555-7101-010

CallPilot

Fundamentals Guide

Product release 3.0 Standard 1.0 November 2004

NORTEL NETWORKS™

CallPilot
Fundamentals Guide

Publication number: 555-7101-010
Product release: 3.0
Document release: Standard 1.0
Date: November 2004

Copyright © 2004 Nortel Networks. All Rights Reserved.

Information is subject to change without notice. Nortel Networks reserves the right to make changes in design or components as progress in engineering and manufacturing may warrant.

The process of transmitting data and call messaging between CallPilot and its servers, switches or system is proprietary to Nortel Networks. Any other use of the data and the transmission process is a violation of the user license unless specifically authorized in writing by Nortel Networks prior to such use. Violations of the license by alternative usage of any portion of this process or the related hardware constitutes grounds for an immediate termination of the license and Nortel Networks reserves the right to seek all allowable remedies for such breach.

Nortel Networks, the Nortel Networks logo, the Globemark, and Unified Networks, BNR, CallPilot, DMS, DMS-100, DMS-250, DMS-MTX, DMS-SCP, DPN, Dualmode, Helmsman, IVR, MAP, Meridian, Meridian 1, Meridian Link, Meridian Mail, Norstar, SL-1, SL-100, Succession, Supernode, Symposium, Telesis, and Unity are trademarks of Nortel Networks.

3COM is a trademark of 3Com Corporation.

ADOBE is a trademark of Adobe Systems Incorporated.

ATLAS is a trademark of Quantum Corporation.

BLACKBERRY is a trademark of Research in Motion Limited.

CRYSTAL REPORTS is a trademark of Seagate Software Inc.

EUDORA and QUALCOMM are trademarks of Qualcomm, Inc.

ETRUST and INOCULATEIT are trademarks of Computer Associates Think Inc.

DIRECTX, EXCHANGE.NET, FRONTPAGE, INTERNET EXPLORER, LINKEXCHANGE, MICROSOFT, MICROSOFT EXCHANGE SERVER, MS-DOS, NETMEETING, OUTLOOK,

POWERPOINT, VISUAL STUDIO, WINDOWS, WINDOWS MEDIA, WINDOWS NT, and WINDOWS SERVER are trademarks of Microsoft Corporation.

GROUPWISE and NOVELL are trademarks of Novell Inc.

INTEL is a trademark of Intel Corporation.

LOGITECH is a trademark of Logitech, Inc.

MCAFEE and NETSHIELD are trademarks of McAfee Associates, Inc.

MYLEX is a trademark of Mylex Corporation.

NETSCAPE COMMUNICATOR is a trademark of Netscape Communications Corporation.

NOTES is a trademark of Lotus Development Corporation.

NORTON ANTIVIRUS and PCANYWHERE are trademarks of Symantec Corporation.

QUICKTIME is a trademark of Apple Computer, Inc.

RADISYS is a trademark of Radisys Corporation.

ROLM is a trademark of Siemens ROLM Communications Inc.

SLR4, SLR5, and TANDBERG are trademarks of Tandberg Data ASA.

SONY is a trademark of Sony Corporation.

SYBASE is a trademark of Sybase, Inc.

TEAC is a trademark of TEAC Corporation.

US ROBOTICS, the US ROBOTICS logo, and SPORTSTER are trademarks of US Robotics.

WINZIP is a trademark of Nico Mark Computing, Inc.

XEON is a trademark of Intel, Inc.

Publication history

November 2004 Standard 1.0 release

Contents

1 Introduction 7

2 CallPilot documentation 9

Introduction to the CallPilot documentation 10
Customer Documentation Map 11
Using online Help sources 13
Contacting technical support. 14
Contacting Nortel Networks 14

3 What's New in CallPilot 3.0 15

CallPilot 3.0 feature enhancements 16
Documentation enhancements 17

4 Safety guidelines 19

General safety. 20
Avoiding electrostatic discharge 23
Handling components 24
Handling hard drives 25
Handling CD-ROMs 26
Single-point grounding requirements 27

5 CallPilot & personnel roles 29

Introduction 30
Skills and knowledge you will need. 31
Configuration Planners and Managers 33
Installers and Technicians 34
Administrators 36
Maintenance personnel. 38
End users 39

6 CallPilot server hardware 41
201i server 42
703t tower server 45
1002rp rackmount server 49

7 CallPilot software 51
CallPilot Manager 52
CallPilot Reporter 54
CallPilot Application Builder 56
Desktop Messaging software 58
My CallPilot 60
CallPilot Server software 64

8 CallPilot networking 65
Overview 66
CallPilot networking solutions 66
AMIS & Integrated AMIS Networking 68
Enterprise Networking 68
VPIM Networking 70
Network Message Service 70
Combining networking solutions 71

9 Regulatory information 73
Grounding 74
Notice for international installations 74
Electromagnetic compatibility 75
Radio and TV interference 77

Glossary 79

Index 105

Chapter 1

Introduction

Welcome to CallPilot!

CallPilot is a powerful unified messaging system that offers a single solution for managing many types of information, including:

- voice messages
- e-mail messages
- telephone calls
- fax messages
- directories

CallPilot users can send and receive both voice and fax messages through display-based phonesets, wireless sets, Windows desktop computers, or a speech recognition interface.

Whether you are new to CallPilot or have previous experience with the product, this guide is the place to start. It is a new addition to the CallPilot documentation suite.

The CallPilot Fundamentals guide provides an overview of the CallPilot product. It is intended to serve as your introduction to the CallPilot hardware, software and documentation.

In addition to providing overviews of the CallPilot components, this guide also describes the roles of various personnel involved with the installation, configuration, administration and maintenance of the system. The end user perspective is also examined, as are various regulatory and environmental requirements.

One of the principal roles of this guide is to serve as your “roadmap” to the CallPilot documentation suite. The entire suite is very extensive, comprising dozens of individual volumes, reference cards, and detailed online Help information. The text volumes and reference cards are all available in Adobe Acrobat PDF format. Refer to both Chapters 2 and 5 for detailed information on the CallPilot documentation suite and its uses.

For previous CallPilot customers and users, this guide also contains a “What’s New” section. This appears in Chapter 3 and provides a brief overview of the new functionality introduced in this release of the product.

Chapter 2

CallPilot documentation

In this chapter

Introduction to the CallPilot documentation. 10
Customer Documentation Map 11
Using online Help sources 13
Contacting technical support. 14
Contacting Nortel Networks 14

Introduction to the CallPilot documentation

The CallPilot documentation suite is stored on the CD-ROM that you received with your system and is organized into six main categories:

- Fundamentals
- Planning and Engineering
- Installation and Configuration
- Administration and Support Tools Guides
- Maintenance
- End-user Information

This structure relates to the main task groups involved in installing, administering, maintaining and using CallPilot. The documents are supplied in Adobe Acrobat PDF format and you can print part or all of a guide, as required.

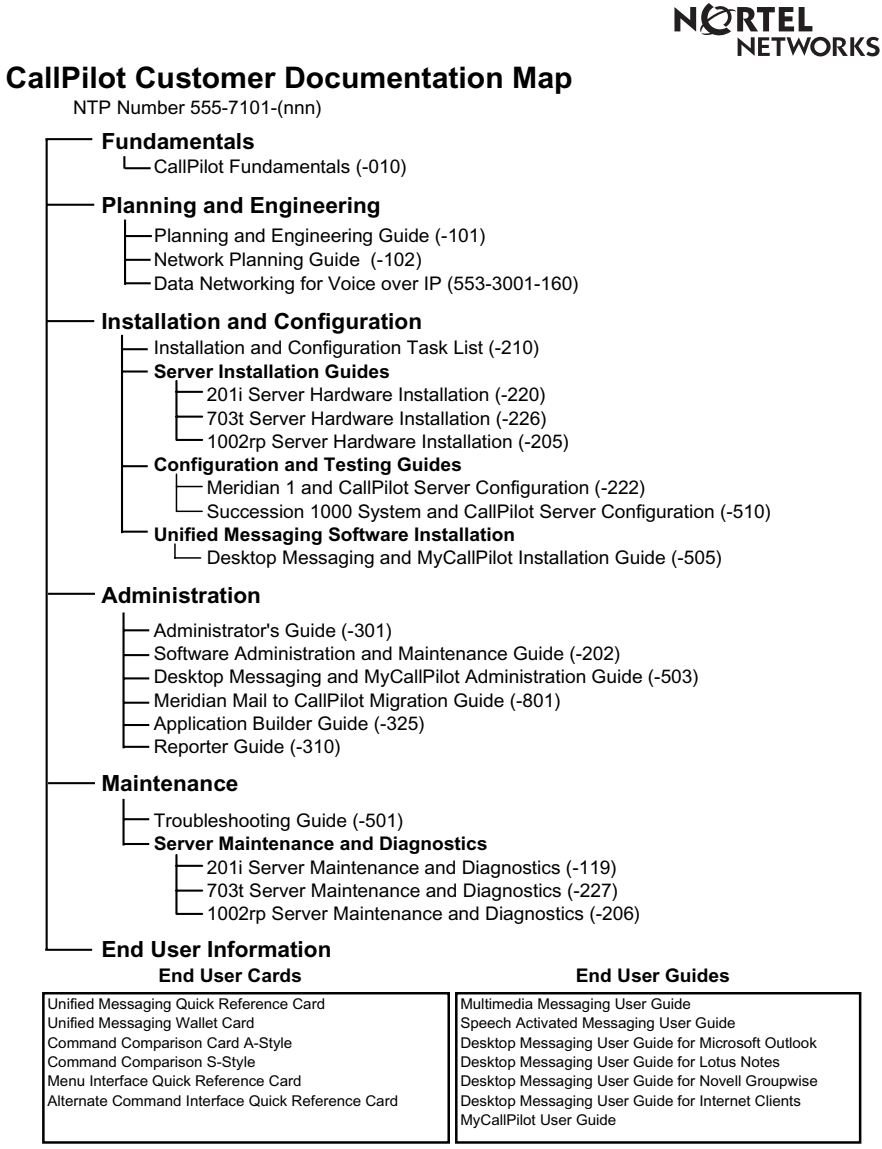
In addition to the various guides, CallPilot also contains extensive online Help information. The Help topics can be accessed from various CallPilot interface screens such as the CallPilot Manager and the web-based My CallPilot. The entire Help collection is also available offline. This facilitates conducting searches if you want to probe the entire body of the online text.

The PDF documents are also available from the Nortel Networks Partner Information Center (PIC) at http://my.nortelnetworks.com

You require a user ID and password to access the PIC. If you do not have a PIC account, click Register to request an account. Note that it can take up to 72 hours to process your account request.

Customer Documentation Map

The overall organization and content of the CallPilot documentation suite is shown in a single master view in the following diagram:



This is the CallPilot Customer Documentation Map.

The Map was created to facilitate navigation through the suite by showing the main task groups and the documents contained in each category.
It appears near the beginning of each guide, showing that guide's location within the suite.

Descriptions of the suite's documents are provided in Chapter 5, "CallPilot & personnel roles." That chapter examines the roles of various personnel within an organization with respect to installing, maintaining, administering and using CallPilot. It directs you to the appropriate guides for the tasks you want to perform.

Using online Help sources

CallPilot administration online Help

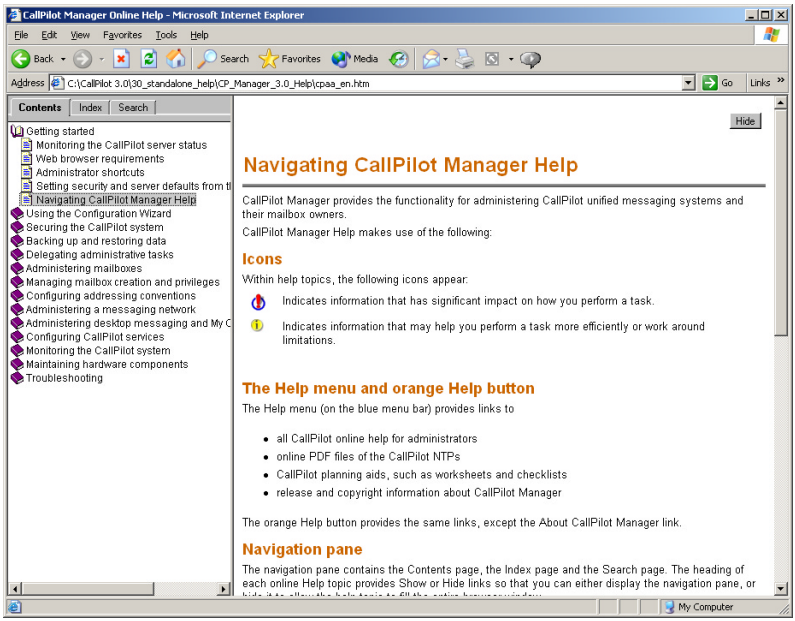
The CallPilot Manager and CallPilot Reporter software contain administration online Help areas that provide access to:

- technical documentation in Acrobat PDF format
- online help topics in HTML format.

To access online information, use either of the following methods:

- Click the orange Help button at the top of any page to access the Administration Help area.
- Click the grey Help button on any page to display a topic that relates to the contents of the page.

For more information about using these Help systems, access the CallPilot Manager Help, open the Getting Started book, and click “Navigating CallPilot Manager Help.”



The Application Builder software contains a Windows Help system as well as context-sensitive help (available by clicking the ? button and then a field or label).

CallPilot end user online Help

The My CallPilot software contains a Useful Information area that provides access to the end-user guides in HTML format. Online user guides in Acrobat PDF format are also available from the Useful Information online Help.

To access online Help for the currently selected My CallPilot tab, click the Help button on the upper-right corner of the My CallPilot page.

Desktop Messaging provides product-specific Windows Help for groupware clients (Microsoft Outlook, Novell GroupWise, and Lotus Notes). The stand-alone version of CallPilot Player also provides addressing and troubleshooting information for Internet mail clients.

Contacting technical support

Contact your distributor’s technical support organization to obtain any required assistance with your system.

Contacting Nortel Networks

If you have comments or suggestions for improving CallPilot and its documentation, contact Nortel Networks at the following web site address:

http://www.nortelnetworks.com/callpilot_feedback

Chapter 3

What's New in CallPilot 3.0

In this chapter

CallPilot 3.0 feature enhancements 16
Documentation enhancements 17

CallPilot 3.0 feature enhancements

The CallPilot 3.0 releases focuses on the implementation of a new operating system (OS) for the CallPilot server.

Prior to this release, CallPilot servers ran on the Windows NT 4.0 Server operating system. Microsoft Corporation has announced its intention not to support this OS beyond 2004 for its retail customers. However, it will support NT for its embedded customers (such as Nortel CallPilot) to mid-2006. Nortel Networks has therefore decided to replace the NT OS with Windows 2003 Telephony SAK, for both new systems being purchased by customers, and the for the existing CallPilot customer base.

The intent of this current product release then is to port the existing functionality present in CallPilot 2.02 SU03 running on Windows NT, to CallPilot 3.0 running on Windows 2003 SAK.

Details and requirements of the new OS with respect to the CallPilot servers are provided in the Software Administration Guide, the Server Maintenance and Diagnostics Guides, and the Server Installation Guides.

CallPilot 3.0 includes all of the reliability, robustness and serviceability enhancements introduced with the Service Updates 1-3 on top of CallPilot 2.02.

CallPilot 3.0 also improves serviceability by reducing the time and complexity of performing a software re-install, should this ever become necessary. It does this through the inclusion of a "ghost" image CD, which allows the operating system and CallPilot application to be re-installed on the system in minutes.

Documentation enhancements

A number of major enhancements have been made to the CallPilot documentation suite to improve access, navigation, task flow and general usability.

These include:

- The suite documents are now organized into functional groups related to the main tasks involved in installing, administering, maintaining and using CallPilot.
- A new guide (the one your are reading!), the CallPilot Fundamentals, has been added to the suite. This is the initial "go-to" guide that describes the activities associated with installing and using CallPilot. It does this by pointing the various organization personnel types to the appropriate documentation within the suite. The guide also provides brief overviews of the CallPilot hardware and software, networking capabilities, and safety issues.
- A new navigational aid has been included with the documentation suite. This is the CallPilot Documentation Map. It appears near the beginning of each guide and shows the particular guide's location within the suite.
- Text material throughout the suite has been edited and re-organized to expedite various tasks.
- The previous Installation & Configuration Overview Guide has been merged with the old Installation & Configuration Planner. The new combined document is called the Installation & Configuration Task List.
- The Network Implementation & Administration Guides have been merged with the Network Planning Guide and the Network Enhancements Guide. All material has been extensively edited, streamlined and updated. The new combined document is called the Network Planning Guide.

Chapter 4

Safety guidelines

In this chapter

General safety 20
Avoiding electrostatic discharge 23
Handling components 24
Handling hard drives 25
Handling CD-ROMs 26
Single-point grounding requirements 27

General safety

When installing, replacing, or upgrading any system parts, follow Nortel Networks safety guidelines to prevent personal injury and damage to the server or replacement parts.



WARNING

Risk of personal injury and equipment damage

Field maintenance must always be performed by fully qualified, trained personnel.

ATTENTION

The guidelines discussed in this chapter are common to all server models. Ensure that you comply with any safety guidelines that are also discussed in Parts 2 and 5 of the *CallPilot Installation and Configuration* guides.

Precautionary messages

This guide provides warnings when risks related to hardware installation and handling are known. Do not ignore these warnings!

Symbols description

You will encounter the following symbols in the CallPilot guides. Their meanings are given here. Do not ignore these symbols!



DANGER

Risk of electric shock

Warns you of an immediate electrical hazard which, if not avoided, will result in shock, serious injury, or death.



WARNING

Risk of personal injury

Warns you of a situation in which you can be injured if instructions are not followed exactly as stated.



CAUTION

Risk of equipment damage

Alerts you to situations where data can be lost or damaged, equipment can be damaged, actions can result in service interruption, and productive time can be lost.

ATTENTION

Provides information that is essential to the completion of a task.

General precautions

Nortel Networks recommends the following safety guidelines for performing installation and maintenance procedures:

- To prevent electric shock, *do not* plug computer and peripheral devices into power sources that are not properly grounded.
- Use a surge protector or uninterruptible power supply to protect your system from sudden increases and decreases in electrical power.
- If your server is a tower or rackmount server, you must shut down and power off the server and peripheral devices, and then unplug the server power cable before you remove the server cover.
- Ensure that nothing rests on the peripheral cables, and that you cannot trip over or step on the cables.
- Do not push any foreign objects into any server opening.

- When handling components, protect the server from electrostatic discharge by wearing an antistatic wrist strap that is attached to an unpainted metal surface, as described in the following table:

IF your server is a	THEN attach the antistatic wrist strap to
tower or rackmount server	any unpainted metal surface on the server chassis.
IPE server	any unpainted metal surface on the switch.

- To prevent data loss, keep magnetic screwdrivers away from backup tapes, floppy disks, and hard drives.

Avoiding electrostatic discharge

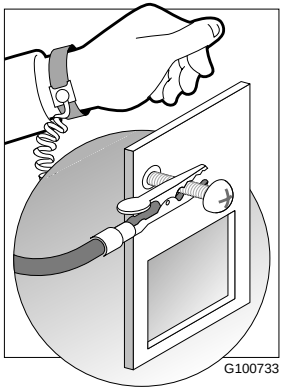
Electrostatic discharge (ESD) can seriously damage component parts, such as boards, disk drives, and other parts.

ATTENTION

Nortel Networks recommends performing all hardware installation and maintenance procedures at an ESD workstation whenever possible.

Antistatic wrist strap

If an ESD workstation is not available, provide some ESD protection by wearing an antistatic wrist strap. Ground the ESD wrist strap by attaching it to any unpainted metal surface on the chassis. The diagram shows the lead from the ESD wrist strap clipped to an exposed screw:



To discharge static

When working with server components, periodically touch a nearby unpainted metal surface to discharge any accumulated static.

Handling components

Incorrect handling or installation of server components can cause damage to your server.

Cooling and airflow

For proper cooling and airflow, observe the following precautions:

- If you removed any system fans, ensure that you reinstall them so that air flows in the correct direction for system cooling. For more information, refer to Part 5 of the *CallPilot Installation and Configuration* binder.
- If you removed the upper fan holder foam in the 703t server to perform component maintenance, ensure that you replace it when you are done. The upper fan holder foam ensures that:
  - fans are secure in their sockets
  - correct spacing between add-in boards is maintained
- Always install the tower or rackmount server cover before turning on the system. You risk damaging system parts if you operate the system without the cover in place.

Handling boards

Nortel Networks recommends the following precautions for any procedure that includes handling component boards:

- Store boards in their original antistatic shipping packages until you are ready to inspect or use them.
- After you remove a board from its protective wrapper or from the server, place the board component-side up on a conductive foam pad.

  If possible, use antistatic floor pads and workbench pads as well.
- Do not slide a board over any surface.
- Do not touch board components or gold-edge connectors on the board.
- Hold a board by the top edge or by the side edges.

Installing boards

When installing boards on the server, remember the following details:

- The backplane is flexible and supported with stand-offs.
- Board slots resist connector insertion.
- Firm, steady force seats a board in its slot properly.
- Boards seat with friction followed by a solid stop.
- External connector plates, attached to add-in boards, are seated in the rear panel and secured with a screw.

Handling hard drives

Hard drives are extremely sensitive to vibration and physical shock. To protect equipment and prolong the useful life of hard drives, Nortel Networks recommends the following precautions:

Avoid vibration or physical shock

Hard drives are susceptible to even slight vibrations. A hard drive can be damaged if it is placed on a table that is accidently knocked or moved. Use caution when handling hard drives to prevent damage.

Handle hard drives with care

After removing a hard drive from its protective wrapper or from the server, place it on an antistatic padded workbench or workstation to avoid movement or jarring.

Check for shipping damage

If a replacement hard drive is shipped alone as an upgrade or replacement, determine if the item has been damaged during shipping. Note any dents or damage on the padded container and packaging. If the container and packaging are damaged, keep the container as proof that the part was damaged during shipping and handling.

Store hard drives carefully

Store hard drives in padded containers. Store the packaged drives away from places where they can be moved, jarred, or damaged by the environment.

Detailed procedures

Refer to the *CallPilot Installation and Configuration* guides for detailed instructions on how to remove the hard drive.

Handling CD-ROMs

When removing a CD-ROM from its protective case or loading it to a drive, hold it by its center hole and outer edge. Avoid touching the CD-ROM data surface of the CD-ROM (the non-labeled side).

To protect the CD-ROM against scratches and dirt when not in use, keep it in its protective case.

To load a CD-ROM

1. Press the eject button on the CD-ROM drive to eject the disk tray.
2. Place the CD-ROM on the tray with its labeled side facing up.
3. Press the eject button, or gently press the front of the disk tray to retract the tray back into the drive.

To eject a CD-ROM

1. Press the eject button on the CD-ROM drive to eject the disk tray.
2. Remove the CD-ROM from the tray and put it in its protective case.
3. Press the eject button or gently press the front of the disk tray to retract the tray back into the drive.

Single-point grounding requirements

Switches used with CallPilot (such as Meridian 1 or Succession 1000) require a Single-Point Ground (SPG) topology to which the CallPilot server and its peripherals (such as the monitor, modem, external CD-ROM drive or tape drive, ELAN/CLAN hubs and UPS) must also be grounded. The SPG is typically a copper bar or plate (a bus). In its simplest form, the SPG can be an isolated ground bus or an ACEG bus in the service panel or transformer.



WARNING

Risk of personal injury, risk of hardware failure

Power outlets used by the CallPilot server and its peripheral devices must be connected to the same single-point ground reference used by the switch (such as the Meridian 1 switch or Succession 1000 system). If this requirement is not met, power transients can cause personal injury and/or hardware failure.

Before the CallPilot server installation, a qualified electrician must implement the single-point ground reference as required between the power outlets of the CallPilot server and the power outlets of the switch.

Requirements for the SPG

Follow these requirements for the SPG:

- All ground conductors must be identified according to local codes and terminated permanently.
- Terminations must be accessible for inspection and maintenance during the life of the installation.
- All grounding conductors must be continuous, with no splices or junctions, tagged “Do not remove or disconnect”, and insulated against contact with foreign grounds.
- Grounding conductors must be no load, non-current carrying cables, under normal operating conditions.

- The ground interface in a steel-framed building must have a single connecting reference, located at the service panel, to the building steel on the same floor as the switch (or within one floor from the switch).

  Note: Nortel Networks does not recommend the use of building steel as an integral part of the switch ground system. The building steel is a reference point only.

Detailed procedures

For detailed information on the SPG requirements, refer to the *Installation and Configuration Guide* and the grounding and power requirements section in the *CallPilot Planning and Engineering Guide*.

Additionally, refer to the documentation associated with the PBX/switch configured with your CallPilot for further information on grounding requirements. For example, refer to the following NTPs:

553-3001-120	*Meridian 1 Installation Planning*
553-3001-152	*Meridian 1 Power Engineering*
553-3001-210	*Meridian 1 System Installation Procedures*
553-3021-209	*Planning and Installation Guide for Option 11C Mini*
553-3021-210	*Planning and Installation Guide for Option 11C*
553-3023-102	*Planning and Engineering Guidelines - Succession 1000*
553-3023-210	*Installation and Configuration - Succession 1000*

Also refer to the ANSI-J-STD-607-A-2002 standard *Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications*.

Chapter 5

CallPilot & personnel roles

In this chapter

Introduction 30
Skills and knowledge you will need 31
Configuration Planners and Managers 33
Installers and Technicians 34
Administrators 36
Maintenance personnel 38
End users 39

Introduction

Implementing a CallPilot solution requires a sequential series of tasks to be performed by a variety of personnel in your organization. These tasks include the following:

- Planning and managing a CallPilot solution
- Installing CallPilot hardware
- Installing CallPilot software
- Migrating to CallPilot from other systems, if applicable
- Configuring a CallPilot server and your telephone switching system
- Administering a CallPilot system
- Using Desktop client software

As newer versions of CallPilot software become available, there is also the additional task of:

- Upgrading CallPilot software

This chapter examines each of these tasks from a personnel point of view. It directs you to the appropriate manuals and guides in the CallPilot documentation suite to enable you to perform the specific function.

Each of the referenced guides contains detailed information regarding the specific task. In addition, CallPilot has a content-rich online Help facility that provides further information, including extensive procedural instructions. You can easily search the online Help to find any particular topic.

Note: The personnel roles cited in this chapter are intended as general guidelines only. The roles may overlap in your organization or different titles may be in use. However, the descriptions of the guide contents will assist you in identifying the document you require for a specific task.

Skills and knowledge you will need

You need certain skills and knowledge to install, maintain and administer a CallPilot installation.

Nortel Networks product knowledge

Knowledge of, or experience with, the following Nortel Networks products will assist you:

- previous releases of CallPilot
- Meridian Mail

PC knowledge

You require knowledge of the following operating systems before beginning the CallPilot installation. The CallPilot documentation suite does not include references for these products.

- operating systems:
  - Microsoft Windows 98 SE
  - Microsoft Windows 2000 Professional
  - Microsoft Windows XP
  - Microsoft Windows NT
  - Microsoft Windows Server 2003
- one or both of the following web browsers:
  - Internet Explorer 5 or later
  - Netscape Communicator 6.2 or later
- one or more of the following e-mail or Internet mail clients:
  - Microsoft Outlook
  - Microsoft Outlook Express
  - Lotus Notes
  - Novell Groupwise
  - Netscape Messenger
  - Qualcomm Eudora Pro

Switch technology knowledge

You need knowledge of the switch connected to the CallPilot server, including:

- a strong understanding of how the switch routes and processes calls
- switch configuration and operation (especially trunk group access restrictions [TGARs] and network classes of service [NCOS])
- how to establish the switch cabling connections

Other experience or knowledge

Other types of experience or knowledge that are recommended include the following:

- networking and network management/administration
- database management
- client-server systems and architecture
- TCP/IP protocols
- web server setup and maintenance
- software installation and maintenance
- hardware installation and maintenance
- flowcharting
- troubleshooting

Configuration Planners and Managers

For those personnel involved in planning, engineering and managing network configurations, the *CallPilot Planning and Engineering Guide (NTP 555-7101-101)* and the *Network Planning Guide (NTP 555-7101-102)* are the place to start.

The *CallPilot Planning and Engineering Guide* provides information and instructions for selecting and planning your CallPilot system. The process of planning and engineering results in determining the best size, platform, and location for your CallPilot system. This guide examines various system configurations, and includes coverage of:

- hardware and software configurations
- connectivity requirements
- system requirements
- server engineering
- site selection

This guide also provides information about the various tools available to help you plan and engineer your CallPilot system.

The *Networking Planning Guide* provides an overview of key concepts and terminology necessary to implement a messaging network. This guide introduces the networking solutions offered with CallPilot and describes specific feature interactions. It includes coverage of:

- dialing plans
- security and encryption
- gathering information
- configuring switches and your CallPilot hardware
- testing and maintenance

The guide explains the process that you follow to implement one or more networking solutions. Specific procedural information is provided in the CallPilot Manager online Help.

Installers and Technicians

If you are involved with the installation and configuration of CallPilot hardware and software, the *CallPilot Installation and Configuration Task List (NTP 555-7101-210)* is the first document to consult. It provides an overview of installing system hardware and software, including:

- installing a new CallPilot server
- connecting your switch to the CallPilot server
- configuring the switch and CallPilot server
- testing CallPilot
- Desktop messaging and My CallPilot software installation tasks
- configuring and administering the CallPilot system

The task list guide also describes additional system tasks that are done during the initial installation of the system or after a system is installed. These additional system tasks include:

- migrating data
- upgrading CallPilot
- expanding CallPilot features
- installing additional software components such as the Application Builder and Desktop Messaging software.

Once you've consulted the task list for the particular task to be performed, detailed information is then available in the following set of related guides:

- Server Installation Guides

  CallPilot servers currently include the following models: 201i, 703t, and the 1002rp. Each of these servers has its own hardware installation guide:

  - *201i Server Hardware Installation Guide (NTP 555-7101-220)*
  - *703t Server Hardware Installation Guide (NTP 555-7101-226)*
  - *1002rp Server Hardware Installation Guide (NTP 555-7101-205)*

    These guides cover initial preparation, specific installation procedures, power supply installation (1002rp only), and connecting peripheral devices.

- Software Installation

  The *Desktop Messaging and My CallPilot Installation Guide (NTP 555-7101-505)* describes how to install the Desktop Messaging and My CallPilot software. *Desktop Messaging* is CallPilot's unified messaging application that works with an e-mail client. It provides a single graphical interface to manage CallPilot voice, fax, text, and e-mail messages. *My CallPilot* is a web-based portal that provides access to CallPilot messages and mailbox configuration over the Internet.

  The *Software Administration and Maintenance Guide (NTP 555-7101-202)* provides information and instructions for expanding, upgrading, and reinstalling CallPilot software. Note that the CallPilot system software and the server operating system are typically installed at the factory. The CD-ROMs shipped with the equipment contain a disk image of the system and other software components. The use of these disks is detailed in this guide, since they can facilitate the recovery of the operating system and the CallPilot server software as a result of a software or hardware rebuild.

- Configuration and Testing Guides

  These guides describe the CallPilot server configuration steps and switch setup for CallPilot systems that are connected to either a Meridian 1 switch (the *Meridian 1 and CallPilot Server Configuration Guide NTP 555-7101-222*) or a Succession system (the *Succession Communication Server Configuration Guide NTP 555-7101-510*).

  Specific coverage is provided on:

  - configuring the system switch for correct operation with CallPilot
  - connecting the CallPilot system to the system switch and the CLAN
  - configuring the CallPilot server software
  - testing the CallPilot installation

Administrators

The *CallPilot Installation and Configuration Task List (NTP 555-7101-210)* provides a task list overview of the initial configuration and administration of the CallPilot system.

Once you've examined the task list for the particular task you need to perform, detailed information is then provided in the following set of referenced guides:

- The *CallPilot Administrator's Guide (NTP 555-7101-301)* covers the typical tasks performed by a CallPilot administrator. These include:
  - assigning administrative privileges
  - mailbox administration
  - setting up user groups and permissions
  - security issues
  - backing up and restoring CallPilot information
  - configuring addressing conventions and messaging service defaults
  - configuring CallPilot services
  - maintenance and diagnostics

  These tasks are usually performed using CallPilot Manager, the web-based application used to connect to a CallPilot server. Once you have connected to the server, you can create and maintain the information the server uses to provide CallPilot messaging services to authorized mailbox owners. In the event that your IP service is not available, this guide also includes information about using pcAnywhere from Symantec Corporation to control the CallPilot server over a dial-up connection or a LAN connection.

- The *Software Administration and Maintenance Guide (NTP 555-7101-202)* provides information and instructions for:
  - expanding and upgrading CallPilot software
  - performing server platform migrations
  - recovering from system failures
  - installing Callpilot administrative software on a standalone web server

- The *Desktop Messaging and My CallPilot Administration Guide (NTP 555-7101-503)* is intended for the CallPilot system administrator. It provides instructions for:
  - configuring Desktop Messaging e-mail clients
  - configuring servers for Desktop Messaging and My CallPilot after installation
  - troubleshooting information.
- The *Meridian Mail to CallPilot Migration Guide (NTP 555-7101-801)* provides guidelines and detailed information for the migration of a Meridian Mail system to a CallPilot system. Troubleshooting information related to this process is also included.
- The *Application Builder Guide (NTP 555-7101-325)* details the use of Application Builder, a graphical program used to create CallPilot applications that callers access as dialable services. An application in this context is a set of functions (such as announcements, menus, and transfers) that determines the way CallPilot treats a call. When a CallPilot system receives a call, an application handles the call flow. The automated attendant application is a typical example. With Application Builder, you can:
  - specify the call functions that you want to include in an application, such as menus, announcements, and transfers
  - design the call flow (the path calls follow) in an application
- The *Reporter Guide (NTP 555-7101-310)* details the use of the Reporter application. Reporter is a web-based application that helps you analyze and manage your CallPilot system. Reporter converts raw statistics from your server into easy-to-read reports.
- The document *Data Networking for Voice over IP (NTP 555-3001-160)* provides the guidelines for implementing the ELAN shared by CallPilot, CS 1000 and Symposium. It is intended for network deployment personnel responsible for ensuring that their data network has been properly provisioned to support IP Telephony services. The document discusses a number of areas which must be addressed when building a converged multimedia network. These include: network design, performance, Quality of Service (QoS), and operations.

Maintenance personnel

For personnel involved in maintaining the Callpilot system and diagnosing the system when problems occur, the documentation suite includes the following guides:

- *Troubleshooting Reference Guide (NTP 555-7101-501)*

  This guide describes symptoms that can appear on all CallPilot server platforms, and provides basic step-by-step troubleshooting procedures. Each troubleshooting area contains symptom tables outlining basic checks that include diagnostics and resolutions for each check. You can find more troubleshooting information in the CallPilot documents that are referenced throughout this document.

  This guide is applicable to all CallPilot servers. The exceptions are noted for each server, where necessary.

- Server maintenance and diagnostics guides

  The documentation suite contains a maintenance and diagnostics guide for each model of CallPilot server. The guides are:

  > 201i Server Maintenance and Diagnostics Guide (NTP 555-7101-119)
  > 703t Server Maintenance and Diagnostics Guide (NTP 555-7101-227)
  > 1002rp Server Maintenance and Diagnostics Guide (NTP 555-7101-206)

  The actions discussed in these guides are divided into two groups of activities. The first of these is the troubleshooting and diagnostics, where you try to identify and resolve the cause of the system problem. To facilitate this, the guides discuss the use of the operating system's online diagnostic tools and the use of CallPilot Manager's system utilities. The second activity is the performance of hardware maintenance. Actions such as removing and replacing the server, replacing the hard drive and replacing the multimedia processing cards are covered.

End users

The end user of CallPilot has a number of reference documents available. Guides are available for the particular desktop client they are using, such as Microsoft Outlook or Lotus Notes, as well as for the speech-activated messaging and telephone keypad abilities of CallPilot. In addition, a number of reference cards are available for quick access to the CallPilot features.

In summary, the documentation suite includes:

- *Desktop Messaging Guide for Microsoft Outlook*
- *Desktop Messaging Guide for Lotus Notes*
- *Desktop Messaging Guide for Novell Groupwise*

These guides are specific to the stated e-mail programs. They cover all aspects of accessing the CallPilot functionality using these clients: playing and composing voice messages, sending and receiving fax and text messages, calling the sender of a message, addressing issues, sending batch messages, and more.

CallPilot also supports a host of other e-mail programs, albeit with a slightly lesser degree of functionality. These include: Outlook Express, Netscape Messenger, and Qualcomm Eudora Pro. Users of these programs should refer to the:

- *Desktop Messaging Guide for Internet Clients*

An additional guide is included for the web-based My CallPilot application. You can work with My CallPilot from any computer that has Internet access and a web browser configured for My CallPilot. The relevant guide is the:

- *My CallPilot User Guide*

Two other guides are provided that detail additional CallPilot functionality. They are the:

- *Multimedia Messaging User Guide*
- *Speech-Activated Messaging User Guide*

The *Multimedia Messaging User Guide* describes how to work with CallPilot from the keypad of your touchtone telephone. Your CallPilot mailbox stores your messages, recorded greetings, distribution lists, and other personal settings. You can log in to your mailbox at any time using the keypad to play your messages and use all of the available CallPilot features and services.

The *Speech-Activated Messaging User Guide* describes how to work with CallPilot by using speech commands with your touchtone telephone. You can log in to your mailbox at any time using spoken commands and then access the available CallPilot features and services.

The end user also has access to a variety of quick reference cards. These are especially useful when using keypad and voice commands, since they can be kept close at hand beside your telephone and workstation. The cards include:

- *Unified Messaging Quick Reference Card*
- *Unified Messaging Wallet Card*
- *Command Comparison Card A-Style*
- *Command Comparison S-Style*
- *Menu Interface Quick Reference Card*
- *Alternate Command Interface Quick Reference Card*

Chapter 6

CallPilot server hardware

This chapter provides a brief physical summary of the currently available CallPilot servers.

In this chapter

201i server 42

703t tower server 45

1002rp rackmount server 49

201i server

The 201i server is CallPilot's lower-end capacity range server. It is a flexible multimedia telephony server designed to integrate with Nortel Networks Meridian 1 and Communications Server 1000 (CS1000) products. The server occupies two slots of a Meridian 1 IPE shelf or CS1000 Media Gateway or Media Gateway Expansion. When it is locked into position, its connectors attach to the backplane, which provides power and communications links.

The 201i can handle up to 40 voice channels (less if fax or speech recognition channels are provisioned) and 350 hours of storage. The base model comes with two MPC-8 cards for 24 MPU of DSP capacity. Two more MPC-8's can be added to bring the DSP capacity up to 40 MPU.

Primary components

The server's motherboard houses the interfaces needed:

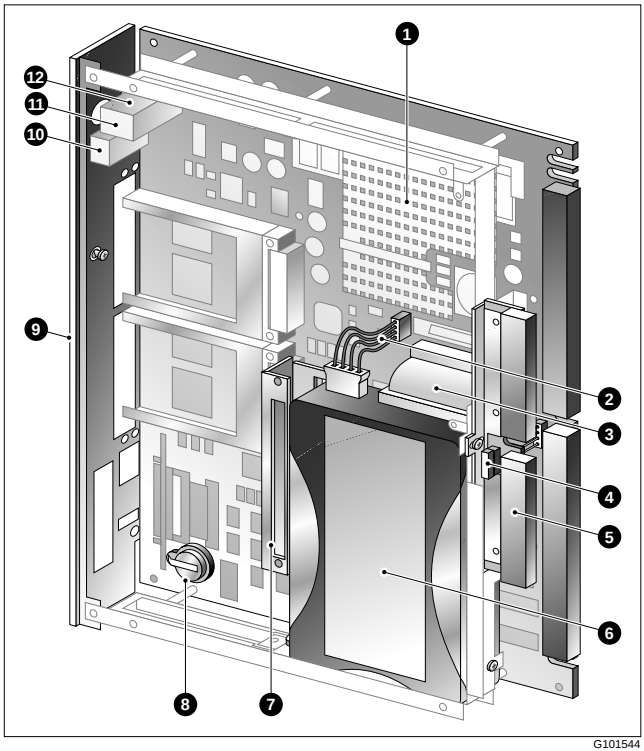
- to communicate with the Meridian 1 switch or CS1000 system
- to facilitate data communications on Ethernet networks

Two Ethernet controllers on the server's motherboard provide Ethernet capability. These controllers provide the network interfaces for both the embedded LAN (ELAN) and customer LAN (CLAN).

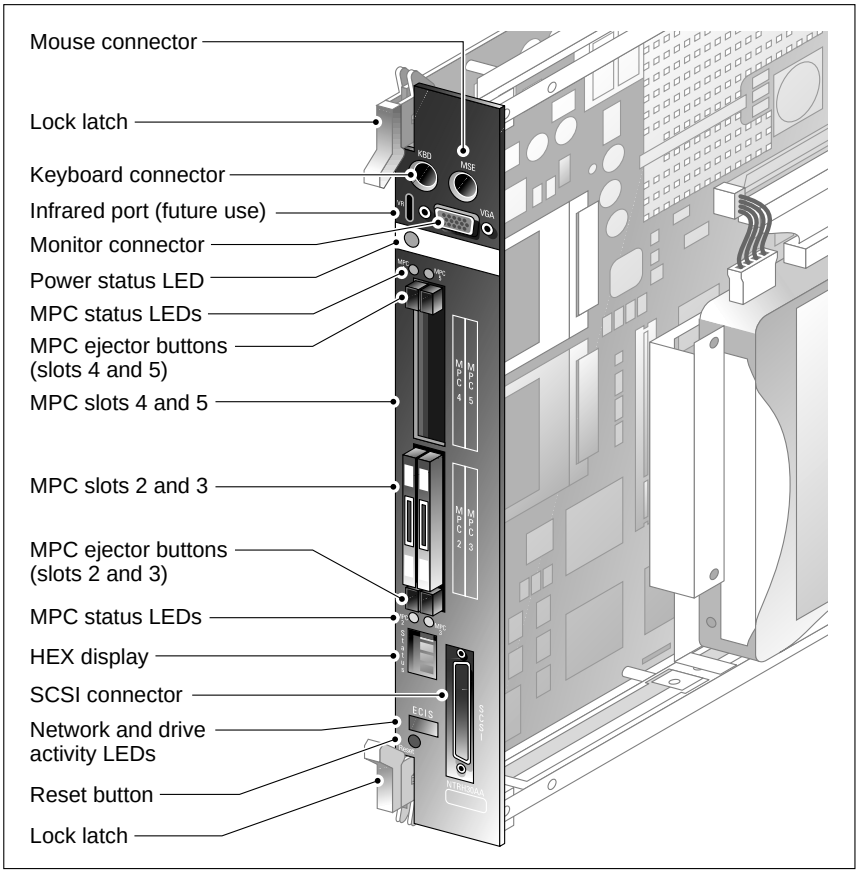
The following legend and the diagram identify the 201i's main components:

Item	Description
1	Heat sink
2	Hard drive power cable
3	Hard drive data cable
4	Secondary backplane connector pin
5	Secondary backplane connector. This connector provides access to voice channels on the second slot of the IPE shelf.

Item	Description
6	3.5" IDE hard drive
7	Hard drive mounting bracket
8	Software feature key
9	Faceplate
10	Monitor connector
11	Mouse connector
12	Keyboard connector



The following diagram shows the 201i server's front faceplate. The faceplate provides LEDs, MPC card slots, and connectors for peripheral devices:

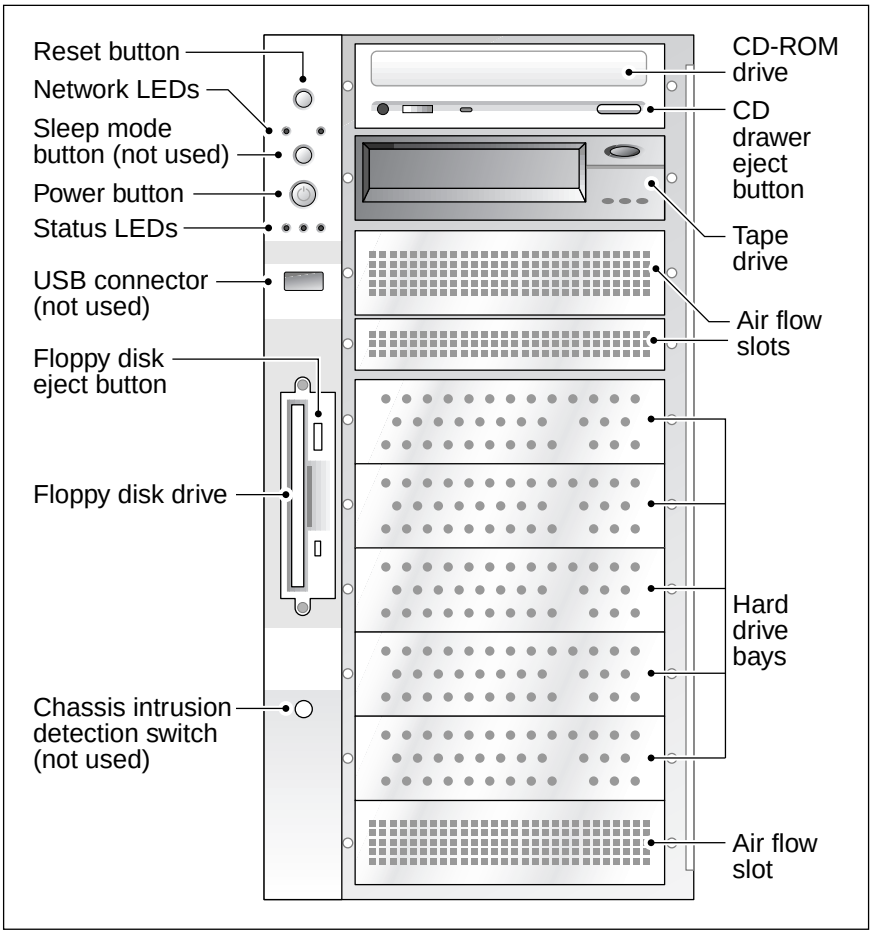


For a more detailed description of the 201i server and its components, and how the server can be integrated into your network, refer to the *201i Server Hardware Installation Guide (NTP 555-7101-220).*

703t tower server

The 703t server is CallPilot's midrange capacity multimedia telephony server. It is a standalone unit, measuring approximately 44 cm (17.5 in.) high by 32 cm (12.7 in.) wide by 65 cm (26 in.) deep and weighing 22 kg (46 lb.) when fully loaded.

The following diagram shows the 703t front panel layout and features:



The table below describes the parts that are identified in the preceding 703t diagram:

Part	Function
Reset button	Triggers a hardware (cold) reset. Do not use this button to perform a server restart. Restart the server as described in “Restarting the server” in the *Installation and Configuration Task List* (555-7101-210).
Network controller LEDs (green)	Left: 10/100Base-T controller LED (NIC1 10/100 MB: ELAN for Meridian 1/Succession 1000 connection) Right: 10/100/1000Base-T controller LED (NIC2 1 GB: CLAN for Customer LAN connection)
Sleep mode button	Not used
Power button	Turns the server’s power on or off.
Status LEDs	Indicate when the server is powered up and the disk drives are active. ■ Left: hard drive activity LED (not used) ■ Center: power/sleep LED (green) ■ Right: status LED (bi-color) indicates whether the server is functioning properly, or whether a hardware event has occurred.
USB connector	For future use
Floppy disk eject button	Ejects the floppy disk.
Floppy drive	Drive for 3-1/2 inch diskettes.

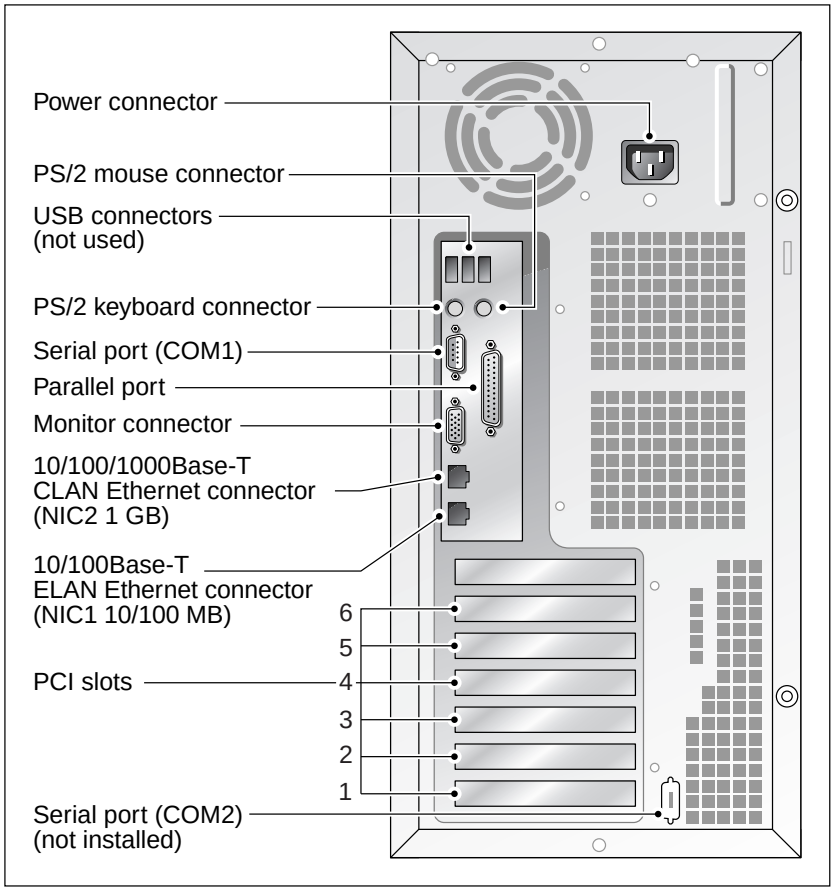
Part	Function
IDE CD-ROM drive (5.25 in.)	Enables you to use the CallPilot software and documentation CD-ROMs.
CD drive eject button	Opens the CD-ROM drawer. Push the button again to close the drawer.
Backup tape drive	Allows backup of hard drive data.
Hard drive 1	10,000 rpm hard drive
Hard drive 2	10,000 rpm hard drive
Drive bay	Vacant
Drive bay	Vacant
Drive bay	Vacant
Air flow slot	Must remain empty for proper system cooling

The 703t server has a capacity of up to 96 voice channels (less if fax or speech recognition channels are provisioned) and 1,200 hours of storage.

The 703t base model comes populated with:

- One MPB96 card (in a PCI slot) for 96 MPU of DSP capacity. No additional MPB96 cards are required.
- One RAID controller (in a PCI slot)

The following diagram shows the 703t server's rear panel layout and features:



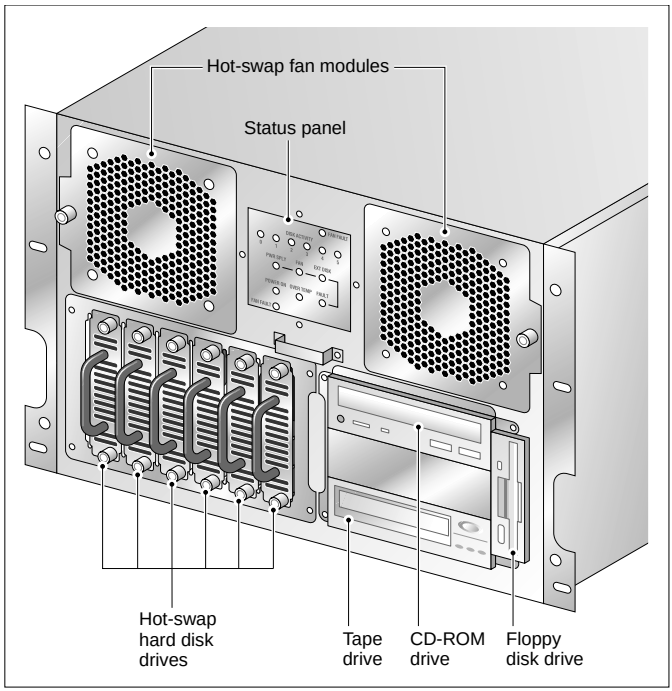
For a more detailed description of the 703t server and its components, and how the server can be integrated into your network, refer to the *703t Server Hardware Installation Guide (NTP 555-7101-226)*.

1002rp rackmount server

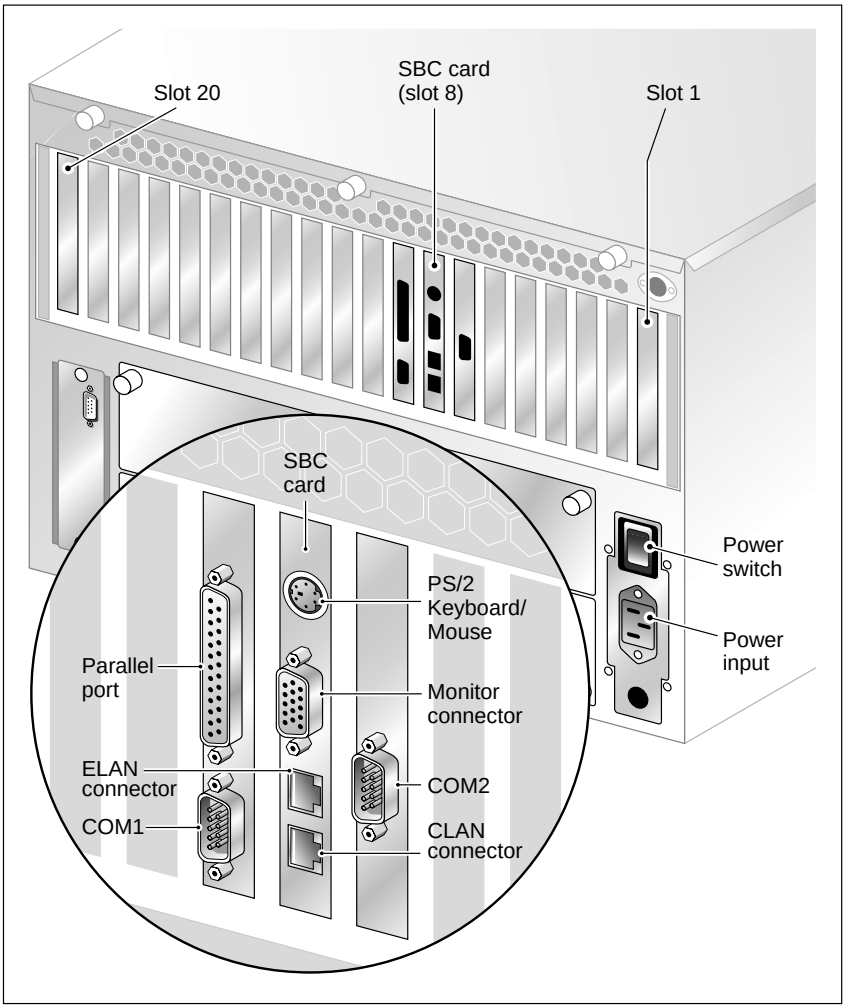
The 1002rp rackmount server is CallPilot's high-end capacity multimedia telephony server. It is a rack-mounted unit, measuring approximately 32 cm (12.5 in.) high by 48.3 cm (19 in.) wide by 53.3 cm (21 in.) deep and weighing 45.5 kg (100 lb.) when fully loaded. Both AC and DC powered versions are available. The 1002rp server has a capacity of up to 96 voice channels (less if fax or speech recognition channels are provisioned) and 2,400 hours of storage. The base model comes populated with:

- One MPB96 card (in a PCI slot) for 96 MPU of DSP capacity. No additional MPB96 cards are required.
- One RAID controller (in a PCI slot)

The front view of the server chassis (without the bezel) shows redundant dual fans to the left and the right of the status panel. The left drive bay holds six SCSI hard drives with hot-pluggable carriers. The media drive bay, located to the right, houses the CD-ROM, tape drive, and floppy disk drive.



The following diagram shows the slot locations in the 1002rp's rear panel, and the power switch and power input for the AC server. The rest of the diagram is the same for both the AC and DC versions of the server.



For a more detailed description of the 1002rp server and its components, and how the server can be integrated into your network, refer to the *1002rp Server Hardware Installation Guide (NTP 555-7101-205)*.

Chapter 7

CallPilot software

This chapter provides a brief summary of the major software components of CallPilot.

For detailed information on supported environments, operating systems, and client software, consult the *CallPilot Planning and Engineering Guide (NTP 555-7101-101)*.

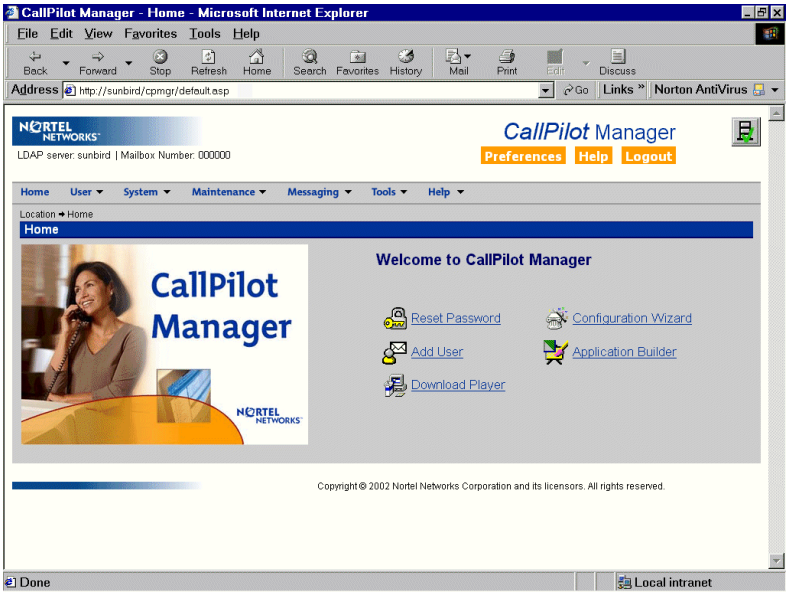
In this chapter

CallPilot Manager 52
CallPilot Reporter 54
CallPilot Application Builder 56
Desktop Messaging software 58
My CallPilot 60
CallPilot Server software 64

CallPilot Manager

CallPilot Manager is the web-based application used by the administrator to connect to and manage a CallPilot server. The application is installed on a web server, which may be configured to run either directly on the CallPilot server or on a separate customer-supplied server.

You typically administer and maintain the CallPilot server over an IP connection between the server and one or more personal computers (PC). You log on to the CallPilot server using a URL, with a user ID (mailbox number) and a password.



Once you have connected to the CallPilot server, you can monitor its status, and you can create and maintain the information the server uses to provide CallPilot messaging services to authorized mailbox owners. CallPilot Manager, via its Configuration Wizard, lets you configure:

- user groups and permissions
- system settings (including security options, network solutions, etc.)

- messaging service settings (voice, text, fax)
- maintenance and diagnostics (including backup and restore)

You can also access the CallPilot Application Builder utility by downloading it from the CallPilot Manager opening screen.

Note that you can use either of the following Web browsers to administer CallPilot:

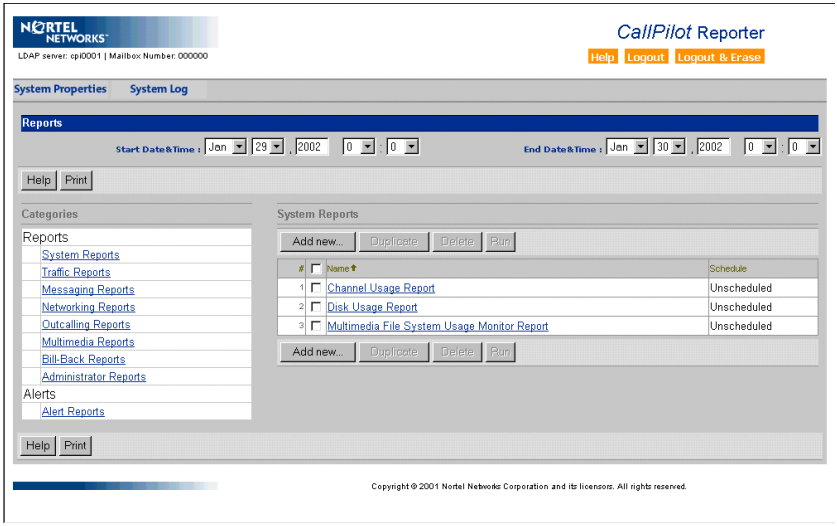
- Internet Explorer 5.0 or later
- Netscape 6.2 or later

You can use Internet Explorer to administer CallPilot either at the local machine or from a PC on the LAN. If you want to use Netscape 6.2 to administer CallPilot, you must use a remote PC.

You can also use third-party software such as pcAnywhere from Symantec Corporation to control the CallPilot server over a dial-up connection or a LAN connection.

CallPilot Reporter

CallPilot Reporter is a web-based application that helps you analyze and manage your CallPilot system. Reporter converts raw statistics from your server into easy-to-read reports.



Reports organize the operational measurements (OMs) collected by your server into a format that you can study and analyze. When you study reports over a period of time, you can identify trends and patterns related to system usage. With this information, you can improve the overall efficiency of your system, increase system security, and troubleshoot potential problems.

Reporter also includes alerts. Alerts are special reports that warn you about potential problems with the server's hardware, software, or security. Alerts are automatically triggered once a predefined threshold is exceeded.

The *CallPilot Reporter Guide (NTP 555-7101-310)* provides information required to generate reports and alerts and then to analyze and interpret the data. Note that to use Reporter, you must have Full Administrator rights or Reporter Administration rights enabled in CallPilot Manager.

The main functionality of CallPilot Reporter includes:

- **View on demand**—View reports and alerts at any time for a period that you specify.
- **Customize**—Customize reports to include relevant data only. For example, you can filter the data in a report to show activities that occur in a particular department.
- **Print**—Schedule reports to print on a regular basis, or print reports on demand. When you use a print schedule, you can monitor system usage over a period of time and identify patterns and trends. You can also set up alerts to print when they are triggered.
- **Export**—Export report information to a variety of file formats so that you can easily distribute the information to others who need it. For example, you can display exported reports on the World Wide Web, over an organizational intranet, or in a spreadsheet program.

Note: CallPilot Reporter must be installed on a stand-alone web server. The Reporter is not available for installation when you install CallPilot Manager on a CallPilot server.

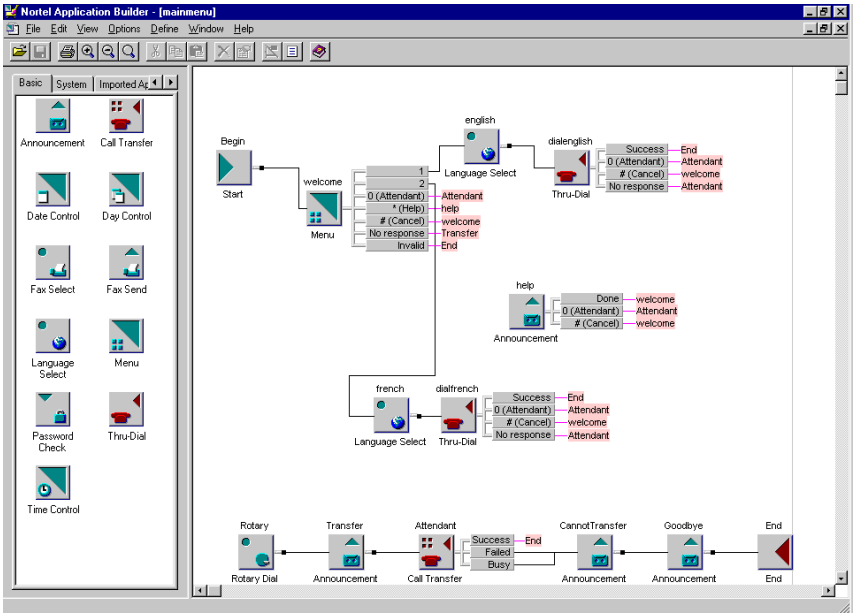
For information on web server requirements, consult the *CallPilot Planning and Engineering Guide (NTP 555-7101-101)*.

CallPilot Application Builder

Application Builder is a graphical program that you use to create CallPilot applications that callers access as dialable services. You select the required call functions (blocks) from palettes. You then arrange blocks in the desired call flow sequence, and then create the connections between the blocks.

In this context, an application is a set of functions that determines the way CallPilot treats a call. When a CallPilot system receives a call, an application handles the call flow. The automated attendant application is a typical example. This application greets callers to the organization and allows them to transfer to a department or to a specific individual. An automated attendant can also handle calls differently, depending on the day of the week or the time of day.

The Application Builder main interface screen is shown below.



With Application Builder, you can:

- specify the call functions that you want to include in an application, such as menus, announcements, and transfers
- design the call flow or in other words, the path calls follow
- include fax functions in your CallPilot applications, if your CallPilot system includes fax messaging

Application Builder provides the following benefits and capabilities:

- It enables you to plan your CallPilot services online rather than on paper.
- It provides a simple graphical interface for adding functions to the application and connecting functions to create the call flow.
- It allows you to record voice items while you create your application. After you create a new voice item, such as a menu or an announcement, the application prompts you to record the new voice item.
- It shows the call flow graphically. The application window shows you, at a glance, how calls are handled by the system.
- It enables you to import an application into other applications. This allows you to save a group of functions that you want to share among multiple applications.

The *CallPilot Application Builder Guide (NTP 555-7101-325)* provides overview information about using Application Builder, including planning considerations, design guidelines, and requirements. It also provides lessons that guide you through the process of developing an application. Each subsequent lesson builds on the lesson in the previous chapter.

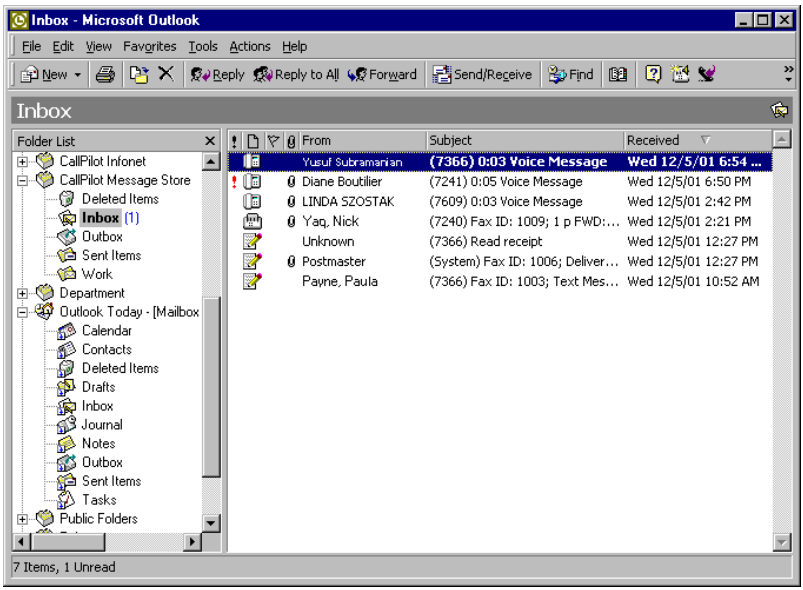
Desktop Messaging software

You can work with CallPilot from your telephone or your computer. Desktop Messaging gives you access to your CallPilot mailbox through your e-mail software application.

CallPilot supports market leading e-mail clients such as Microsoft Outlook, Lotus Notes and Novell Groupwise. A variety of other e-mail clients are also supported.

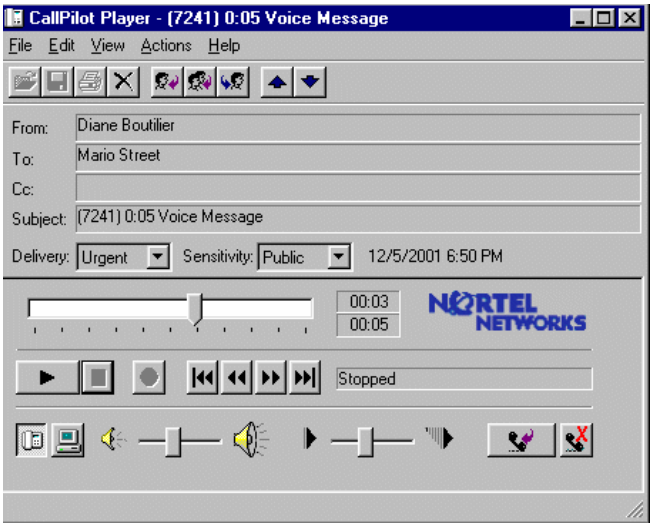
For a detailed listing of the supported e-mail clients, consult the *CallPilot Planning and Engineering Guide (NTP 555-7101-101).*

This view shows the CallPilot message mailbox location in the main interface of the Microsoft Outlook e-mail client.



CallPilot's Desktop Messaging allows you to use your e-mail to:

- view your e-mail messages
- listen to, record and send voice messages (using the CallPilot player, shown below)



- view and print fax messages
- create and send fax messages, including batch faxes
- forward and reply to voice and fax messages
- call the sender of a message
- add message options such as urgent and private
- add voice, fax, or text file attachments to messages
- create personal distribution lists
- change your CallPilot password
- access web-based My CallPilot to view user information and change your feature settings

Note that not all of the supported e-mail clients support the full Desktop Messaging feature set. Consult the applicable *Desktop Messaging User Guide* for your e-mail client for details on the specific features supported.

My CallPilot

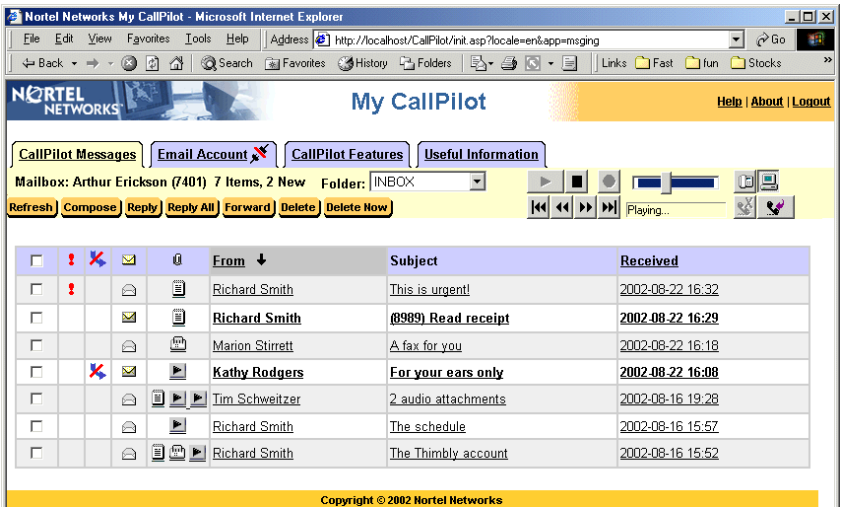
My CallPilot is the web-based software interface to CallPilot. It offers the end user, exceptional flexibility for managing messaging needs. You can work with My CallPilot from any computer that has Internet access and a web browser configured for the application. My CallPilot allows you to:

- view useful information about your mailbox
- receive, forward, reply to, and send voice messages, faxes, and e-mails
- change the setup of your mailbox features
- change your CallPilot password
- create personal distribution lists
- set up remote notification to a telephone or pager
- set up text message notification for a wireless e-mail device

The interface tabs that provide access to the CallPilot functionality are:

CallPilot Messages Tab

The CallPilot Messages tab allows you to access voice messages and view faxes, delete, forward, and reply to messages, and compose new messages.



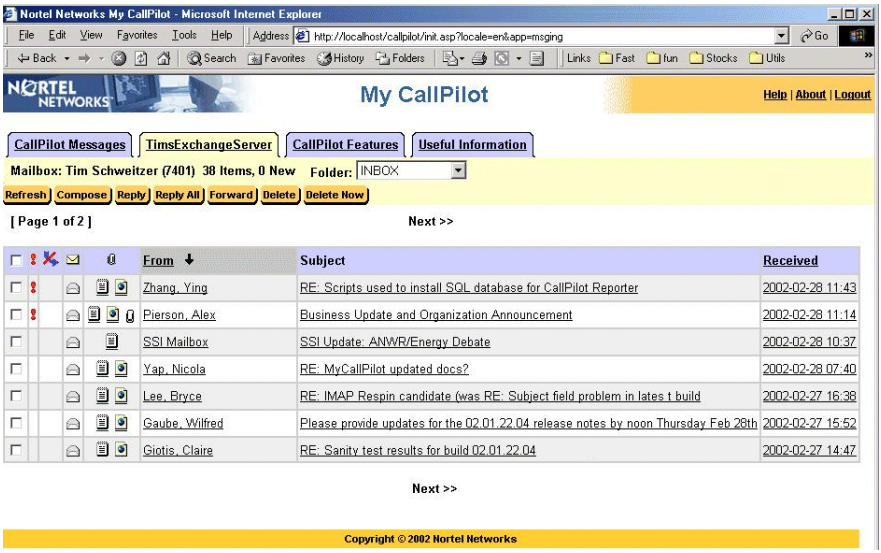
To use the Messaging Tab, you must have desktop messaging enabled for your mailbox.

You can compose a message that is any combination of voice, fax, or text. To record voice messages, you use the embedded or the downloaded CallPilot Player.

Note also that your CallPilot administrator must enable fax capability for your mailbox in order for you to receive faxes.

E-mail Account Tab

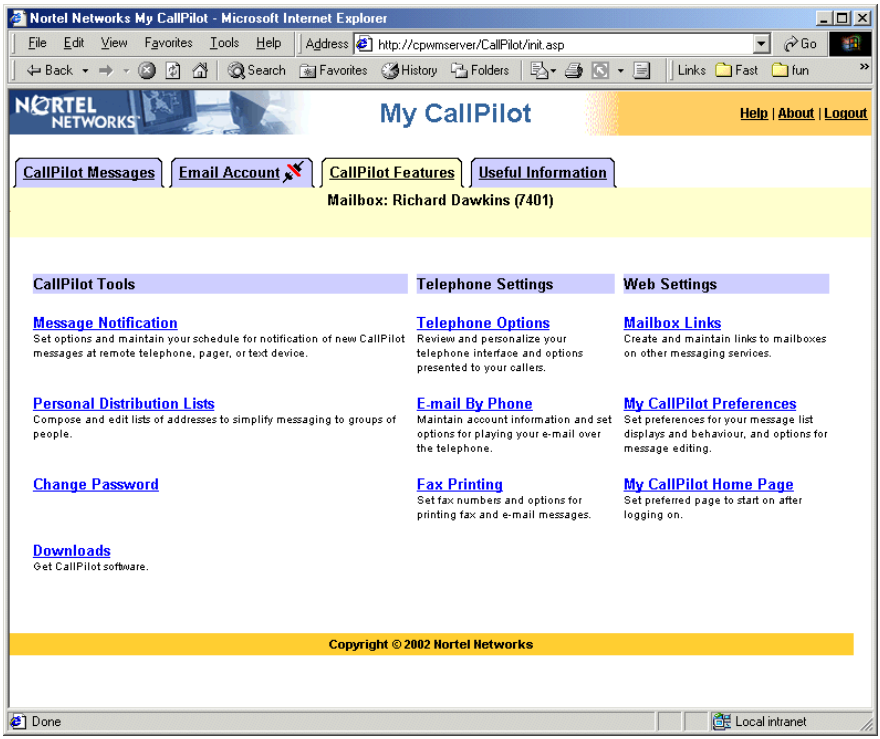
While you are logged in to My CallPilot, you can check your e-mail messages via the E-mail Account tab. You can also forward and reply, and send new e-mails, if appropriately configured.



You can access up to five IMAP e-mail accounts, or other CallPilot mailboxes. One of these accounts can be set up for access from your telephone. You can also set up access to a second CallPilot mailbox, which may be on another server.

CallPilot Features Tab

The CallPilot Features tab is used to change the settings for your CallPilot features and telephone options, and to set preferences for web-based access.

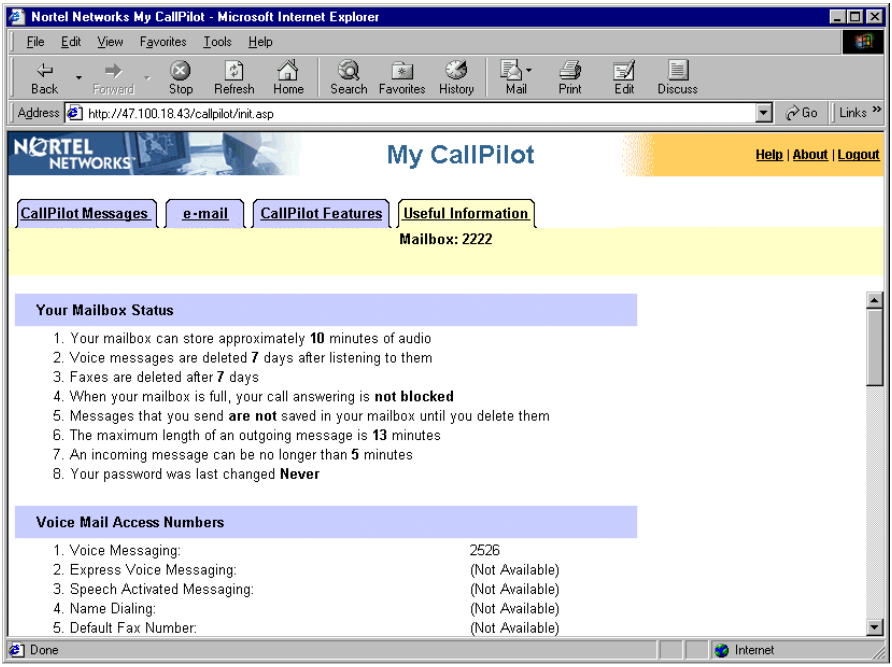


The top page of the CallPilot Features tab displays only the features that are available for you to use. You can then click on any title to open its settings page.

CallPilot Useful Information Tab

The CallPilot Useful Information tab allows you to:

- View status and details about your mailbox.
- View online user guides.
- Print online user guide files on your laser printer.



CallPilot Server software

The software running on the CallPilot server drives the core functionality of the server. This software is factory-installed on your server, along with the Windows operating system. CallPilot Manager's Configuration Wizard is then used to configure the server software for your switch once the CallPilot system is installed in your location.

A number of CallPilot software CD-ROM disks are supplied with your system. These include:

- *CallPilot Image CD-ROMs:*

  These two disks contain an exact initial image of the operating system and server software. In the event of a catastrophic hard disk failure, these disks allow you to re-install these components as they were at the factory when your system was shipped. You can then also use the regularly-scheduled back ups you make of your system to restore your current specific operational configurations.

- *CallPilot Applications CD-ROM:*

  This disk contains setup software to reinstall or add various CallPilot software components, such as: the CallPilot server software, the Manager, Reporter and Application Builder applications, pcAnywhere, and Adobe Acrobat Reader.

- *Other CD-ROMs:*

  Other supplied disks include: CallPilot software for Service Updates and PEPs, Desktop Client and My CallPilot software, CallPilot language prompts, and CallPilot documentation.

For a complete list of CallPilot software, refer to the "CallPilot software media and documentation checklist" in the *Installation and Configuration Task List (NTP 555-7101-210)* and "Section C: System Requirements" in the *CallPilot Planning and Engineering Guide (NTP 555-7101-101)*.

Chapter 8

CallPilot networking

In this chapter

Overview 66
CallPilot networking solutions 66
AMIS & Integrated AMIS Networking 68
Enterprise Networking. 68
VPIM Networking 70
Network Message Service 70
Combining networking solutions 71

Overview

CallPilot offers a range of coordinated messaging networking solutions that provide great flexibility and service. In this context, a networking solution is Nortel's implementation of a specific messaging protocol.

A brief synopsis of each networking solution is provided in this chapter. The *Network Planning Guide (NTP 555-7101-102)* and the CallPilot Manager online Help system provides detailed conceptual and procedural information about the implementation process for each solution.

CallPilot networking solutions

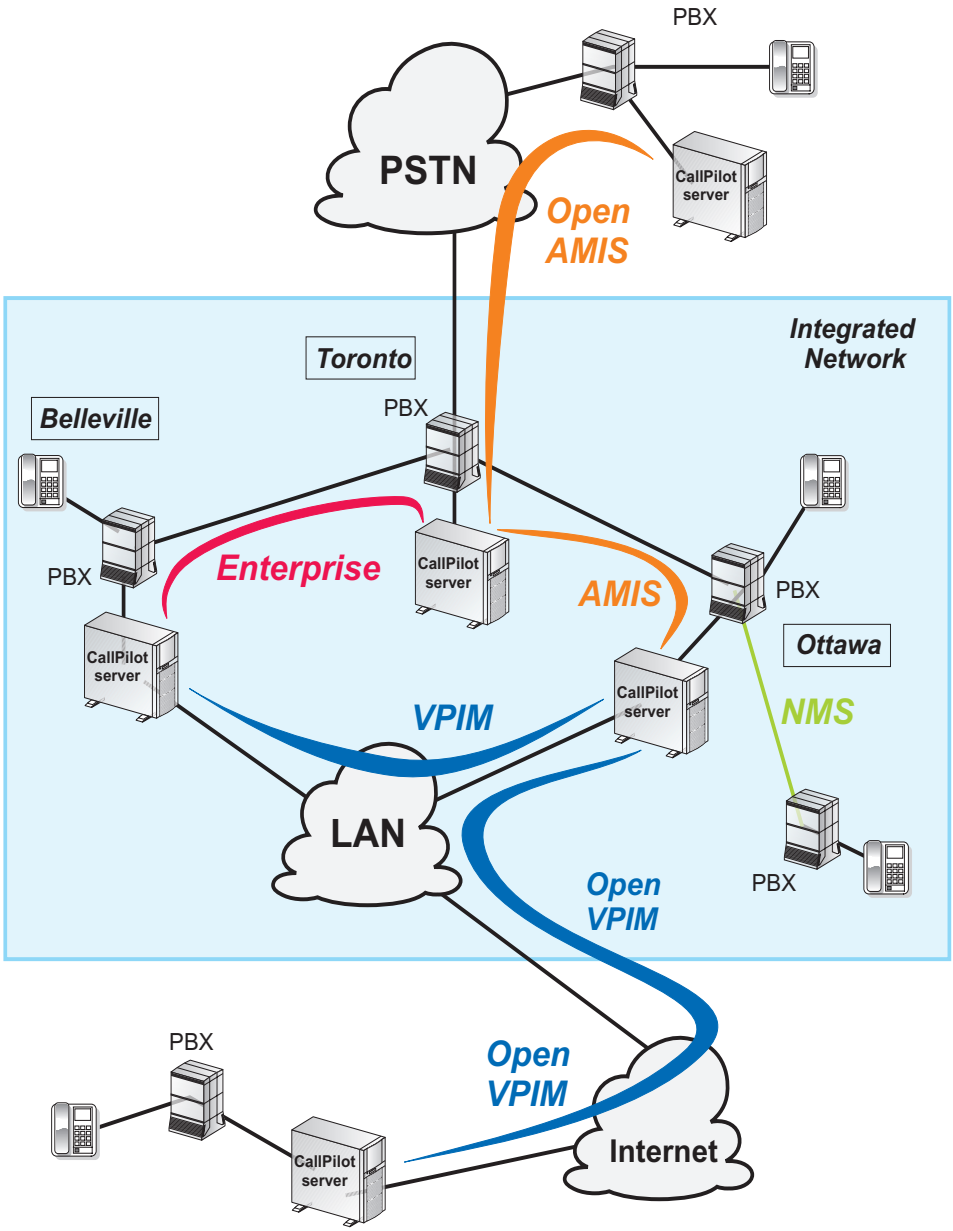
CallPilot currently offers three networking solutions:

- AMIS & Integrated AMIS Networking
- Enterprise Networking
- VPIM Networking

These solutions are available through a single software option.

In addition, CallPilot also supports switches which are networked using Network Message Service (NMS). This is implemented via its own software option.

The following diagram shows a hypothetical network that makes use of all the available CallPilot networking solutions. Different solutions are implemented between different sites, depending on the corporate requirements.


PBX
PSTN
CallPilot server
Open AMIS
Integrated Network
Toronto
Belleville
PBX
PBX
Enterprise
CallPilot server
AMIS
PBX
Ottawa
CallPilot server
CallPilot server
VPIM
NMS
LAN
Open VPIM
PBX
PBX
Open VPIM
CallPilot server
Internet

AMIS & Integrated AMIS Networking

AMIS Networking is an analog networking protocol which works over a voice network. It uses the industry-standard analog Audio Messaging Interchange Specification (AMIS) protocol. AMIS Networking allows users to exchange messages with users of any voice messaging systems that support the AMIS protocol. It is usually used to exchange messages with open sites that are not part of the private messaging network.

AMIS Networking uses dual-tone multi-frequency (DTMF) tones to send information. It supports voice messages, but not fax and text messages.

Integrated AMIS Networking

Integrated AMIS Networking also uses the industry-standard analog Audio Messaging Interchange Specification (AMIS) protocol and offers the same functionality as AMIS Networking. However, Integrated AMIS Networking is used to exchange messages with integrated sites. When a remote site that uses the AMIS protocol is defined within the local network database, it is called an integrated site. Remote sites may use any voice messaging system that supports the AMIS protocol.

It is important to note that the functionality of AMIS Networking is contained within Integrated AMIS Networking. This means that if you implement Integrated AMIS Networking, users can also, if allowed, exchange messages with open sites.

Enterprise Networking

Enterprise Networking is an analog networking protocol which works over a voice network. It uses the Enterprise Networking protocol. This protocol is based on proprietary Nortel extensions to the AMIS protocol, and as such, offers many advantages over AMIS Networking.

Enterprise Networking also uses dual-tone multi-frequency (DTMF) tones to send information. Enterprise Networking supports voice messages but does not support fax and text messages.

Enterprise advantages over AMIS

The Enterprise Networking protocol offers several advantages over the AMIS protocol.

Feature	AMIS protocol	Enterprise Networking protocol
Multiple recipients	Sends one message to each recipient; requires greater system resources and long-distance toll charges	Sends a single message to multiple recipients; requires less system resources and lowers long-distance toll charges
Message length	8-minute maximum	120-minute maximum of all parts, where any individual part can be up to 99 minutes long
Security	Uses no special security features	Uses initiating and responding passwords between the sending and receiving sites before exchanging messages
Increased features	Limited feature availability	Supports additional features such as message privacy, message read acknowledgments, sending Username and Subject information, and Names Across the Network.

VPIM Networking

VPIM Networking provides CallPilot with the capability to exchange multimedia messages (voice, text and fax) using a standard data communications network. VPIM Networking can exchange messages with any other system that uses the same data communications protocol, regardless of vendor.

VPIM Networking formats and sends messages using the standard Internet SMTP protocol. Messages are sent across either a private data network, such as an intranet, or a public data network, the Internet, for delivery.

VPIM Networking also allows messages to be exchanged with both open and integrated sites. For VPIM Networking to work within a private network, the destination must support VPIM and be in the local network database.

In addition, since VPIM Networking transmits messages over data networks, the messages do not incur long-distance toll charges.

Network Message Service

Network Message Service (NMS) permits one CallPilot messaging server to provide messaging services to users on more than one switch location. The CallPilot messaging server is directly connected to a prime switch location. Up to 59 satellite switch locations can be attached to the prime switch location. The CallPilot messaging server provides messaging services to all switch locations.

NMS is transparent to users. A user whose telephone or desktop is attached to a satellite switch location can receive the same services as a user attached to the prime switch location. All users dial the same way to reach the same services.

The collection of switch locations, connections, and the messaging server is known as an NMS network. If an NMS network is a site in a private messaging network, it is called an NMS site.

Combining networking solutions

A messaging network can combine the available networking solutions. Many messaging networks are combinations of several solutions at various sites. In addition, one or more of the sites in a messaging network can be NMS sites. This ability to combine networking solutions allows you to optimize your messaging network and create a customized solution for different business requirements.

However, to exchange messages between any two sites in a messaging network, both sites must have a common networking solution implemented and agree to use it.

The *Network Planning Guide (NTP 555-7101-102)* provides detailed information on these solutions and how to implement and combine them.

Chapter 9

Regulatory information

This chapter includes regulatory information for international installations pertinent to applications such as CallPilot.

In this chapter

Grounding 74

Notice for international installations 74

Electromagnetic compatibility 75

Radio and TV interference 77

Grounding

Make sure that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, connect together. This precaution is for the users' protection, and is particularly important in rural areas.



CAUTION

Risk of equipment damage

The Small System frame ground of each system cabinet or chassis must be tied to a reliable building ground reference.



WARNING

Risk of electrocution

Do not attempt to make electrical ground connections yourself. Contact your local electrical inspection authority or electrician to make electrical ground connections.

For more information on the preceding issues, refer to Chapter 2, "Grounding and power requirements" in the *Planning and Engineering Guide*.

Notice for international installations

If insufficient planning or technical information is available for your country of operation, contact your regional telecommunications distributor or authority for assistance.

European compliance information

Safety specifications

The Small Systems meet the following European safety specifications: EN 60825 and EN 60950.

Electromagnetic compatibility

The following table summarizes the electromagnetic compatibility (EMC) specifications for Class A devices.

Jurisdiction	Standard	Title
United States	FCC CFR 47 Part 15	FCC Rules for Radio Frequency Devices (see Note 1)
Canada	ICES-003	Interference-Causing Equipment Standard: Digital Apparatus
Europe	EN 55022/ CISPR 22	Information technology equipment — Radio disturbance characteristics — Limits and methods of measurement (see Note 2)
	EN 55024	Information technology equipment — Immunity characteristics — Limits and methods of measurement
	EN 61000-3-2	Limits for harmonic current emissions (equipment input current <= 16 A per phase)
	EN 61000-3-3	Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current <= 16 A
Australia	CISPR 22/ AS/NZS 3548	Limits and methods of measurement of radio disturbance characteristics of information technology equipment (see Note 2)
Korea	KN22	Information technology equipment — Radio disturbance characteristics — Limits and methods of measurement
Korea (continued)	KN24	Information technology equipment — Immunity characteristics — Limits and methods of measurement

Jurisdiction	Standard	Title
Taiwan	CNS 13438	Limits and methods of measurement of radio disturbance characteristics of information technology equipment

Note 1: FCC CFR 47 Part 15.21 statement:
“Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.“

Note 2: EN 55022/CISPR 22 statement:
“WARNING
This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.”

Radio and TV interference

Information for the United States

The Small Systems comply with Part 15 of the FCC rules in the United States. Operation is subject to the following two conditions:

- The system must not cause harmful interference.
- The system must accept any interference received, including interference that can cause undesirable operation.

If the Small System causes interference to radio or television reception, which can be determined by placing a telephone call while monitoring, the user is encouraged to try to correct the interference by the following measures:

- Reorient the receiving TV or radio antenna where this can be done safely.
- Move the TV or radio in relation to the telephone equipment.

If necessary, ask a qualified radio or television technician or supplier for additional information. Also, you can refer to the document “How to Identify and Resolve Radio-TV Interference”, prepared by the Federal Communications Commission. This document is available from:

U.S. Government Printing Office
Washington DC 20402

Information for Canada

The Small Systems do not exceed Class A limits for radio noise emissions from digital apparatus, as set out in the radio interference regulations of Industry Canada.

Glossary

This glossary of terms is applicable for all items contained within the CallPilot documentation suite.

A

AC
See alternating current.

ACD
See Automatic Call Distribution.

ACD call
An automatic call distribution (ACD) call enters the system through one or more central lines, and then is presented to an agent within the ACD queue according to the service required by the caller.

ACD queue
A queue of callers to an ACD-DN who are waiting for service.

adapter
Hardware required to support a particular device. For example, network adapters provide a port for the network wire. Adapters can be expansion boards or part of the main circuitry of the computer.

administrator
A user who is responsible for maintaining the CallPilot server.

alternating current
AC electrical power, the raw power supplied by all utility companies, must be converted to direct current (DC) for use in computer systems.

AML
See Application Module Link.

analog
The type of signal used by most telephone connections. A modem converts a digital signal to analog (and vice versa) so that the signal can travel through telephone lines.

API
See application program interface.

APIC
Advanced Peripheral Interrupt Controller

application

This term is generally used to refer to a program that is run to do various types of work on a computer. Although applications carry out many functions, the user can see (and use) only the graphical user interface. Common applications include word processors, databases, and multimedia software. In CallPilot, this term is reserved for an entity (typically a voice menu or service) built by Application Builder. Some of these applications are put into service when they appear in the SDN table.

Application Builder

A graphical program that you use to create CallPilot applications. With Application Builder, you can drag and drop functions (such as menus, announcements, and transfers) into your application and create the call flow (that is, the path that calls follow through your system).

Application Module Link

The signaling protocol (call control) between the CallPilot and the Meridian 1 switch or Succession 1000 system. The AML runs over an Ethernet connection (part of the ELAN).

application program interface

A set of routines, protocols, and tools that programmers use to develop software applications. APIs simplify the development process by providing commonly used programming procedures.

Automatic Call Distribution

A feature on the Meridian 1 or Succession 1000 system that allows a number of programmed phone sets, known as ACD agents, to share equally in answering incoming calls. In the case of CallPilot, the call-queuing capability of ACD is not used, but the call-handling capability of ACD agents is used.

average required bandwidth

The amount of bandwidth that the Capacity Assessment Tool analysis determines is required for the CallPilot server recommended configuration. *See also* bandwidth.

B

bandwidth

The amount of data that the network can transmit, usually expressed in Mbytes per second. *See also* average required bandwidth.

baseboard

See motherboard.

Basic Input/Output System

Flash ROM-based code that runs the Power-On Self-Test (POST) and bootstrap loader. BIOS contains low-level access routines for hardware that may be called from DOS.

baud rate
Refers to signaling rate. The baud rate indicates the number of bits per second (bps) that are transmitted. For example, a baud rate of 300 means that 300 bits are transmitted each second (300 bps).

BIOS
See Basic Input/Output System.

bits
Short for binary digit, the smallest unit of information on a computer. A single bit can hold only one of two values: 0 or 1. A byte is composed of eight consecutive bits.

bits per second
The standard measure of data transmission speeds. For asynchronous communication (which requires 10 bits per character), a baud rate of 300 bits per second (bps) translates to 30 characters per second (cps).

Blue Call Router
An internal software component that routes calls from the control DN (CDN) on the switch to the multimedia application or service. The Blue Call Router (BCR) applies the rules set up for the service in the SDN table, and, thus, determines how and to what service/application the call is offered.

bps
See bits per second.

bridge
A protocol-independent device that connects two LANs or two segments of the same LAN. Bridges are faster (and less versatile) than routers because they forward packets without analyzing and rerouting messages.

bus
A collection of wires that connects the microprocessor and main memory to internal computer components. All buses consist of an address bus that transfers data and a data bus that transfers information about where the data should go. In a network, a bus (also called the backbone) is a main cable that connects all devices on a LAN.

byte
Abbreviation for binary term, a unit of storage capable of holding a single character. On almost all modern computers, a byte is equal to eight bits. Large amounts of memory are indicated in terms of kbytes (1024 bytes), Mbytes (1 048 576 bytes), and Gbytes (1 073 741 824 bytes).

C

cache

A read cache attempts to anticipate and store required data in memory so that it can be retrieved quickly (electronically, rather than mechanically). A write cache electronically holds the data you want to write to disk and slowly writes it to the disk (mechanically).

call channel

A channel on the CallPilot server that carries digital voice, fax, and speech recognition data from the switch to the server. When the data reaches the server, multimedia channels provide various services to the data. Call channels run on links between the switch and the server.

card

A thin, rectangular plate on which chips and other electronic components are placed. Examples of cards include motherboards, expansion boards, daughterboards, controller boards, Network Interface cards, and video adapters.

CAS

Channel associated signalling for T1 links.

CDN

See Controlled Directory Number.

CD-ROM

A type of optical disk capable of storing large amounts of data (up to 1 Gbyte), although the most common size is 630 Mbytes. A single CD-ROM has the storage capacity of 700 floppy disks and is particularly well-suited to information that requires large storage capacity.

central processing unit

Sometimes referred to as the microprocessor, the central processing unit (CPU) more often describes the system unit, which is the box that holds the essential components of a PC (except the keyboard and monitor).

chip

Typically, a chip refers to the small flake of silicon crystal that makes up the microprocessor or some other type of controller.

CLAN

Customer local area network—a network set up by a customer for its data network. CLAN is used by CallPilot for desktop messaging and potentially for system administration. Typically, a CLAN already exists before CallPilot is installed at a customer site. *See also* ELAN.

client

The client part of a client-server architecture. Typically, a client is an application that runs on a personal computer or workstation and relies on a server to perform some operations. For example, an e-mail client is an application that enables you to send and receive e-mail.

CMOS
See Complementary Metal-Oxide Semiconductor.

COM or COMM
Communications port. Usually refers to the Logical Device name of PC serial ports as defined by DOS.

Complementary Metal-Oxide Semiconductor
A commonly used type of semiconductor that is well-suited for use in battery powered devices, such as portable computers, because they require less power than NMOS.

computer name
The name that identifies the CallPilot server on the customer's network.

Controlled Directory Number
Directory number controlled by the BCR subsystem of CallPilot to route callers to available channel resources. A typical configuration for CallPilot requires two CDNs to be set up: one for voice call answering, and one for fax call answering. All other services can use a phantom DN, which maps to one of the two CDNs.

controller board
A special type of expansion board that contains a controller for a peripheral device. When you attach new devices to a computer, such as a disk drive, often you must add a controller board.

Courtesy Stop
An action that takes a channel or component out of service only after the channel or component has finished processing the active call. Courtesy Stop is preferred over a regular Stop. *See also* Stop.

CPU
See central processing unit.

crash
A serious computer failure during which the computer stops working or a program closes unexpectedly. A crash indicates a hardware malfunction or a serious software bug.

D

DAT
See digital audio tape.

data bits
The bits in a byte of data that contain information, as opposed to bits used for starting, stopping, or error checking.

data types
The types of data that you can use to create variables.

daughterboard
Usually used as a synonym for an expansion board, a daughterboard is any printed circuit board that directly or indirectly attaches to a motherboard.

DBMS
Database Management System

DC
See direct current.

DDS
See digital data storage.

desktop messaging
A CallPilot feature that permits mailbox owners to use a computer to access CallPilot messages in the same way that they access e-mail messages. The desktop messaging license also permits the mailbox owner to view and manage the mailbox on the Web.

desktop users
Mailbox owners who have been granted the ability to access their CallPilot voice mailbox, and then send, receive, and process messages with their desktop computer.

DHCP
See dynamic host configuration protocol.

digital audio tape
A type of magnetic tape that uses a helical scan scheme to record data. Digital data storage (DDS) is the most common format for digital audio tape (DAT) cartridges.

digital data storage
DDS is the industry standard for 4 mm helical scan digital audio tape (DAT) cartridges. *See also* DAT.

digital linear tape
A high-capacity 1/2-inch streaming tape cartridge format.

digital signal processor
A special type of coprocessor that manipulates analog data, such as sound, that has been converted to digital form. In CallPilot, digital signal processors (DSPs) are provided in one of the following forms:

- embedded in an MPC section on an MPB16-4 board

- embedded in an MPC section on the motherboard of an IPE (200i or 201i) server
- embedded in a removable MPC-8 card that is inserted into an MPB board or IPE (200i or 201i) server

Each embedded DSP or MPC-8 card provides eight multimedia processing units (MPUs).

DIMM

The protective packaging for microprocessor chips that provides a safe and convenient means of installing and removing the chip.

DIP

A type of protective packaging for silicon memory chips that provides a safe and convenient means of installing and removing the chip.

DIP switch

A series of tiny switches built into circuit boards that enable you to configure a circuit board for a particular type of computer or application. DIP switches are always toggle switches, which means they have two possible positions—on or off (or 1 or 0).

direct current

DC, the electrical power used by computers, comes from a single source (such as a battery) that provides a single voltage that stays at a constant level. AC, the power provided by utility companies, must be converted to DC before it can be used in computer systems.

direct memory access

DMA speeds up system performance by moving blocks of memory around inside the computer (typically, between I/O devices and memory). This process enables the microprocessor to spend its time performing other functions.

directory number

The number that identifies a telephone set on a PBX or in the public network. The directory number can be a local PBX extension (local DN), a public network telephone number, or an automatic call distribution directory number (ACD-DN) (the pilot or group number for an ACD queue).

Disk Operating System

Originally developed by Microsoft, Disk Operating System (DOS) is the standard, IBM-compatible, 16-bit operating system. New operating systems (including Windows 95) do not rely on DOS.

display

The device you look at when you work with a computer (for example, a CRT monitor in desktop systems or a liquid crystal display in notebooks).

DLL
See dynamic link library.

DLT
See digital linear tape.

DMA
See direct memory access.

DN
See directory number.

DOS
See Disk Operating System.

driver
A program that controls a device. Every device, whether it is a printer, disk drive, or keyboard, must have a driver program. A driver acts like a translator between the device and programs that use the device.

DS0
An industry standard term for a single 64 kbs PCM-encoded voice path or channel.

DS30X
A Meridian 1 or Succession 1000 proprietary TDM bus with 32 DS0 bearer channels.

DSP
See digital signal processor.

dual in-line memory module
The protective packaging for microprocessor chips that provides a safe and convenient means of installing and removing the chip.

dual in-line pin
A type of protective packaging for silicon memory chips that provides a safe and convenient means of installing and removing the chip.

dynamic host configuration protocol
A protocol for assigning dynamic IP addresses to devices on a network.

dynamic link library

A library of executable functions or data that can be used by a Windows application. Typically, a dynamic link library (DLL) provides one or more particular functions, and a program accesses the functions by creating either a static or dynamic link to the DLL. Several applications can use a DLL at the same time.

E

ECC

See error correction code.

ECP

See extended capabilities port.

EEPROM

See electronically erasable programmable read-only media.

EIDE

See enhanced IDE.

EISA

See extended industry standard architecture bus.

ELAN

Embedded local area network. A network connection from the switch to the CallPilot server. The ELAN is an Ethernet LAN that is segmented from the customer LAN (CLAN), and enables signaling and administration access to applications related to the Meridian 1 switch or Succession 1000 system. A number of configurations are available to the customer, depending on whether the switch has an address on the CLAN. *See also* CLAN.

electronically erasable programmable read-only media

A memory chip that needs only a higher-than-normal voltage and current to erase its contents. Electronically erasable programmable read-only media (EEPROM) can be erased and reprogrammed without taking it out of its socket. EEPROM gives computers and their peripherals a means of storing data without the need for a constant supply of electricity.

EMI

Electromagnetic interference

enhanced IDE

An IDE hard disk interface enhanced with hardware and firmware changes to support disks larger than 540 Mbytes, four disks instead of two, and faster transfer rates. *See also* IDE.

enhanced parallel port

A parallel port standard for PCs that supports bidirectional communication between the PC and attached devices (such as a printer).

EPP
See enhanced parallel port.

error correction code
A scheme that can detect and fix single-bit memory errors without crashing the system. Also known as Error Detection and Correction (EDAC).

Ethernet
A widely used LAN protocol that uses a bus topology and supports data transfer rates of 10 Mbps.

expansion board
Any board that plugs into one of the computer expansion slots. Expansion boards include controller boards, LAN cards, and video adapters.

expansion bus
Enables expansion boards to access the microprocessor and memory. *See also* bus.

extended capabilities port
A parallel-port standard for PCs that supports bidirectional communication between the PC and attached devices (such as a printer).

extended industry standard architecture bus
A 32-bit bus that accommodates ISA PC boards.

F

FAT
See file allocation table.

FIFO
First in, first out

file allocation table
A table that the operating system uses to locate files on a disk.

FITS
Failures in ten to the ninth hours. The number of failures expected in one million hours.

FQDN
See fully qualified domain name.

full system backup
A complete server backup that consists of a single backup for each logical disk drive installed on the CallPilot server.

fully qualified domain name

The full site name of a system. The full site name consists of a host name and a domain name, including the top-level domain. For example, callpilot.yourcompany.com is a fully qualified domain name (FQDN). “Callpilot” is the host name, “yourcompany” is the second-level domain name, and “com” is the top-level domain name.

G

gateway

Software or a computer running software that enables two different networks to communicate.

Gbyte

Two to the 30th power (1 073 741 824) bytes. One Gbyte is equal to 1024 megabytes.

general protection fault

A computer condition that causes a Windows application to crash. General protection faults (GPFs) are commonly caused when one application attempts to use memory assigned to another application.

gigabyte

See Gbyte.

GPCP

General purpose computing platform

GPF

See general protection fault.

graphical user interface

What is seen on the monitor when a Windows application (or another noncommand-based application) runs. A graphical user interface uses features such as pointers, icons, I-beams, and menus to make the program easier to use.

GUI

See graphical user interface.

H

HAL

See hardware abstraction layer.

handshaking

A process involved in establishing a valid connection or signal between two pieces of hardware or communications software.

hardware abstraction layer
The software layer between the operating system and the hardware.

hub
A common connection point for all 10Base-T or 100Base-T cables connected to a small network. A hub enables data to go from one device to another.

icon
A small picture that represents an object or program in a graphical user interface.

IDE
Commonly used to describe the AT attachment design, the dominant hard disk interface. IDE is a cost-effective interface technology for mass storage devices in which the controller is integrated into the disk or CD-ROM drive.

IMAP
See Internet Message Access Protocol.

Industry Standard Architecture
A 16-bit standard interface for add-in cards.

input/output
Refers to any operation, program, or device that enters data into a computer or extracts data from a computer.

integrated client
An e-mail client that desktop messaging supports, which provides access to desktop messaging commands, configuration options, and online Help directly from the e-mail client interface. During desktop messaging installation, integrated clients are automatically configured with CallPilot mailbox information, and customized to include desktop messaging features. Integrated clients include Microsoft Outlook, Novell GroupWise, and Lotus Notes.

interactive voice response
An application that allows telephone callers to interact with a host computer via prerecorded messages and prompts.

Internet client
An e-mail client that desktop messaging supports, which does not provide access to desktop messaging commands, configuration options, and online Help directly from the e-mail client interface. You must manually configure this type of e-mail client to work with desktop messaging. *See also* integrated client.

Internet Message Access Protocol

A protocol for retrieving e-mail messages from a server. Internet Message Access Protocol (IMAP) enables mailbox owners to retrieve CallPilot messages from the CallPilot server.

inter-process communication

IPC enables one process to communicate with another process. It allows one application to control the other, and permits several applications to share the same data without interfering with one another. Also, a generic term for the communication of commands, events, or data between software processes.

interrupt request

Hardware lines used by devices to send interrupt signals to the microprocessor, temporarily shifting program execution to another section of code. When a new device is added to a PC, often the IRQ number must be set to specify which interrupt line the device may use.

I/O

See input/output.

IP address

An identifier for a computer or device on a TCP/IP network. Networks use the TCP/IP protocol to route messages based on the IP address of the destination. The format of an IP address is a 32-bit numeric address written as four numbers separated by periods. Each number can be 0–255. For example, 1.160.10.240 can be an IP address.

IPE

Intelligent peripheral equipment.

IPC

See inter-process communication.

IRQ

See interrupt request.

ISA

See Industry Standard Architecture.

IVR

See interactive voice response.

IVR ACD-DN

A directory number that routes a caller to a specific IVR application. An IVR ACD-DN must be acquired for non-integrated IVR systems.

J

jumper

A metal bridge that closes an electrical circuit. Typically, a jumper consists of a plastic plug that fits over a pair of protruding pins. Jumpers are sometimes used to configure expansion boards. By placing a jumper plug over a different set of pins, you can change the parameters of a board.

K

kbyte

When used to describe data storage, a kbyte represents 1024 bytes. When used to describe data transfer rates, a kbyte represents 1000 bytes.

keycoded features

Features that are packaged and priced in a license agreement between Nortel Networks and the customer. The terms of the agreement are specified in a keycode calculation. The keycode calculation specifies parameters such as

- feature enablement
- the maximum number of feature-capable ports
- the maximum number of mailbox owners

kilobyte

See kbyte.

L

LAN

See local area network.

LCD

Liquid crystal display

LDAP

See Lightweight Directory Access Protocol.

LED

Light-emitting diode

Lightweight Directory Access Protocol

A set of protocols that enables e-mail clients to access a directory. In CallPilot, LDAP settings control access to the CallPilot address book.

local area network

A computer network that spans a relatively small area. Most LANs connect workstations and personal computers, and are confined to a single building or group of buildings. LANs can transmit data at very fast rates, but the distances are limited.

M

M1
Meridian 1 switch

Mbyte
When used to describe data storage, a megabyte represents 1 048 576 (2 to the 20th power) bytes. When used to describe data transfer rates, as in Mbps, a megabyte represents one million bytes.

media bus
The signal pathway used to route voice or fax between DSPs (that is, MPCs) and telephony interfaces (for example, a DS30x link).

megabyte
See Mbyte.

megahertz
One megahertz (MHz) represents one million cycles per second.

Meridian Mail
A Nortel Networks product that provides voice messaging and other voice and fax services.

Message Waiting Indication
An indicator that is activated whenever the mailbox receives a message that meets the criteria specified in the mailbox owner's message waiting indication options. On the phoneset, the message waiting indicator is a red light that lights up. On the desktop, the message waiting indicator is an icon in the form of a red phone.

MHz
See megahertz.

MMFS
See Multi-Media File System.

motherboard
The principal board that has connectors for attaching devices to the bus. Typically, the motherboard contains the CPU, memory, and basic controllers for the system. On PCs, the motherboard is often called the system board.

MPB board
A Nortel Networks proprietary voice processing board that is installed inside the CallPilot tower or rackmount server. For Meridian 1 and Succession 1000 systems, it also provides the hardware connection between the CallPilot server and the MGate card on the switch.

MPC
See multimedia processing card.

MPU
See Multimedia Processing Unit.

MTBF
Mean time between failures

Multi-Media File System
A proprietary file system used by CallPilot to store user mailboxes, voice messages, fax messages, and other application data. The Multi-Media File System (MMFS) data resides in several large files (VS1T, VS1V, and so on) stored within the file system provided by the Windows NT operating system.

multimedia channel
A channel on the CallPilot server that processes the call data according to the transmission type of a call (voice, fax, or speech recognition).

Multimedia channels are provided in two forms:

- in embedded multimedia processing card (MPC) sections on an MPB16-4 board or IPE (200i or 201i) server
- in removable MPC-8 cards, which are inserted into an MPB16-4 board

Each MPC or MPC-8 card supports up to eight multimedia channels.

multimedia processing card
Nortel Networks proprietary hardware that processes the voice and data signals that arrive from the switch. A multimedia processing card (MPC) can be in one of the following forms:

- embedded on an MPB16-4 board
- embedded on the motherboard of an IPE (200i or 201i) server
- a removable MPC-8 card that is inserted into an MPB board or IPE (200i or 201i) server

Each MPC contains one embedded DSP and provides eight multimedia processing units (MPUs).

Multimedia Processing Unit
A measure of DSP processing power. A Multimedia Processing Unit (MPU) supports a session or connection of different media types (for example, voice, fax, and automated speech recognition). The number of MPUs required on the CallPilot server is based on the types of channels used by CallPilot.

MWI
See Message Waiting Indication.

MWI DN
The directory number to which the message waiting indicator is directed.

My CallPilot
A suite of web-based applications for CallPilot mailbox owners. It provides a central graphical interface for managing messages, mailbox and messaging options, and audio conferences. It includes the following tools:

- Web Messaging
- Mailbox Manager

The applications and features in My CallPilot that are available to mailbox owners are determined by the software installed on the system and privileges assigned by the CallPilot administrator.

N

NetBEUI
See NetBIOS enhanced user interface.

NetBIOS
See Network Basic Input Output System.

NetBIOS enhanced user interface
An enhanced version of the NetBIOS protocol used by network operating systems, such as LAN Manager, LAN Server, Windows for Workgroups, Windows 95, and Windows NT.

Network Basic Input Output System
An application programming interface (API) that augments the DOS BIOS by adding special functions for local area networks (LANs). Almost all LANs for PCs are based on the NetBIOS. Some LAN manufacturers have even extended it, adding additional network capabilities.

network interface card
An expansion board that enables a PC to be connected to a local area network (LAN).

New Technology File System
The file system introduced as part of the Windows NT operating system.

NIC
See network interface card.

NTFS
See New Technology File System.

NTLDR
Windows NT bootstrap loader program.

NVRAM
Non-Volatile Random Access Memory

O

OA&M
Operations, administration, and maintenance

object linking and embedding
A compound document standard that enables you to create objects with one application, and then link or embed them in a second application.

ODBC
See Open Database Connectivity.

OEM
Original equipment manufacturer

OLE
See object linking and embedding.

Open Database Connectivity
A Microsoft-defined database API standard.

Open System Interconnection
A worldwide communications standard that defines a framework for implementing protocols in seven layers.

operational measurements
Data is used for reporting system activity and usage. Many activities within a CallPilot system generate operational measurements ()Ms). Reports generated using OM data allow the administrator to monitor traffic and billing on the system.

OS
Operating System

OSA
Operating System Abstraction Layer

OSI
See Open System Interconnection.

P

parallel port
A parallel interface for connecting an external device, such as a printer. Most personal computers have both a parallel port and at least one serial port.

parity
The type of bit used to evaluate the accuracy of data transmission. A parity bit is a unit of data and is used to verify whether the data was transmitted accurately. This verification technique is called parity checking. The sending and receiving device must use the same parity for data transmission.

PBX
See private branch exchange.

PC
See personal computer.

PCEB
PCI to EISA Bus Controller

PCI
See Peripheral Component Interconnect Bus.

PCMCIA
See Personal Computer Memory Card International Association.

Peripheral Component Interconnect Bus
A new 32- or 64-bit local bus standard for PCs.

personal computer
A computer having an architecture that is compatible with the IBM PC.

Personal Computer Memory Card International Association
An industry group dedicated to promoting the new PCMCIA/PC Card Standard (credit-card-sized peripherals for PCs).

phantom TN
Terminal numbers that have no associated physical hardware. They enable the definition of directory numbers without the need for line cards. They are typically used with services and applications on CallPilot. *See also* terminal number.

PMC
PCI and Memory Controller

POST
See Power-on self-test.

Power-on self-test

Initializes and performs rudimentary tests on baseboard hardware, including CPU, floating point unit, interrupts, memory, real-time clock, video, and auto-initializing PCI and EISA bus.

private branch exchange

A telephone switch typically used by a business to service its internal telephone needs. A private branch exchange (PBX) usually offers more advanced features than are generally available on the public network. A PBX interfaces with the public network central office using circuits known as trunks.

protocol

An agreed-upon format for transmitting data between two devices. The protocol determines the type of error checking to be used, the data compression method (if any), how the sending device indicates that it has finished sending a message, and how the receiving device indicates that it has received a message.

R

RAID

See Redundant Array of Inexpensive Disks.

RAM

See random access memory.

random access memory

The most common type of memory found in computers and other devices, such as printers. The term random access memory (RAM) is usually synonymous with main memory, the memory available to programs. For example, a computer with 8 Mbytes RAM has approximately 8 million bytes of memory that programs can use.

RAS

See Remote Access Services.

read-only memory

Computer memory on which data has been prerecorded and cannot be removed.

real-time clock

A clock that keeps track of the time even when the computer is turned off. Do not confuse a computer's real-time clock with its CPU clock. The CPU clock regulates the execution of instructions.

Redundant Array of Inexpensive Disks

A system of redundant hard drives organized as a pack, which is defined as a logical drive that allows continuous functionality and data to be fully recovered in the event of a crash of any of the hard drives within that pack.

registry
Windows NT central database for storing services, defaults, and so on.

Remote Access Services
A feature built into Windows NT that enables users to log on to an NT-based LAN using a modem, X.25 connection, or WAN link.

Reporter
A CallPilot web-based application that helps you analyze and manage your CallPilot system. Reporter converts raw statistics from your server into easy-to-read reports and alerts, which you can then

- view on screen
- print on a daily, weekly, or monthly basis
- export to a variety of file formats
- customize for easier reading

ROM
See read-only memory.

route
Defines a group of trunks. Each trunk carries either incoming or outgoing calls to the switch.

router
A device that connects two LANs. Routers are similar to bridges but provide additional functionality, such as the ability to filter messages and forward them to different places based on various criteria.

RPM
Revolutions per minute

RTC
See real-time clock.

S

SCA
See single connector architecture.

SCM
See Service Control Manager.

SCSI
See Small Computer System Interface.

SCU
See Software Configuration Utility.

SDN table
The CallPilot equivalent of the Meridian Mail VSDN table. This is where the administrator

- associates dialable numbers (DNs) with applications and services
- specifies the channel media type
- configures the minimum and maximum number of channels associated with a service

See also Service Directory Number.

serial port
A general-purpose interface that can be used for almost any type of device, including modems, mice, and printers (although most printers are connected to a parallel port). Most serial ports on personal computers conform to the RS-232C or RS-422 standards.

server
A computer or device on a network that manages network resources. Examples of servers include file servers, print servers, network servers, and database servers.

service
Process that adheres to a Windows NT structure and requirements. It provides system functionality. In CallPilot, a service is functionality that is made available to mailbox callers via a Service Directory Number (SDN).

Service Control Manager
A Windows NT process that manages the different services on the computer.

Service Directory Number
The number that callers dial to access a CallPilot service. Each SDN must be unique so that when a caller dials a number, the system can identify which service is being requested. SDNs are defined on the server and stored in the SDN table. When a caller dials a number to access a service, the system looks up the number in the SDN table and activates the appropriate service.

SIMM
Single In-line Memory Module

Simple Network Management Protocol
A set of protocols for managing complex networks. SNMP works by sending messages, called protocol data units (PDUs), to different parts of a network, and then analyzing the responses.

single connector architecture
A method for supplying power and data lines in one connector on hard disks. It provides hot-swap capability.

Small Computer System Interface
A standard for connecting and controlling mass storage devices, such as CD-ROMS, tape drives, and hard disks.

Small System Controller
The Small System Controller pack consists of the CPU, memory, network conference, and Ethernet controller.

SMDI
Station message desktop interface.

SMI
System Management Interrupt

SNMP
See Simple Network Management Protocol.

Software Configuration Utility
A utility used to configure PCI and EISA cards. It can also set BIOS parameters.

Speech Activated Messaging
A CallPilot feature that substitutes DTMF commands (generated when the phoneset keys are pressed) with speech recognition technology. Speech Activated Messaging allows mailbox owners to speak commands for mailbox navigation, playback of messages, recording, composing, and sending of messages. It is particularly useful for areas with low DTMF penetration, and when performing tasks that require undivided attention (for example, driving). **Note:** Speech Activated Messaging requires four times the resources required by voice messaging.

SRAM
Static Random Access Memory

Stop
An action that takes a channel or component out of service immediately, regardless of whether the channel or component is currently processing calls. All active calls are dropped immediately. *See also* Courtesy Stop.

stop bit
In asynchronous communications, a bit that indicates that a byte has just been transmitted. Every byte of data is preceded by a start bit and followed by a stop bit.

Succession 1000

An IP PBX that provides telephony and data capabilities over an IP network. The Succession 1000 system consists of the following major components:

- Call Server
- Media Gateway
- Media Gateway Expansion

SVGA

Super Video Graphics Adapter

switch

In data networks, a device that filters and forwards frames, or packets of information. In telephone networks, a switch is the device that processes and routes telephone calls.

switch resource

Devices that are configured on the switch through overlays.

system pack

A logical drive created from two or more physical hard disks using the RAID software configuration utility.

T

TCP/IP

See Transmission Control Protocol/Internet Protocol.

telephony

The science of translating sound into electrical signals, transmitting them, and then converting them back to sound. The term is used frequently to refer to computer hardware and software that performs functions traditionally performed by telephone equipment.

terminal number

A configuration value on the Meridian 1 or Succession 1000 system that defines the location of a phoneset (or ACD agent) or trunk. The terminal number refers to a specific unit on a card that is installed in the switch.

time switch

An application-controlled hardware entity that is responsible for routing voice and fax traffic to and from the media bus.

TN

See terminal number.

Transmission Control Protocol/Internet Protocol

The suite of communications protocols used to connect hosts on the Internet. TCP/IP is the standard for transmitting data over networks.

trunk

A communications link between a PBX and the public central office, or between PBXs. There are various trunk types that provide services, such as Direct Inward Dialing (DID trunks), ISDN, and Central Office connectivity.

U

unicode

A worldwide 16-bit character-encoding standard that allows text to be displayed in a wide choice of international languages.

uninterruptible power supply

A power supply that includes a battery to maintain power in the event of a power outage. Typically, an uninterruptible power supply (UPS) keeps a computer running for several minutes after a power outage, enabling you to save data that is in RAM and shut down the computer safely.

UPS

See uninterruptible power supply.

utility

A program that performs a very specific task, usually related to managing system resources. Operating systems contain a number of utilities for managing disk drives, printers, and other devices.

V

VGA

See video graphics adapter.

video adapter

An expansion board that contains a controller for a graphics monitor.

video graphics adapter

A standard video interface for computers.

Voice Messaging

The basic component of any messaging system, including the CallPilot unified messaging system.

voice port

A channel within an IVR system. A voice port is defined as a 2500 phoneset for third-party IVR systems, or as an RCS (517 or 2009) phoneset for Meridian Mail.

W

WAN

See wide area network.

Web Messaging

A CallPilot web-based tool for managing CallPilot and e-mail messages. It enables mailbox owners to:

- access their CallPilot mailbox anywhere Internet access is available
- view and play messages
- send text, voice, and fax messages
- view e-mail messages from external IMAP e-mail accounts

Web Messaging is a part of the My CallPilot suite of applications.

wide area network

A computer network that spans a relatively large geographical area. Typically, a wide area network (WAN) consists of two or more local area networks (LANs). The largest WAN in existence is the Internet.

workload scenarios

The workload scenarios define typical patterns of system operations, and are not directly related to the various hardware configurations of the system. There are five typical workload scenarios (entry, small, medium, large, and upper end) that are used in performance evaluation for CallPilot.

X

XBUS

Two parallel bus structures, one for DMA-compatible devices, and one for memory devices that do not support DMA cycles. XBUS connects the real-time clock, flash memory, NVRAM, and keyboard/mouse controller.

Z

zero insertion force

A type of socket.

ZIF

See zero insertion force.

Index

Numerics

1002rp server 49
201i server 42
703t server 45

A

administrators 36
alert reports 54
AMIS Networking description 68
AMIS Networking protocol
  compared with Enterprise Networking protocol 69
antistatic wrist strap, using 23

B

boards
  handling 24
  installing 25

C

CallPilot server
  remote administration of 53
cautions
  general safety 20, 21, 22
  handling components 24
  hard drive
    jarring 25
    vibration or physical shock 25
CD-ROM
  ejecting from CD-ROM drive 26
  handling 26
  loading into CD-ROM drive 26
components, safety precautions 24

D

discharging static 23
documentation
  Callpilot suite 10
  enhancements 17
  feedback 14
  map 11
  online 13

E

electrostatic discharge
  avoiding 23
  wrist strap, using 23
end users 39
Enterprise Networking description 68
Enterprise Networking protocol
  advantages over AMIS protocol 69
ESD
  avoiding 23
  discharging static 23
  wrist strap, using 23

F

feedback for documentation 14
Fundamentals guide 7

G

grounding
  requirements for single-point 27

H

hard drive
checking for shipping damage 25
safety precautions
jarring 25
physical shock 25
vibration 25

I

installers 34
Integrated AMIS Networking description . 68

M

maintenance personnel 38
managers 33

N

Network Message Service (NMS) 70
networking solutions
AMIS Networking 68
CallPilot 66
combining 71
Enterprise Networking 68
Integrated AMIS Networking 68
Network Message Service (NMS) 70
VPIM Networking 70
new features 16

O

online guides 13
online Help, accessing 13
operating system (OS) 16

P

personnel roles 29
administrators 36
end users 39
installers 34
maintenance personnel 38
managers 33
planners 33
technicians 34
physical shock, hard drive 25
planners 33
precautions, safety
components 24
electrostatic discharge 23
general 20, 21, 22
hard drive
checking for shipping damage 25
jarring 25
physical shock 25
vibration 25

R

regulatory information 73
electromagnetic compatibility 75
European compliance information ... 74
grounding 74
radio and TV interference 77
remote administration 53

S

safety precautions
components 24
electrostatic discharge 23
general 20, 21, 22
hard drive
checking for shipping damage 25
jarring 25
physical shock 25
vibration 25

server
1002rp 49
201i 42
703t 45
cooling and airflow 24
skills you need
switch knowledge 32
software
Application Builder 56
CallPilot 51
CallPilot Manager 52
CallPilot Reporter 54
CallPilot server 64
Desktop Messaging 58
My CallPilot 60
static, discharging 23
switches
knowledge required 32

T

technical support 14
technicians 34
troubleshooting 14

V

vibration, hard drive 25
VPIM Networking description 70

W

warnings
description 20
field maintenance 20
What is CallPilot? 7
What's New 16

CallPilot
Fundamentals Guide

Copyright © 2004 Nortel Networks. All Rights Reserved.

Information is subject to change without notice. Nortel Networks reserves the right to make changes in design or components as progress in engineering and manufacturing may warrant.

The process of transmitting data and call messaging between the PBX and CallPilot is proprietary to Nortel Networks. Any other use of the data and the transmission process is a violation of the user license unless specifically authorized in writing by Nortel Networks prior to such use. Violations of the license by alternative usage of any portion of this process or the related hardware constitutes grounds for an immediate termination of the license and Nortel Networks reserves the right to seek all allowable remedies for such breach.

Publication number:	555-7101-010
Product release:	3.0
Document release:	Standard 1.0
Date:	November 2004

