQs), conflicts would not occur.

## **Serial Ports Under Windows**

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Unlike the DOS-only world of yesterday, today's multitasking environments like Windows permit the microprocessor to communicate with up to four active serial port devices at the same time (COM1 through COM4). For example, under Windows, if you are using a serial mouse (on COM1) within a terminal emulator program that operates a data modem (on COM2), while using a fax board (on COM3) to transmit or receive a fax "in the background," you are using three serial port devices simultaneously. You might even wish to make a phone call using the PassageWay Service Provider (on COM4) at the same time, bringing the total up to four simultaneously active serial port devices.

The fact that Windows permits this kind of powerful multitasking does not guarantee that the underlying PC hardware can support this level of operation, at least without some customizing at the hardware level. Since some PCs can support it by default (for example, those that support IRQ sharing), Windows does not prohibit you from configuring your system and attempting tasks like the one in the previous paragraph. Unfortunately, most PCs cannot support this operation by default, and the most likely result of attempting the above scenario is "hanging" the PC due to an IRQ conflict. On such systems, using COM1 along with COM2 is generally fine (recall that these devices have unique IRQs by default), but the addition of COM3 or COM4 causes the system to fail.

Fortunately, Windows 3.1 permits complete customization of all parameters involving serial ports through the Control Panel, including configuring nonstandard I/O port addresses and IRQs (that is, values different from those in the table -- these parameters can be viewed and/or modified by selecting the desired port in the Control Panel's Ports icon, selecting the Settings... button, and then selecting the Advanced... button). This flexibility offers the opportunity of salvation for owners of PCs that do not support IRQ sharing who require the use of three or more COM ports simultaneously.

## **Workarounds and Solutions to the IRQ Conflict Problem**

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It is important to remember that the IRQ conflict is a problem in hardware; it cannot be resolved in software alone. Consequently, there are only three alternatives for working around or resolving it:

### **Workaround 1: Configure your serial devices such that you use only two at any one time, and those two use serial ports with unique IRQs.**

This is the simplest workaround to the IRQ conflict problem, but it does not solve the underlying conflict. The idea is to assign your peripheral devices to your available serial ports in such a way as to avoid using any devices simultaneously which might conflict. For example, if you have a serial mouse on COM1 (IRQ4), a fax/modem card on COM2 (IRQ3), and your telephone on COM3 (IRQ4), you cannot effectively use the PassageWay Service Provider since you need to use your mouse under Windows while TAPI applications are running.

A better arrangement would be to move the PassageWay Service Provider to COM4 (IRQ3), which then could be safely used with your mouse on COM1 (IRQ4). In this case, the workaround is to avoid trying to use the PassageWay Service Provider at the same time you use the fax/modem on COM2, since the conflict now would be over IRQ3 (COM2 and COM4).

### **Workaround 2: Replace one or more of your serial peripherals with equivalent devices that do not require a serial port.**

The idea with this approach is to eliminate the conflict by reducing the number of peripherals in your system that require serial ports. For example, replacing a serial mouse with a bus mouse (that is, a mouse that requires its own add-on card) would make another serial port available that then could be used by another device.

Given the scenario described in item (1) above (that is, a mouse on COM1, a fax/modem card on COM2, and the PassageWay Service Provider on COM3), you might buy a bus mouse and configure it to use, say, IRQ2 or IRQ5. This would then permit you to move the PassageWay Service Provider onto COM1 (IRQ4), where it then could be used simultaneously with both the mouse and the fax/modem.

Likely candidates for conversion from a serial interface to some other interface include mice (which can be converted to bus mice) and serial printers (which can be converted to an additional parallel printer port).

**Workaround 3: If your serial port hardware permits you to select IRQs other than the default ones (IRQ3 and IRQ4), make use of one or more unused IRQs in your system to assign to each COM port a unique IRQ.**

This solution is generally not possible for built-in serial ports since these are usually "hard-wired" and cannot be changed. Although most add-on cards containing serial ports permit you to change the IRQs assigned to them, many cards do not let you select IRQs other than IRQ3 and IRQ4. For example, an internal modem card generally has jumpers or switches that permit you to administer the serial interface on the card to be COM1, COM2, COM3, or COM4, but the I/O port addresses and IRQs associated with each of these configurations are usually fixed to the settings in the table.

Fortunately, some serial port add-on cards do permit you to select IRQs other than 3 or 4 (the additional choices are often IRQ2 and IRQ5). If your serial port hardware provides this flexibility — and at least one of the IRQ numbers available as an option is currently unused in your PC setup — you can solve the IRQ conflict directly.

For example, consider once again the scenario of a COM1 mouse, a COM2 fax/modem card, and a COM3 PassageWay Service Provider. If the COM3 serial port is located on an add-on card that permits IRQs other than 3 or 4 to be selected, you could configure the COM3 serial port to use a different (available) IRQ in your system, say IRQ5. After making the necessary changes to the card (for example, adding or removing some jumpers or adjusting the positions of some switches), the last step would be to configure Windows to monitor IRQ5 rather than IRQ4 for the COM3 serial port -- this is accomplished using the Windows Control Panel under the "Ports" option (see your Windows documentation for details).

If you attempt this solution, you must be certain that you do not choose an IRQ that is in use by some other device in your system -- if so, you will only trade one type of IRQ conflict for another. You should be aware that many common add-on cards use IRQs, including network cards and multimedia sound cards, both of which are commonly used under Windows. Your PC hardware vendor can assist you in configuring IRQs. You may also need to consult the documentation for your PC and any add-on cards that are installed to determine which IRQs, if any, are available on your system.

## Selecting an Add-On Serial Port Card

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This section presents advice on how to choose an add-on serial port card for use with the PassageWay Service Provider. Because the PassageWay Service Provider does not have any unique requirements with respect to serial ports, this advice applies generically to selecting a serial port for use with any peripheral.

In general, there are two main things to consider when selecting a serial port for use with the PassageWay Service Provider:

1. Choose a card that offers the flexibility to configure its serial port IRQs to values other than IRQ3 and IRQ4 (for example, to IRQ2 or IRQ5).

This capability often proves to be very beneficial, especially if you are purchasing the card to add a COM3 and/or COM4 port to your system. As was described at length in "Workarounds and Solutions to the IRQ Conflict Problem," for PCs that do not support IRQ sharing (which includes most PCs, unfortunately), the ability to relocate the IRQ for COM3 or COM4 away from the defaults (IRQ4 and IRQ3, respectively) represents the only direct solution to conflicts that may arise when attempting to use COM1 along with COM3 or COM2 along with COM4 under Windows.

If you know that your PC does not support IRQ sharing, or if you are not sure, it is a good idea to purchase a card with this capability. If you know that your PC supports IRQ sharing, this capability is not as potentially important.

2. For best performance with the PassageWay Service Provider, choose a card that has hardware support for high-speed communications.

The PassageWay Service Provider operates at a relatively high data rate (9600 baud), and it relies on Windows to manage the flow of data through your PC's serial port. Depending upon your configuration, Windows may have problems maintaining high data rates through traditional serial ports. In these situations, a serial port designed for high-speed communications can eliminate such problems while providing a reduced load on the microprocessor (thus increasing the performance of Windows during data transfers relative to standard serial ports). In most cases, the price differential for such a card is quite modest and a worthwhile investment.

Many serial port cards on the market (and most built-in serial ports) use either the 8250 or 16450 Universal Asynchronous Receiver Transmitter (UART) as their key component. Although these UARTs can operate at high speeds, they do not assist the PC's microprocessor in dealing with high-speed data transfer. Under Windows, in particular, data can be lost at high baud rates using these UARTs. If this data loss occurs, the PassageWay Service Provider cannot function properly.

Whenever possible, select a serial port card that uses the 16550 UART. This industry-standard UART is an improved version of the 16450 with hardware support to help offload the microprocessor during high-speed data transfers. Windows 3.1 has built-in support for the 16550, so no special software configuration is required to obtain the benefits of the 16550's enhanced capabilities. In addition, any high-speed peripheral can benefit from the 16550 (for example, a 9.6-Kbps or 14.4-Kbps data and/or fax modem), not only the PassageWay Service Provider.

In general, since there is no way of knowing ahead of time if your particular PC configuration requires an enhanced serial port for the PassageWay Service Provider, Lucent strongly recommends that you purchase a card based on the 16550 UART to insure trouble-free operation with the PassageWay Service Provider.

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## Changing the Settings for the 8411 Telephone

# B

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### Overview

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Using the SHIFT and MUTE buttons on your 8411 telephone, you can change or view the following settings:

- Enable or disable the speakerphone (the default is 2-way speakerphone enabled)  
2-digit code: **77** or **SP**  
Setting:      **1** - Enable 2-way speakerphone  
                  **2** - Enable 1-way speaker  
                  **3** - Disable 2-way speakerphone
- Enable or disable the Mute functions (the default is Mute enabled)  
2-digit code: **68** or **MU**  
Setting:      **1** - Enable the Mute function  
                  **2** - Disable the Mute function

- Select a ringing preference for an incoming call when you are busy on another call (the default is Continuous Ringing)

2-digit code: **74** or **RG**

Setting:       **0** - No Ring  
                  **1** - One Ring  
                  **2** - Continuous Ringing

- Enable or disable the status lights (next to Button #9) for the PassageWay interface (the default setting is Status Lights disabled)

2-digit code: **79** or **PW**

Setting:       **1** - Enable the status lights  
                  **2** - Disable the status lights

 **NOTE:**

By default, Button #9 is enabled for use by the PassageWay status lamp. It is in your best interest to disable this button (using the SHIFT MUTE code listed above). By disabling the default setting for this button, you gain one more feature button that you can program.

- Enable or disable the status lights (next to Button #10) for the Analog (Tip/Ring) Adjunct connected to the Analog Adjunct jack (the default setting is Status Lights disabled)

2-digit code: **25** or **AL**

Setting:       **1** - Enable the status lights  
                  **2** - Disable the status lights

 **NOTE:**

By default, Button #10 is enabled for use by the analog line status lamps. It is in your best interest to disable this button (using the SHIFT MUTE code listed above). By disabling the default setting for this button, you gain one more feature button that you can program.

- Select whether the I-1 Channel or the I-2 Channel will be used for Analog Adjunct transmission  
2-digit code: **42** or **IC**  
Setting:       **1** - Select I1-Channel for Analog Adjunct transmission  
                  **2** - Select I2-Channel for Analog Adjunct transmission
- Set the audio volume control levels for the speakerphone and handset (the default is retention of the current volume settings for both speakerphone and handset until you change the settings)  
2-digit code: **48** or **HV**  
Setting:       **0** - Fix the handset volume at a mid-range level, and reset the speakerphone volume level to a mid-range level after each call  
                  **1** - Retain the handset and speakerphone volume at the current volume level (that is, the volume level does not automatically revert back to the mid-range level after each call)  
                  **2** - Fix the handset volume at a mid-range level, and retain the speakerphone at its current level (does not revert back to mid-range level after each call)  
                  **3** - Reset the handset and speakerphone volume to its mid-range volume level after each call
- View the settings for the Speakerphone, Mute, Handset Expander, and Ringer Preference options  
2-digit code: **00**

 **NOTE:**

You can perform this procedure only with an 8411D telephone.

- View the settings for the Compander, Display Font (Domestic or International), DLI, Primary level, and Adjunct level  
2-digit code: **11**



**NOTE:**

You can perform this procedure only with an 8411D telephone.

- View the software version currently installed in the 8411 telephone and determine whether the telephone is operating in 4-wire or 2-wire mode.  
2-digit code: **##**



**NOTE:**

You can perform this procedure only with an 8411D telephone.

## **Programming Procedure**

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This section describes how to change or view the setting for your 8411 telephone.



**NOTE:**

You can view the settings for your telephone only if you have an 8411D telephone.

To change or view the settings for your 8411 telephone:



**NOTE:**

Make sure the ringer is off, and the display (if present) is in Normal mode. If a headset adapter is connected to the telephone, make sure it is in the on-hook state.

1. While the telephone is on hook (that is, the handset is hung up, and the speakerphone is off), press SHIFT.

The light next to SHIFT goes on.

2. Press MUTE.

The light next to SHIFT goes off.

3. Enter the 2-digit code for the option you want to set or view.

4. If you are changing a setting, enter the new setting.



**NOTE:**

If you have an 8411D telephone, you can press the \* button to scroll through each available setting. You can press the # button to save the displayed setting and exit programming mode.

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# PassageWay Service Provider Planning Form

# C

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## Overview

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This appendix provides a planning form to help you configure the PassageWay Service Provider. On this form, record the following information:

- the type of telephone you have
- the feature access codes for your DEFINITY system. Consult your DEFINITY System Manager for these access codes

Use this form when you install and configure the PassageWay Service Provider.

 **NOTE:**

If your company has a DEFINITY G3 V5 or later system, you can download the configuration information for your telephone from the DEFINITY system automatically. However, to use this feature, you must know the PASTE feature access code for your DEFINITY system. If your DEFINITY system supports the PASTE feature, you only need to know the following information:

- the type of telephone you have
- the PASTE feature access code for your DEFINITY system

**Telephone Type:** \_\_\_\_\_

<b>Feature</b>	<b>DEFINITY Feature Access Code</b>
PASTE	
Auto Call Back Off	
Auto Call Back On	
Call Answer Back	
Call Park	
Call Pickup	
Forward Off	
Forward On	
Leave Word Calling	

Leave Word Cancel	
Priority	
Send All Calls Off	
Send All Calls On	
Speed Call Program	

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