

Lucent Technologies
Bell Labs Innovations



INTUITY™ Messaging Solutions
Digital Networking

585-310-567
Comcode 107889339
Issue 2
December 1996

Copyright © 1996, Lucent Technologies
All Rights Reserved
Printed in U.S.A.

Notice

Every effort was made to ensure that the information in this book was complete and accurate at the time of printing. However, information is subject to change.

Your Responsibility for Your System's Security

Toll fraud is the unauthorized use of your telecommunications system by an unauthorized party, for example, persons other than your company's employees, agents, subcontractors, or persons working on your company's behalf. Note that there may be a risk of toll fraud associated with your telecommunications system and, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

You and your system manager are responsible for the security of your system, such as programming and configuring your equipment to prevent unauthorized use. The system manager is also responsible for reading all installation, instruction, and system administration documents provided with this product in order to fully understand the features that can introduce risk of toll fraud and the steps that can be taken to reduce that risk. Lucent Technologies does not warrant that this product is immune from or will prevent unauthorized use of common-carrier telecommunication services or facilities accessed through or connected to it. Lucent Technologies will not be responsible for any charges that result from such unauthorized use.

Lucent Technologies Fraud Intervention

If you *suspect that you are being victimized* by toll fraud and you need technical support or assistance, call Technical Service Center Toll Fraud Intervention Hotline at 1 800 643-2353.

Federal Communications Commission Statement

Part 15: Class A Statement. 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 instructions, 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.

Part 68: Network Registration Number. This equipment is registered with the FCC in accordance with Part 68 of the FCC Rules. It is identified by FCC registration number AS5USA-20411-VM-E.

Part 68: Answer-Supervision Signaling. Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 Rules. This equipment returns answer-supervision signals to the public switched network when:

- Answered by the called station
- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

This equipment returns answer-supervision signals on all DID calls forwarded back to the public switched telephone network. Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received

Canadian Department of Communications (DOC)

Interference Information

This digital apparatus does not exceed the Class A limits for radio noise emissions set out in the radio interference regulations of the Canadian Department of Communications.

Le Présent Appareil Numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Trademarks

See "About This Document."

Ordering Information

Call: Lucent Technologies Publications Center
Voice 1 800 457-1235 International Voice 317 361-5353
Fax 1 800 457-1764 International Fax 317 361-5355

Write: Lucent Technologies Publications Center
P.O. Box 4100
Crawfordsville, IN 47933

Order: Document No. 585-310-567
Comcode 107889339
Issue 2, December 1996

For additional documents, refer to the section in "About This Document" entitled "Related Resources."

You can be placed on a standing order list for this and other documents you may need. Standing order will enable you to automatically receive updated versions, billed to account information that you provide. For more information or to be put on a list to receive future issues of this document, contact the Lucent Technologies Publications Center.

European Union Declaration of Conformity

Lucent Technologies Business Communications Systems declares that MAP/100 equipment specified in this document conforms to the referenced European Union (EU) Directives and Harmonized Standards listed below:

EMC Directive 89/336/EEC
Low-Voltage Directive 73/23/EEC



The "CE" mark affixed to the equipment means that it conforms to the above directives.

This document was prepared by the Product Documentation Development, Lucent Technologies, Columbus, OH.



Contents

About This Book	xi
■ Purpose	xi
■ Intended Audiences	xi
■ Release History	xii
■ How to Use This Book	xii
■ Conventions Used in This Book	xiv
Terminology	xiv
Keyboard and Telephone Keypad	
Representations	xvi
Screen Displays	xvii
Data Entry Conventions	xvii
Safety and Security Alert Labels	xviii
■ Trademarks and Service Marks	xix
■ Related Resources	xxi
Documentation	xxi
Training	xxi
■ How to Comment on This Book	xxii

1	Introduction to Digital Networking	1-1
	■ Overview	1-1
	■ Purpose	1-1
	■ What Is Networking?	1-2
	Digital Networking Operation	1-2
	AMIS Analog Networking Operation	1-3
	■ How Digital Networking Enhances	
	AUDIX Messaging	1-4
	■ Networking Capacities and Capabilities	1-5
	Maximum Capacities	1-5
	Security	1-5
	Network Connection Types	1-5
	■ Networking Terminology	1-6
	Machine Types	1-6
	User Types	1-6
	Digital Networking Strategies	1-8
	■ Example of a Basic Network	1-10

Contents

Sending a Message to an Administered Remote User	1-12
Sending a Message to a Non-Administered Remote User	1-13
■ Digital Networking Feature Overview	1-14
Remote Updates	1-14
Network Turnaround	1-14
Scheduling	1-15
Retry Strategies	1-15
Administration Log	1-16

2	INTUITY AUDIX Digital Networking Description	2-1
■	Overview	2-1
■	Purpose	2-1
■	Introduction	2-2
	Message Components	2-2
	Maximum Capacities	2-3
■	Types of Networking Connections	2-3
■	Digital Networking Port Capacities	2-5
■	System Capacities with Digital Networking	2-6
	Digital Networking Requirements	2-8
■	Digital Networking Components	2-8
	ACCX Card	2-8
	LAN Card	2-12
	Modems	2-17
■	Connectivity Examples	2-18
■	Switch Requirements	2-20
	Circuit Pack Requirements	2-20
	Switch Administration	2-20
■	Considerations for Networking with Other AUDIX Systems	2-21
	INTUITY AUDIX Release 4	2-21
	INTUITY AUDIX Release 3	2-21
	INTUITY AUDIX Release 2 and INTUITY AUDIX Release 1	2-21
	DEFINITY AUDIX R3.2 System	2-21
	AUDIX R1 System	2-22

Contents

Voice Messaging Encoding	2-22
■ Messaging Feature Considerations	2-23
■ Lucent INTUITY Message Manager Considerations	2-24
■ Fax Considerations	2-24
■ E-mail Considerations	2-25
Sending to a Voice-Only System	2-26
Sending to an INTUITY AUDIX R3 Fax-Enabled System	2-27
Receiving from a Remote System	2-28
Synchronization of E-mail and Voice Mailboxes	2-28
■ ELA Considerations	2-30

3	Types of Connections	3-1
■	Overview	3-1
■	Purpose	3-2
■	DCP Mode 1 — 56 Kbps	3-3
	Requirements	3-3
	Sample Configuration	3-4
	56 Kbps Service Facilities	3-4
	INTUITY AUDIX Requirements for DCP Mode 1	3-6
	Switch (or Customer) Requirements for DCP Mode 1	3-6
	Sample Administration for a Remote System	3-8
■	DCP Mode 3 — 64 Kbps	3-9
	Requirements	3-9
	Sample Configuration	3-10
	DCP Mode 3 for a 5ESS Switch	3-11
	Intuity AUDIX Requirements for DCP Mode 3	3-12
	Switch (or Customer) Requirements for DCP Mode 3	3-12
	Colocated Requirements	3-12
	Interlocation Requirements	3-13
	Switch Administration Requirements for DCP Mode 3	3-13
	Sample Administration for a Remote System	3-14
■	EIA RS-232	3-15
	Switched RS-232 Using Modems	3-15

Contents

Sample Configurations	3-16
Sample Administration for a Remote System	3-19
■ TCP/IP	3-20
Advantages	3-20
Throughput	3-20
Sample Configurations	3-21
Customer Requirements for TCP/IP	3-22
Sample Administration for a Remote System	3-23
■ Mixtures of Connection Types	3-23
Considerations	3-24
Sample Networking Channel Administration Window	3-25
Sample Configuration	3-26
■ Considerations for Choosing a Connection Type	3-27

4	Networking Administration	4-1
■	Overview	4-1
■	Purpose	4-2
■	Initial Administration Tasks	4-3
	Order of Initial Administration Tasks in this Chapter	4-5
■	Viewing the Feature Options Window	4-5
	Accessing the Feature Options Window	4-5
■	Changing the Number of Administered Remote Users	4-7
■	Adding or Changing TCP/IP	4-9
■	Administering Network Channels	4-13
	Accessing the Networking Channel Administration Window	4-13
	Enabling or Changing the Networking Ports	4-15
	Configuring TCP/IP Channels	4-20
■	Changing Local Machine Information	4-22
	Changing the Local Machine Profile	4-26
■	Adding a Remote Machine	4-31
	Completing the Digital Network Machine Administration Window	4-31
	Completing the Machine Profile Screen for the Remote Machine	4-35
■	Changing Remote Machine Information	4-41

Contents

Changing the Digital Network Machine Administration Window	4-41
Changing the Remote Machine Profile Screen	4-42
■ Renaming the Local and Remote Machines	4-44
Renaming the Local Machine	4-44
Renaming a Remote Machine	4-46
■ Deleting Remote Machines	4-47
Re-Adding a Deleted Machine	4-48
■ Listing Address Ranges	4-49
■ Listing Remote Extensions	4-51
■ Viewing Machine Information	4-53
Viewing the Machine Lists	4-53
Viewing the Local Machine Administration Window	4-56
Viewing the Digital Network Machine Administration Window for the Remote Machine	4-57
Viewing the Machine Profile Screen for Local or Remote Machines	4-58

5	Remote User Administration	5-1
■	Overview	5-1
■	Purpose	5-1
■	Types of Remote Users	5-2
■	What are Remote Updates?	5-2
	Types of Remote Updates	5-3
	Remote Updates Versus Manual Entries	5-4
■	Setting up Remote Updates for Your Local System	5-5
■	Setting up Remote Updates with Specific Remote Systems	5-8
■	Running a Remote Update Manually	5-12
■	Viewing the Remote Extensions List	5-14
■	Setting Automatic Deletion of Non-Administered Remote Users	5-16
■	Administering Remote Users Manually	5-18
	Adding a Remote User Manually	5-18
	Changing Remote User Data Manually	5-20
	Deleting Remote Users Manually	5-21
■	Recording Remote User Names	5-22

Contents

Verify a User's Name Recording	5-23
--------------------------------	------

6	Monitoring Traffic and Using the Networking Reports	6-1
	■ Overview	6-1
	■ Purpose	6-1
	■ Monitoring Traffic	6-2
	■ Network Load Daily Traffic Report	6-3
	Accessing the Network Load Daily Traffic Report	6-3
	■ Network Load Hourly Traffic Report	6-8
	Accessing the Network Hourly Traffic Report	6-8
	■ Remote Messages Daily Traffic Report	6-14
	■ Remote Messages Monthly Traffic Report	6-18

7	Troubleshooting	7-1
	■ Overview	7-1
	■ Purpose	7-1
	■ What To Do Before Calling the Remote Support Center	7-2
	■ Performing a Remote Connection Test	7-3
	■ Sending a Test Message to Remote Users	7-6
	■ Receiving a Test Message from Remote Users	7-7
	■ Testing the Network Connections for the Local System	7-8
	Performing a Channel Internal Loop-Around Test	7-8
	Performing a Modem Loop-Around Test	7-10
	Performing a Network Loop-Around Test	7-12
	■ Performing a Networking Board Reset	7-16
	■ Performing a Networking Board Trace	7-17
	■ Busying Out and Releasing Channels	7-21
	Busying Out Channels	7-21
	Releasing Channels	7-22
	■ Performing TCP/IP Diagnostics	7-23
	Viewing Packet Statistics	7-23

Contents

Testing the Lucent INTUITY System's TCP/IP Software	7-26
Testing the Connection between the INTUITY AUDIX System and a Remote Machine	7-28

A	Switch Administration	A-1
	■ Overview	A-1
	■ Purpose	A-1
	■ System 75 and DEFINITY Generic 1 and Generic 3	A-2
	Administering the DCP Digital Networking Ports	A-2
	Administering a Hunt Group for DCP Networking Ports	A-3
	Administering DCP Mode 1	A-4
	Administering DCP Mode 3	A-5
	Administering RS-232	A-5
	Administering TCP/IP	A-7
	■ System 85	A-7
	Administering the DCP Networking Ports	A-7
	Administering DCP Mode 1	A-9
	Administering DCP Mode 3	A-10
	Administering RS-232	A-11
	Administering TCP/IP	A-11
	■ DEFINITY Generic 2	A-11
	Manager III and Manager IV Administration	A-12
	Administering the DCP Networking Ports Using Manager II	A-12
	Administering DCP Mode 1	A-13
	Administering DCP Mode 3	A-13
	Administering RS-232	A-14
	Administering TCP/IP	A-14

B	Digital Network Planning	B-1
	■ Overview	B-1
	■ Purpose	B-1
	■ Design Center Overview	B-2

Contents

- Planning with the Design Center B-3
- Network Map B-4
- Digital Network Planning Worksheets B-9

C	Paradyne Comsphere Modem Settings for RS-232 Connections	C-1
	■ Overview	C-1
	■ Purpose	C-1
	■ Configuring the Paradyne Comsphere 3820 Modem	C-2
	Selecting the UNIX Dial Default Factory Configuration	C-2
	Setting the Async DTE Rate to the Required Speed on the 3820 Modem	C-3
	Setting the DTR Action and DSR Control to Standard RS-232	C-3
	Setting the Error Control Mode to Buffer Mode	C-4
	■ Paradyne Comsphere 3910 Front Panel Settings	C-5
	■ Paradyne Comsphere 3810/3820 Front Panel Settings	C-9

ABB	Abbreviations	ABB-1
------------	----------------------	-------

GL	Glossary	GL-1
-----------	-----------------	------

IN	Index	IN-1
-----------	--------------	------

About This Book

Purpose

This document, *Lucent INTUITY™ Messaging Solutions Digital Networking*, 585-310-567, describes INTUITY AUDIX® digital networking and provides instructions for administering digital networking, administering remote users, using networking traffic reports, troubleshooting digital networking, and appendices for switch administration and planning.

The book has been revised to include information for both Release 3 and Release 4 of Lucent INTUITY AUDIX digital networking.

Intended Audiences

The primary audience for this document includes customer telecommunications analysts and system administrators. Secondary audiences include the following from Lucent Technologies:

- Field support
- Technical Services Organization (TSO)
- Helpline personnel
- Design Center
- Provisioning project managers — Sales and Technical Resource Center (STRC)

Release History

This is the second issue of this book. *AT&T INTUITY AUDIX Digital Networking Administration*, 585-310-533, was a previous book on this topic for INTUITY AUDIX Release 1. *Lucent INTUITY Messaging Solutions Release 4 Digital Networking*, 585-310-567, was a previous book on this topic for INTUITY AUDIX Release 4.

How to Use This Book

This book is organized as follows:

- Chapter 1, "Introduction to Digital Networking"
This chapter introduces the basics of INTUITY AUDIX digital networking and describes digital networking features to provide a basic understanding of the features for users who are new to INTUITY AUDIX digital networking.
- Chapter 2, "Intuity AUDIX Digital Networking Description"
This chapter provides information on capacities, requirements, components, considerations for networking with other systems, messaging feature considerations, and considerations for LUCENT INTUITY Message Manager, fax, and e-mail.
- Chapter 3, "Types of Connections"
This chapter describes the types of digital networking connections and provides examples.
- Chapter 4, "Networking Administration"
This chapter provides procedures for all the networking administration and describes valid screen input for the networking screens.
- Chapter 5, "Remote User Administration"
This chapter provides procedures for administering remote users and describes valid screen input for the applicable screens.
- Chapter 6, "Monitoring Traffic and Using the Networking Reports"
This chapter describes the traffic and networking reports and includes procedures for formatting and running the reports.
- Chapter 7, "Troubleshooting"
This chapter provides procedures for troubleshooting your network.
- Appendix A, "Switch Administration"
This appendix provides switch administration procedures for Lucent Technologies switches.

- Appendix B, "Digital Network Planning"
This appendix includes networking worksheets and planning information for use when interacting with the design center.
- Appendix C, "Paradyne Comsphere Modem Settings for RS-232 Connections",
This appendix provides front panel settings for Comsphere modems.
- Abbreviations
This section lists abbreviations and acronyms used in Lucent INTUITY system documentation.
- Glossary
This section defines the terms and acronyms used in Lucent INTUITY system documentation.
- Index
An alphabetized list which provides a cross reference of specific terms used in the book and the page numbers on which they are mentioned.

Conventions Used in This Book

This section describes the conventions used in this book.

Terminology

- The words “subscriber” and “user” are interchangeable terms that describe a person administered on the Lucent INTUITY system. The word “user” is the preferred term in the text; however, “subscriber” appears on most of the screens and is the command word you must type at the command line, for example, **change subscriber “Jane Doe”**.
- The word “type” means to press the key or sequence of keys specified. For example, an instruction to type the letter “y” is shown as
Type **y** to continue.
- The word “enter” means to type a value and then press `ENTER`. For example, an instruction to type the letter “y” and press `ENTER` is shown as
Enter **y** to continue.
- The word “select” means to move the cursor to the desired menu item and then press `ENTER`. For example, an instruction to move the cursor to the start test option on the Network Loop-Around Test screen and then press `ENTER` is shown as
Select Start Test.
- The system displays *windows*, *screens*, and *menus*.
 - *Windows* show system information (Figure 1 on page -xv).
 - *Screens* request user input. This input is either a value or other specific information you must type into a field (Figure 2 on page -xv) or a command you must enter from the `enter` command: prompt (Figure 2 on page -xv).
 - *Menus* (Figure 3 on page -xvi) present options from which you can choose to view another menu, screen, or window.

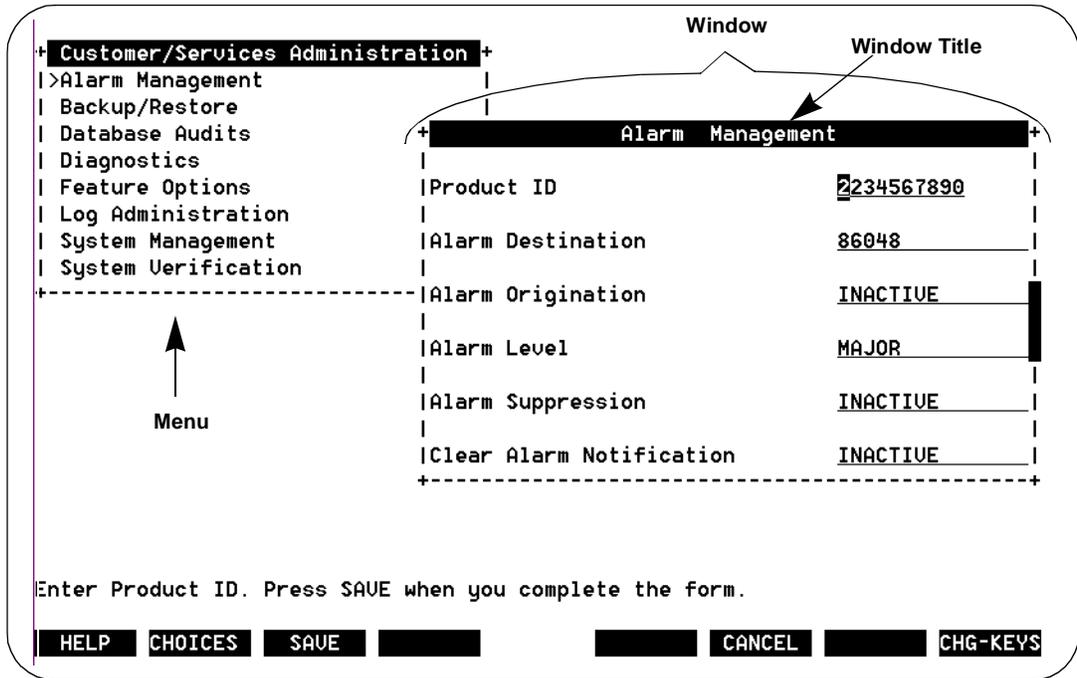


Figure 1. Example of a Lucent INTUITY Window

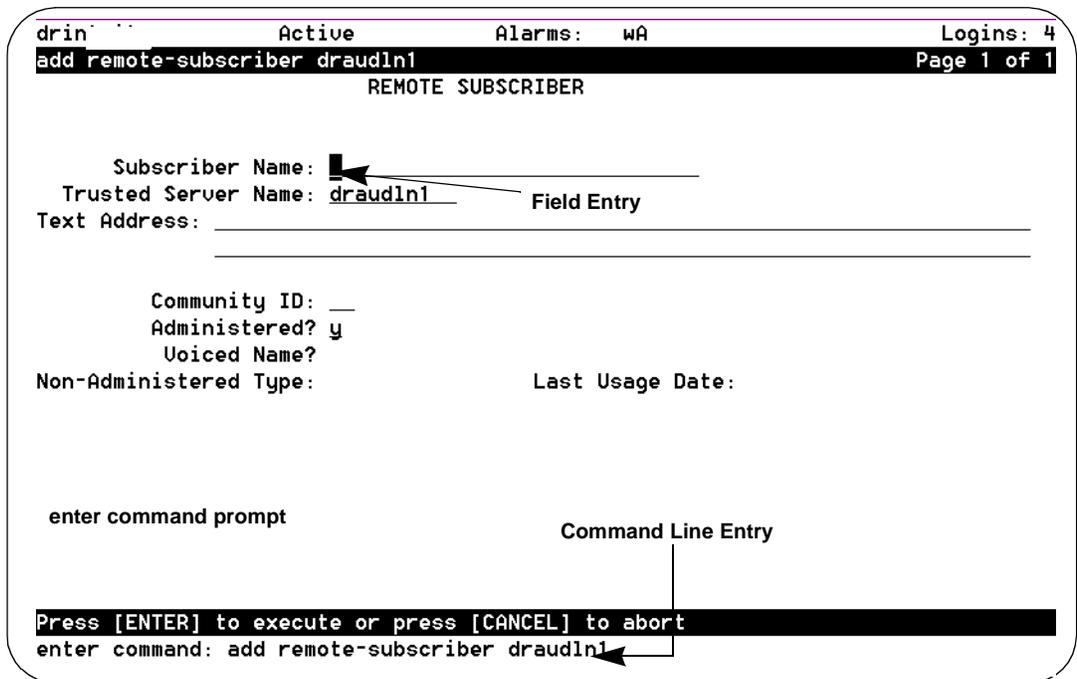


Figure 2. Example of an AUDIX Administration Screen with an Entry in a Field and in the Command Line



Figure 3. Example of a Lucent INTUITY Menu

Keyboard and Telephone Keypad Representations

- Keys that you press on your *terminal or PC* are represented as rounded boxes. For example, an instruction to press the enter key is shown as
Press **ENTER**.
- Two keys that you press at the same time on your *terminal or PC keyboard* (that is, you press and hold down the first key and then press the second key) are represented as a series inside a rounded box. For example, an instruction to press and hold **ALT** while typing the letter “d” is shown as
Press **ALT-D**.
- A combination keystroke is a series of keystrokes that combines the two key function described above plus a third key, that is, you press and hold down the first key, then press the second key, then release those keys and press a third key. A combination keystroke is represented as an equation. For example, an instruction to press and hold **ALT** while typing the letter “d” and then typing the number “1” is shown as
Press **ALT-D + 1**.
- Function keys on your terminal, PC, or system screens, also known as *soft keys*, are represented as square boxes followed by the function or value of that key enclosed in parentheses. For example, an instruction to press function key 3 is shown as
Press **F3** (Save).
- Keys that you press on your *telephone keypad* are represented as square boxes. For example, an instruction to press the first key on your telephone keypad is shown as
Press **1** to record a message.

Screen Displays

- Values, system messages, field names, and prompts that appear on the screen are shown in typewriter-style `constant-width` type, as shown in the following examples:

Example 1:

Enter the number of ports to be dedicated to outbound traffic in the `Maximum Simultaneous Ports:` field.

Example 2:

The system displays the message `Alarm Form Update was successful.`

- The sequence of menu options that you must select to display a specific screen or submenu is shown as follows:

Start at the Lucent INTUITY Main Menu and select:

```
> Customer/Services Administration
> Alarm Management
```

In this example, you would access the Lucent INTUITY Main Menu and select the `Customer/Service Administration` menu. From the `Customer/Service Administration` menu, you would then select the `Alarm Management` screen.

- Screens shown in this book are examples only. The screens you see on your machine will be similar, but not exactly the same.

Data Entry Conventions

- Commands and text you type in or enter appear in **bold type**, as in the following examples:

Example 1:

Enter **change-switch-time-zone** at the `enter command:` prompt.

Example 2:

Type **high** or **low** in the `Speed:` field.

- Command variables are shown in *bold italic* type when they are part of what you must type in and *regular italic* type when they are not, for example:

Enter **ch ma** *machine_name*, where *machine_name* is the name of the call delivery machine you just created.

Safety and Security Alert Labels

This book uses the following symbols to call your attention to potential problems that could cause personal injury, damage to equipment, loss of data, service interruptions, or breaches of toll fraud security:



CAUTION:

Indicates the presence of a hazard that if not avoided can or will cause minor personal injury or property damage, including loss of data.



WARNING:

Indicates the presence of a hazard that if not avoided can cause death or severe personal injury.



DANGER:

Indicates the presence of a hazard that if not avoided will cause death or severe personal injury.



SECURITY ALERT:

Indicates the presence of a toll fraud security hazard. Toll fraud is the unauthorized use of a telecommunications system by an unauthorized party.

Trademarks and Service Marks

The following trademarked products are mentioned in books in the Lucent Intuity document set:

- AT™ is a trademark of Hayes Microcomputer Products, Inc.
- AUDIX® is a registered trademark of Lucent Technologies™.
- cc:Mail® is a registered trademark of cc:Mail, a subsidiary of Lotus Development Corporation.
- COMSPHERE® is a registered trademark of Lucent Technologies™ Paradyne Corp.
- CONVERSANT® Voice Information System is a registered trademark of Lucent Technologies™.
- DEFINITY® is a registered trademark of Lucent Technologies™.
- DMS-100™ is a trademark of Northern Telecom Limited.
- Dterm™ is a trademark of NEC Telephones, Inc.
- Equinox™ is a trademark of Equinox Systems, Inc.
- 5ESS® is a registered trademark of Lucent Technologies™.
- INTUITY™ is a trademark of Lucent Technologies™.
- Lotus Notes® is a registered trademark of Lotus Development Corporation.
- MEGAPORT™ is a trademark of Equinox Systems, Inc.
- MEGAPLEX™ is a trademark of Equinox Systems, Inc.
- Meridian™ is a trademark of Northern Telecom Limited.
- MERLIN LEGEND® is a registered trademark of Lucent Technologies™.
- Microcom Networking Protocol® is a registered trademark of Microcom, Inc.
- Microsoft® is a registered trademark of Microsoft Corporation.
- MS® is a registered trademark of Microsoft Corporation.
- MS-DOS® is a registered trademark of Microsoft Corporation.
- Mitel™ is a trademark of Mitel Corporation.
- NEAX™ is a trademark of NEC Telephone, Inc.
- NEC® is a registered trademark of NEC Telephone, Inc.
- Netware® is a registered trademark of Novell, Inc.
- Netware® Loadable Module™ is a registered trademark of Novell, Inc.
- Northern Telecom® is a registered trademark of Northern Telecom Limited.

- Novell® is a registered trademark of Novell, Inc.
- Paradyne® is a registered trademark of Lucent Technologies™.
- Phillips® is a registered trademark of Phillips Screw Company.
- Rolm® is a registered trademark of International Business Machines.
- SL-1™ is a trademark of Northern Telecom Limited.
- softFAX® is a registered trademark of VOXEM, Inc.
- SUPERSET™ is a trademark of Mitel Corporation.
- SX-100™ is a trademark of Mitel Corporation.
- SX-200™ is a trademark of Mitel Corporation.
- SX-2000™ is a trademark of Mitel Corporation.
- TMI™ is a trademark of Texas Micro Systems, Inc.
- UNIX® is a registered trademark of UNIX Systems Laboratories, Inc.
- Voice Bridge® is a registered trademark of Voice Technologies Group, Inc.
- VOXEM® is a registered trademark of VOXEM, Inc.
- VT100™ is a trademark of Digital Equipment Corporation.
- Windows™ is a trademark of Microsoft Corporation.

Related Resources

This section describes additional documentation and training available for you to learn more about installation of the Lucent INTUITY product.

Documentation

 **NOTE:**

The *Lucent INTUITY™ Messaging Solutions Release 4 System Description, 585-310-235*, contains a detailed description of all books included in the Release 4 and Release 3 Lucent INTUITY documentation library. Always refer to the appropriate book for specific information on planning, installing, administering, or maintaining a Lucent INTUITY system.

It is suggested that you obtain and use the following book for information on security and toll fraud issues:

- *BCS Product Security Handbook, 555-025-600*

See the inside front cover for information on how to order Lucent INTUITY documentation.

Training

For more information on Lucent INTUITY training, call the BCS Education and Training Center at one of the following numbers:

- Organizations within Lucent Technologies: (904) 636-3261
- Lucent Technologies customers and all others: (800) 255-8988

How to Comment on This Book

We are always interested in your suggestions for improving this book. Please complete and return the reader comment card that is located behind the title page.

If the reader comment card has been removed, send your comments to:

Lucent Technologies
Product Documentation Development Department
Room 22-2H15
11900 North Pecos Street
Denver, Colorado 80234

Alternatively, you can fax your comments to:

Lucent INTUITY Writing Team
(303) 538-1741

Please be sure to mention the name and order number of this book:

Lucent INTUITY™ Messaging Solutions Digital Networking, 585-310-567

Overview

This chapter provides an introduction to the basics of INTUITY AUDIX digital networking for INTUITY AUDIX Release 3 and Release 4 and describes digital networking features.

This chapter is organized as follows:

- What Is Digital and AMIS Analog Networking
- How Digital Networking Enhances AUDIX Messaging
- Networking Capacities and Capabilities
- Networking Terminology
- Example of a Basic Network
- Digital Networking Feature Overview

Purpose

This chapter provides a basic understanding of the features for users who are new to INTUITY AUDIX digital networking.

What Is Networking?

Networking is the transfer of voice, fax, and e-mail messages between users located on different systems. For the INTUITY AUDIX system, there are 2 types of networking:

- Digital networking provides INTUITY AUDIX Release 4 users with the ability to exchange:
 - Voice, fax, and electronic mail (e-mail) messages with users on other INTUITY AUDIX Release 4 and later systems
 - Voice and fax messages with users on INTUITY AUDIX Release 3 and later systems
 - Voice messages with users on INTUITY AUDIX systems, DEFINITY AUDIX R3.2 systems, and AUDIX R1V3 or later systems (AUDIX systems).
- AUDIO Message Interchange Specification (AMIS) analog networking provides INTUITY AUDIX users with the ability to exchange voice messages with users of other systems with AMIS, such as non-Lucent Technologies systems that use the AMIS standard.

Digital Networking Operation

Digital networking is the transfer of a digital file from a user on one system to a user on a different INTUITY AUDIX, DEFINITY AUDIX, or AUDIX R1 system. A voice message is a computer file that is digitally recorded and stored. Fax and e-mail messages also are computer files that are digitally stored. Digital networking allows a message to be transferred across communications lines. Just as 2 networked computer users can send files to each other, 2 users on different systems can send messages to each other in the following manner:

- A local user records a voice message, or creates a fax or e-mail message, and addresses it to a remote user using a location prefix and the user's extension.
- Digital networking uses a dial string to place a call to the remote user's machine.
- The remote machine answers the call and the local machine sends the message.
- The remote user listens to the message and hears a message header that includes the originating machine name, the originating user name, the time sent, and the length of the message.
- The user who sent the message receives notification that the message was received and opened.
- The remote user can use the AUDIX Voice Messaging features to return a message to the originating user, store the message, forward the message, etc.

Remote machine information is administered on the local machine. For user information, INTUITY AUDIX digital networking provides the ability to share databases with remote INTUITY AUDIX, DEFINITY AUDIX, and AUDIX R1 machines. The INTUITY AUDIX system allows several types of physical connections between local and remote machines, depending on the type of switch, local area network accessibility, and the requirements you have.

AMIS Analog Networking Operation

AMIS analog networking plays messages as voice files over analog lines to communicate with other AMIS systems including other INTUITY AUDIX systems, AUDIX R1 systems, DEFINITY AUDIX systems, and non-Lucent Technologies AMIS systems.

AMIS operates in the following manner:

- A local user records a message and addresses the message to a remote AMIS user.
- AMIS dials the number of the user's machine to which the message was addressed.
- The AMIS system on the remote machine answers the call, exchanges protocols with the local machine, and allows the local AMIS machine to play, *not* transfer, the message.
- The remote AMIS machine records the message as it is played into the mailbox of the user to whom the message was addressed.
- The remote user can listen to the message.

For more information on AMIS analog networking, see *AMIS Analog Networking, 585-300-512*. The document contains a complete description of the feature, including planning and administration procedures.

How Digital Networking Enhances AUDIX Messaging

Digital networking enhances AUDIX Messaging in many ways:

- If you have business offices in more than one location, whether in the same building or in different cities, networking allows you to exchange messages with all locations.
- If you exceed the capacity of one INTUITY AUDIX system at your location, you can network multiple machines together so users can exchange messages as if they were on the same machine.
- The following message-exchange features can be used for messages exchanged between remote users:
 - The ability to address a message by entering a user's name. This is called name addressing.
 - The ability to play a recorded name, if a name is recorded for the remote user, when a user addresses a message to the remote user or when the user receives a message from the remote user.
 - The ability to forward messages to one user or a group of users, respond to messages, and create group mailing lists.

 **NOTE:**

You cannot share mailing lists across the network.

- The quality of the voice message received is the same as when it was recorded, no matter how many times you forward the message. This is true for voice messages exchanged between INTUITY AUDIX systems and between INTUITY AUDIX and DEFINITY AUDIX systems. Voice messages exchanged between INTUITY AUDIX and AUDIX R1 systems use the AUDIX R1 voice messaging encoding which is not as high of quality as the INTUITY AUDIX voice messaging encoding.
- Local and remote user databases are updated automatically with the remote update feature.
- If your business operates in different time zones, you can send or receive messages any time of the day or night.
- All a digital networking user needs to know to exchange messages with remote users is the machine prefix and remote user extension or, by using the name addressing feature, just the user's name.

Users can exchange fax messages with INTUITY AUDIX Release 3 and later systems that are enabled for fax.

Users can exchange e-mail messages with INTUITY AUDIX Release 4 and later systems if both systems are set up for e-mail.

Networking Capacities and Capabilities

Networking provides the following capacities and capabilities.

Maximum Capacities

The INTUITY AUDIX system can network to a maximum of 485 INTUITY AUDIX, DEFINITY AUDIX, or AUDIX R1 remote machines (AMIS and digital) with a maximum of 500,000 local and remote users.

⇒ NOTE:

The DEFINITY AUDIX R3.2 system can network to a maximum of 100 DEFINITY AUDIX R3.2, INTUITY AUDIX, or AUDIX R1 remote machines (AMIS and digital) with a maximum of 100,000 local and remote users. AUDIX R1 systems can network with up to 100 remote systems (AMIS and digital) with up to 28,000 remote users.

Security

Passwords and unique identifiers for each machine provide security to the network. Passwords must adhere to the following guidelines:

- Use 6–11 alphanumeric characters. The password must include at least 1 numeric and 2 alpha characters.
- The system *will not allow* the password to be the a sequential alpha or numeric string, for example, 123456, or a repetitive string, such as bbbbbb.

Network Connection Types

Digital networking provides different types of network connections using the following protocols.

- Lucent Technologies *Digital Communication Protocol* (DCP) used only when both switches are DCP switches. These switches are System 75, System 85, or DEFINITY Communications System Generic 1, 2, or 3. Data rates can be 56 Kbps or 64 Kbps.
- Electronic Industries Association (EIA) *RS-232* protocol. Data rates can be 9.6 Kbps for standard connections over the public network or 19.2 Kbps for special services such as Software Defined Data Network (SDDN).
- Transmission Control Protocol/internet Protocol (TCP/IP) for connecting INTUITY AUDIX Release 3 (IP42 or later) or Release 4 systems over a Local Area Network (LAN) with much higher throughput than DCP or RS-232. TCP/IP also can be used to directly connect 2 machines.

Networking Terminology

This section provides a definition of some of the terms used with INTUITY AUDIX digital networking.

Machine Types

Machine is a term used for AUDIX systems or other AMIS voice mail systems. For INTUITY AUDIX digital networking, there are 2 types of machines:

- Local
- Remote

Local Machine

A local machine is the machine on which you are administered as a local user.

Remote Machine

A remote machine is any machine connected through the network with which your local machine exchanges voice messages. Remote machines are usually in different geographical locations. However, if you have a large user population at a single site, you may require more than one AUDIX machine at that site.

User Types

Digital networking has 2 types of users

- Local users
- Remote users – remote users are further sub-divided into:
 - Administered remote users
 - Non-administered remote users

Local Users

Local users are the INTUITY AUDIX users with voice mailboxes on the local machine. Digital networking does not affect local user administration. To other machines in the network, though, the local users on your machine are remote users. Coordinate all user administration processes with the network administrators for the remote machines.

Remote users

Administered and non-administered remote users are the users with voice mailboxes on remote machines.

Administered Remote Users

An administered remote user is any remote user that has an administered remote user profile on the local machine (maintained in the local machine's user database). The profile contains the following information:

- Extension
- Name
- Machine name
- A recording of the remote user's name (if recorded)

Since the local machine knows the remote user's name, the local machine supports name addressing for administered remote users. When a local user addresses a message to an administered remote user, the local user hears the name of the remote user, if recorded. If the name has not been recorded, the local user hears the remote user's machine name instead, if the machine name has been recorded. If neither name is recorded, the local user hears the extension played by the INTUITY AUDIX system. "Example of a Basic Network" on page 1-10 shows you how administered remote users work with the network.

Non-Administered Remote Users

A non-administered remote user is any user on remote machines in the network for whom the local machine does not have a remote user profile. There are 3 types of non-administered remote users.

- No-profile non-administered remote user

A non-administered remote user who has never exchanged messages with the local machine. Profile refers to a collection of remote user information, such as the machine name, user extension, prefix, and address, maintained in the local machine's user database. For a no-profile remote user, the local machine database does not contain any information.

- Non-verified non-administered remote user

A remote non-administered user who does not have a profile on the local machine, but has had a message addressed to him or her. The local INTUITY AUDIX system checks the database to determine if the address for the non-verified user is valid on any administered remote machines. If the local machine determines that the address is valid, the system attempts to send the message. A user remains a non-verified remote user until the message is sent or returned. When the message is received by the remote machine and delivered to the user, the local system creates a verified non-administered user profile.

- Verified non-administered remote user

A non-administered remote user that has exchanged messages with the local machine. After the local machine successfully sends or receives messages, the system creates a profile for the non-administered user. The profile contains the remote user's extension and machine name, but does not contain a recording of the remote user's name. Name addressing and voice name-back does not work with this type of remote user.

"Example of a Basic Network" on page 1-10 shows you how the 3 types of non-administered remote users work with the network.

Digital Networking Strategies

Digital networking provides different types of networking strategies between INTUITY AUDIX systems, DEFINITY AUDIX systems, and AUDIX R1 systems as described below.

Local networking	A local network consists of more than one INTUITY AUDIX, DEFINITY AUDIX, or AUDIX R1 system cabled together and attached to the same switch to appear as one large AUDIX system for most features. Local networking is also referred to as a dedicated connection or <i>stacking</i> .
Remote networking	A remote network consists of more than one INTUITY AUDIX, DEFINITY AUDIX, or AUDIX R1 system usually located in different geographic locations. Remote networking can be: <ul style="list-style-type: none">■ Through a switch — a connection made from one endpoint to another through switch port cards■ Over a local area network
Mixed networking	A mixed network consists of a combination of local and remote networking with more than one INTUITY AUDIX, DEFINITY AUDIX, or AUDIX R1 system.
Central office networking	A central office network consists of an AUDIX system connected to a 5ESS switch located in a central office as part of the digital network.

AUDIX digital networking with a DCS network

AUDIX digital networking with a DCS network consists of more than one INTUITY AUDIX, DEFINITY AUDIX, or AUDIX R1 system connected to one or more switches in a Lucent Technologies switch Distributed Communications System (DCS) network. The networked multiple AUDIX machines give the appearance of one large (local) AUDIX system. The DCS network can have multiple AUDIX machines on a single switch that serves the network or multiple AUDIX machines on multiple switches. All AUDIX machines integrated with different switches must use the same Uniform Dial Plan (UDP).

 **NOTE:**

INTUITY AUDIX digital networking and switch DCS networking are 2 different features and may be implemented separately. An INTUITY AUDIX system that serves other switches in a DCS network can also be networked with other AUDIX systems that are not part of a DCS network. See *Lucent Intuity Integration with System 75 and DEFINITY Communications System Generic 1 and Generic 3, 585-310-214*, and *Lucent Intuity Integration with System 85 and DEFINITY Communications System Generic 2, 585-310-215*, for DCS administration for INTUITY AUDIX systems.

Example of a Basic Network

The best way to understand digital networking is to look at an example. Figure 1-1 shows a basic network which contains 3 machines, one local and two remote. In the example, the local INTUITY AUDIX system is located in Denver, Colorado, and the remote systems are located in Columbus, Ohio, (AUDIX R1) and Lincroft, New Jersey, (DEFINITY AUDIX).

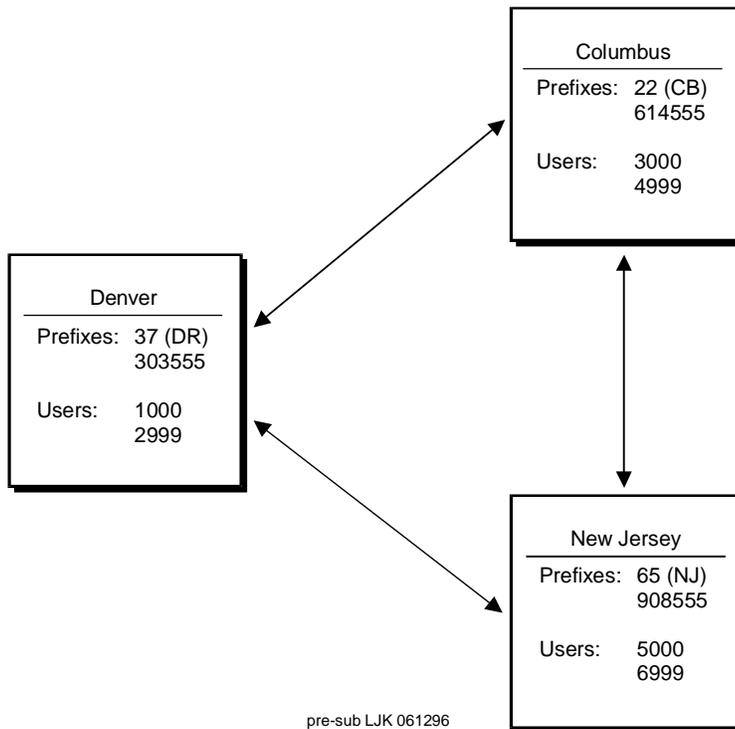


Figure 1-1. Three-Machine Basic Network Example

Before the machines can exchange messages, each machine must contain some information about the other machine. The following list describes the basic information required by each machine.

Machine Name Each machine has a unique name. The machine name is used when initiating communications and increases the security of the system.

Machine Type AUDIX, Lucent INTUITY 1.0 or 2.0, Lucent INTUITY 3.0, Lucent INTUITY 4.0 or later, or DEFINITY AUDIX 3.2

Connection Type DCP, RS-232, or TCP/IP

Dial String The number used to initiate calls from the local machine to the remote machine.

Prefixes The code used to identify the remote machine. The prefix is part of the overall addressing scheme and is entered by local users when they address messages to remote users. Users first enter the prefix, then the remote user extension. You do not have to use prefixes but they may be required if the ranges overlap.

For example, for a machine named "Denver," the prefix could be "DR." To address mail to a remote user on the Denver machine, local users enter "DR" (touch tones 3 and 7) on the touch-tone keypad and then the remote user's extension. For extension 2600 in Denver, the local user enters .

Each remote machine can have a maximum of 10 prefixes. The ability to use multiple prefixes is an advantage, if, for example, you want to be able to address messages by using a familiar prefix, such as an area code or exchange. In the Denver example, you could set up the area code 303, and the exchange 555, as prefixes. By setting up multiple prefixes, local users can use complete telephone numbers to address messages.

Address Range The prefix, the starting (or lowest) extension, and the ending (or highest) extension assigned to users on the remote machine. When a local user records a message and enters the address, the system compares the address with the database address ranges to determine which remote machine the user resides on. A maximum of 16 machines can share an address range. An address range does not always uniquely identify a machine.

Send Times The range of times when the local machine attempts to deliver messages to remote machines.

Extension Length The extension length of the remote machine.

Table 1-1 contains the information entered for each of the 3 machines in the example.

Table 1-1. Example Information for Three-Machine Network

	Machine Name		
	DR	CB	NJ
Machine Type	DEFINITY AUDIX	AUDIX R1	Lucent INTUITY
Machine Location	Denver	Columbus	Lincroft
Extension Length	4	4	4
Prefixes	DR (37)	CB (22)	NJ (65)
	614555	303555	908555
Address Ranges	1000—2999	3000—4999	5000—6999
Machine Dial String	13035551000	16145553000	19085555000
Message Transmission Schedule	24hr/day every 5 minutes	24hr/day every 5 minutes	24hr/day every 5 minutes
Number of Users	1500	4000	6000

Sending a Message to an Administered Remote User

Once the network administration is finished, users can exchange messages. The following example uses a local user at extension 2000 on machine DR who wants to send a message to the administered remote user at extension 6000 in New Jersey. All the local user needs to do is enter the remote user's address. The system performs the processes in a matter of seconds. These processes are transparent to the local user.

1. The local user records a message and addresses the message to an administered remote user at extension 656000 (NJ6000).
2. The local machine checks the database to see if 656000 is a local user and returns an answer of "no."
3. The local machine checks the database to see if 656000 falls within a valid address range on any of the administered remote machines. The local machine finds that the address is valid on a machine named NJ.
4. Using the address and the machine information, the local machine checks the remote user database on the local machine for any information on a user at address 656000. The local machine discovers information on an administered remote user for the address. If the name of the remote user is recorded, the local machine also speaks the name.
5. The local machine schedules and delivers the message during the next valid send time.

Sending a Message to a Non-Administered Remote User

The system easily handles the process of sending messages to no-profile, non-administered remote users when an address falls within a range that corresponds to one or more machines. The following example uses extension 223500 as a no-profile, non-administered remote user.

1. The local user in Denver records a message and addresses the message to a remote user at 223500 (CB3500). The local machine has never exchanged messages with a remote user at 223500. At this point, the remote user is considered a no-profile, non-administered remote user.
2. The local machine checks the database to see if 223500 is a local user and returns an answer of "no."
3. The local machine checks the database to see if 223500 falls within a valid address range. The address is valid and the local machine uses the database to determine which machines correspond to that address. One machine, CB, corresponds to the address. At this point, the remote user is considered a non-verified, non-administered remote user. A profile has been created in the database for a non-verified, non-administered remote user.
4. Using the address and the information obtained in the previous step, the local machine checks the remote user database on the local machine for any information on a user at address 223500. The machine does not find any information.
5. The local machine attempts to deliver the message to machine CB during the next valid send time, using the address information.
6. Machine CB accepts and delivers the message to the user at extension 3500.
7. After successfully sending the message, the local machine creates a record for a verified, non-administered remote user containing that remote user's extension and machine name. At this point, the remote user is considered a verified, non-administered remote user.

The local machine now knows the verified, non-administered remote user exists and knows the user's machine name and extension. The next time a message is addressed to the remote user at extension 3500 on machine CB, the local machine sends the message directly to machine CB because the local machine has a record of a successful delivery for the remote user.

Digital Networking Feature Overview

This section describes the following digital networking features:

- Remote Updates
- Network Turnaround
- Scheduling
- Retry Strategies
- Administration Log

Remote Updates

The INTUITY AUDIX system offers an automatic method of administering remote users called *remote updates*. Remote updates allow the local INTUITY AUDIX system to exchange user information with each INTUITY AUDIX, DEFINITY AUDIX, and AUDIX R1V5 or later remote system administered on the local system.

During a complete update, all user information is exchanged between systems. For example, when a new system is added to the network, the administrator at each existing system requests a complete update from the new system to add the new users to each local machine. Complete updates may involve many thousands of users and require heavy system resources. Additionally, the local INTUITY AUDIX system can automatically schedule a non-prime-time complete update from a remote system if the local system finds discrepancies between databases.

When administered to do so, partial updates occur on a regular basis, such as weekly or nightly, to add or change information for users. A partial update would occur, for example, when a new user is added to a remote or local machine. If all machines in the network are administered to allow partial updates, any time a user is added, deleted, or updated on a machine, that machine notifies each machine in the network of the change.

See Chapter 5, "Remote User Administration" for complete information on the Remote Updates feature.

Network Turnaround

When the network turnaround feature is turned on, one system can call another and exchange messages, send updated user information, and request updated user information. When the system that originated the call finishes, network turnaround allows the called system to perform the same actions using the same connection. The feature reduces toll charges and increases the efficiency of the system.

⇒ NOTE:

All toll charges are accrued by the system that originated the call.

Scheduling

The INTUITY AUDIX system delivers messages to a remote system on a schedule set up on the local system for each remote system. The schedule includes daily start- and end-times between which the system transmits messages to the remote system and the interval for transmitting messages. The minimum interval is every 5 minutes.

Retry Strategies

If the connection to the remote system fails or a processing request fails, the system drops the call and attempts the connection again (retries). The retry strategies are based on system default values and administered values.

Number of Retries

The number of times the system retries to make the connection depends on the following:

- Type of request
- Reason for the failure
- Rescheduling increments for unsuccessful message delivery (set on the System Parameters Features screen available from AUDIX Administration)

Test Machine

If the request is for a test, the local INTUITY AUDIX system tries only once to make the connection.

Reason for Failure

The local INTUITY AUDIX system retries 3 more times with a one-minute interval between each call if the request is not for a test and the reason for the failure is one of the following:

- Receive busy tone
- Receive intercept tone (while dialing the port)
- Receive reorder tone
- Dialing time-out
- Receive disconnect from the far end while dialing or processing

If the fourth attempt (or the first if this is a test call) still fails, then an INTUITY AUDIX audit (which takes place within at most the next 8 minutes) reschedules all requests to the remote system for subsequent transmission based on the transmission schedule for that system (see Figure 4-20).

Retries by Processing Requests

There are 3 types of processing requests:

Administration Request

For an administration request (add, change, or delete for the user database), the local INTUITY AUDIX system retries over and over until the remote system gets the update.

Message Request

When sending messages to the remote system, the rescheduling count for all the messages being sent to the remote system is incremented by 1 after 1 day of retries (at most the rescheduling count can be 10, then the local INTUITY AUDIX system will retry for 10 days). When the maximum rescheduling count is reached, all the messages become undeliverable.

Status Request

The INTUITY AUDIX system requests a status that the machines are communicating from the remote system and retries over and over again until it receives a status.

Administration Log

Problems that require the system administrator's attention appear in the administration log. These administration errors (such as notification of full mailboxes and nondeliverable messages) should be corrected to optimize networking operation.

The system displays an alarm message (`alarms: A`) on the INTUITY AUDIX administration screen status line when it logs administration errors. Enter the **display administration log** command at the `enter command:` prompt to display administration errors. The INTUITY AUDIX system administrator should check the administration log each morning. You can correct user problems identified on the administration log using regular administrative procedures (such as notifying a user of an undeliverable message).

The administration alarm on the status line is cleared when you access the administration log.

For more information on the Administration Log, see the administration manual for your MAP platform and specific release.

INTUITY AUDIX Digital Networking Description

2

Overview

This chapter describes INTUITY AUDIX Digital Networking for Release 3 and Release 4.

This chapter is organized as follows:

- Overview of connection types
- Digital networking capacities
- Digital networking requirements
- Digital networking components
- Connectivity
- Switch requirements
- Considerations for networking with other AUDIX systems
- Considerations for voice, Lucent INTUITY Message Manager, fax, and e-mail

Purpose

This chapter provides a technical description of INTUITY AUDIX digital networking.

Introduction

INTUITY AUDIX Digital Networking allows local INTUITY AUDIX users to exchange messages with other INTUITY AUDIX systems, DEFINITY AUDIX systems, and AUDIX R1 systems. These systems can be located on the same site or spread out over several locations in the same or different cities and countries.

Release 3 users can exchange messages containing voice and fax components; Release 4 users can exchange messages containing voice, fax, attached binary (software) files, and text (originating from Lucent INTUITY Message Manager or a supported e-mail system).

Message Components

An INTUITY AUDIX Release 3 or Release 4 message is not limited to a single *media type*. The Release 3 system allows voice and fax media types and Release 4 system allows four media types to be components of a message, specifically:

- Voice
- Fax
- Text (produced using Lucent INTUITY Message Manager or a supported e-mail application)
- Attached binary files (a software file, such as a word processing or spreadsheet file)

Each media type is treated by the system as an individual component of a multimedia message. A message may contain a maximum of one component of each type. For Release 3, the maximum number of components is two, and for Release 4 the maximum number of components is four.

Local INTUITY AUDIX voice messaging users can exchange:

- Voice messages with other INTUITY AUDIX, DEFINITY AUDIX R3.2, or AUDIX R1V3 and later systems
- Voice and fax messages with other INTUITY AUDIX Release 3 and later systems
- Voice, fax, attached files, and e-mail text messages with other INTUITY AUDIX Release 4 and later systems, and with e-mail users running supported e-mail applications
- Voice, fax, attached files, e-mail, and Message Manager text messages with other INTUITY AUDIX Release 4 and later systems, if the sender and recipient both have INTUITY Message Manager Release 4.0 or higher

Messages are transmitted in a digital file format, similar to a data file transfer between two computer systems. Voice quality is maintained with digital transmission.

Maximum Capacities

Each INTUITY AUDIX system may connect with up to 485 other AUDIX systems (combined digital networking remote machines and AMIS remote machines). Each DEFINITY AUDIX and AUDIX R1 system may connect with up to 100 other voice mail systems (combined digital networking remote machines and AMIS remote machines). The INTUITY AUDIX system supports a maximum of 500,000 local users and administered and non-administered remote users. The total number of networked systems and remote users depends on several factors, such as:

- The amount of available storage for remote user data
- The number of networking ports
- The speed of data transport between systems

Types of Networking Connections

INTUITY AUDIX digital networking provides different types of network connections using the Lucent Technologies Digital Communication Protocol (DCP), the Electronic Industries Association (EIA) RS-232 protocol, or the Transmission Control Protocol/Internet Protocol (TCP/IP). The following list briefly describes the different types of network connections.

DCP Mode 1	A proprietary Digital Communications Protocol (DCP) connection using a data rate of 56 Kbps. To use DCP mode 1, the INTUITY AUDIX system and the remote machine both must connect to a digital switch with DCP capabilities (System 75, System 85, or DEFINITY Communications System Generic 1, 2, or 3).
DCP Mode 3	A DCP connection using a data rate of 64 Kbps. To use DCP mode 3, the INTUITY AUDIX system and the remote machine both must connect to a digital switch with DCP capabilities (System 75, System 85, or DEFINITY Communications System Generic 1, 2, or 3).
RS-232	An asynchronous RS-232 connection using data rates of 9.6 Kbps or 19.2 Kbps. Use RS-232 connections when DCP switch facilities or a LAN are not available.

TCP/IP A connection over a local area network using TCP/IP. TCP/IP is recommended when a local area network (LAN)/wide area network (WAN) is available because there is:

- No need for switch lines and trunks
- Reduced communications costs (no telephone network involved)
- Higher throughput

Use TCP/IP for directly connecting machines.

 **NOTE:**

The 19.2 Kbps data rate only operates on networks that have services such as Software Defined Data Network (SDDN). If you do not have these services and need to communicate through the public network, asynchronous networking must operate at 9.6 Kbps. If 9.6 Kbps does not provide the type of service you want for voice messaging, you may be able to use one of the other types of data connections.

The type of data connection you use depends on the facilities at your site and on how you plan to connect with remote sites. You do not have to use the same type of data connection for all networking channels. For example, you could use channels 1 and 2 for DCP connections, channels 3 and 4 for RS-232 connections to a remote machine that does not have a digital switch with DCP capabilities, and channels 5, 6, 7, and 8 as TCP/IP connections to a local area network.

Digital Networking Port Capacities

Table 2-1 shows the Release 4 digital networking port capacities for the Lucent INTUITY Multi-Application Platforms (MAPs). For digital networking port capacities for Release 3 systems, refer to *Lucent INTUITY System Description*, 585-310-221.

Table 2-1. Maximum Digital Networking Port Capacities

	MAP /40s ¹		MAP /40		MAP /100	
	DCP and/or RS-232	TCP/IP	DCP and/or RS-232	TCP/IP	DCP and/or RS-232	TCP/IP
Maximum Ports without TCP/IP	4 ²	0	8 ³	0	12	0
Maximum Ports with TCP/IP	4 ³	4	8 ⁴	4	8 ⁴	4

1. Release 4 and later
2. 4 ports if the switch has secondary channel capability, 2 ports if it does not
3. 8 ports if the switch has secondary channel capability, 4 ports if it does not
4. 8 DCP and/or RS-232 ports if there also are TCP/IP ports

The Lucent INTUITY system supports up to 12 networking ports with the MAP /100 and allows combinations of DCP and RS-232 in two-port increments through the AUDIX Communications Controller for Lucent INTUITY (ACCX) card. The LAN card supports four simultaneous TCP/IP ports.

Each ACCX card supports data ports in one of the following combinations:

- Two DCP lines. Each DCP line provides one or two ports (for a total of either two or four ports). Depending on the version of the switch you have, you may be able to use only one of the two I-channels of each DCP line as shown in the following list:
 - System 75 R1V3, DEFINITY G1 R1V4, and DEFINITY G3i, G3s, or G3vs Version 1 support only one I-channel per DCP line.

- DEFINITY G3r Version 1 and later and DEFINITY G3i, G3s, and G3vs Version 2 or later can use both of the I-channels (secondary channel feature).

⇒ NOTE:

You must purchase, install, and administer this option on the switch before performing INTUITY AUDIX system administration. Contact your sales representative for more information on the I-channel option for digital networking.

- Four RS-232 ports
- One DCP line (for a total of either one or two ports) and two RS-232 ports

You can create various arrangements of DCP and RS-232 ports on the ACCX cards. For example, if you have a MAP /40, you may need to configure four ports as DCP and four as RS-232. You also can set six ports to DCP and two to RS-232. The design center can determine the best configuration for your needs.

The Lucent INTUITY system supports only one LAN card with a maximum of four TCP/IP ports. These ports can be assigned as ports 1 through 4, 5 through 8, or 9 through 12. If a MAP /100 has a LAN card for TCP/IP digital networking, it can have only two ACCX cards (this is not true if the LAN card is used only for Lucent INTUITY Message Manager and/or trusted server).

⇒ NOTE:

There is only one LAN card per Lucent INTUITY system. Lucent INTUITY Message Manager and trusted server use separate LAN card channels but may impact TCP/IP digital networking throughput.

System Capacities with Digital Networking

Digital networking provides several options for customers depending on their needs and number of users. The INTUITY AUDIX system provides a maximum of 64 ports with 12 channels of digital networking. Table 2-2 on page 2-7 summarizes the Lucent INTUITY system capacities for Release 3 and Release 4 with and without digital networking.

The main difference in networking capacity between Release 3 and Release 4 is that the Release 4 platform uses the Pentium processor; a much faster processor than the 486 processor used on in Release 3 machines.

Table 2-2. Lucent INTUITY System Capacities

Component	Release 3 Platform		
	MAP/5	MAP /40	MAP /100
Maximum voice messaging ports	<ul style="list-style-type: none"> ■ 18 without networking ■ 12 with networking 	<ul style="list-style-type: none"> ■ 42 without networking ■ 30 with 8 network channels 	<ul style="list-style-type: none"> ■ 64 without networking ■ 64 with networking
Maximum networking ports	6	8	12
ACCX Card	1 (optional)	Up to 2 (optional)	Up to 3 (optional)
LAN Card	1 (optional)	1 (optional)	1 (optional)
Modems	With RS-232	With RS-232	With RS-232
Maximum number of remote machines	485	485	485
Maximum number of local and remote users	2400 local/0 remote <i>or</i> 500 local/26,0000	15,000 local/0 remote <i>or</i> 1000 local/ 200,000 remote	20,000 local/ 500,000 remote
Component	Release 4 Platform		
	MAP/40s	MAP /40	MAP /100
Maximum voice messaging ports	<ul style="list-style-type: none"> ■ 18 without networking ■ 18 with networking 	<ul style="list-style-type: none"> ■ 42 without networking ■ 30 with 8 networking channels ■ 36 with 4 networking channels 	<ul style="list-style-type: none"> ■ 64 without networking ■ 64 with networking
Maximum networking ports	8	12	12
ACCX Card	1 (optional)	Up to 2 (optional)	Up to 3 ¹ (optional)
LAN Card	1 (optional)	1 (optional)	1 (optional)
Modems	With RS-232	With RS-232	With RS-232
Maximum number of remote machines	485	485	485
Maximum number of local and remote users	15,800 local/0 remote <i>or</i> 1000 local/ 200,000 remote	15,800 local/0 remote <i>or</i> 1000 local/ 200,000 remote	20,000 local/ 500,000 remote

1. Up to 2 if there is also a LAN card for TCP/IP digital networking

Digital Networking Requirements

Digital networking requires the following components:

- At least one ACCX card (AYC22) for DCP and/or RS-232 connections including an ACCX breakout cable and an ACCX breakout box
- One LAN card for TCP/IP connections with a LAN connector
- A modem on each end of the connection for RS-232 connections (see “Modems” for a list of supported modems)
- Adequate storage to handle remote user information (3 seconds X number of remote users)

Digital Networking Components

This section describes each of the components required for digital networking. For information on the other system components, see the system description for your release of INTUITY AUDIX.

ACCX Card

The AUDIX Communications Controller for Lucent INTUITY (ACCX) card (Figure 2-1) provides the DCP and RS-232 networking connection between the switch and the INTUITY AUDIX system. Each ACCX card provides four networking channels.

Number of Cards Supported

Table 2-3 shows the number of ACCX cards supported by the Lucent INTUITY platforms. The number of ACCX cards required depends on expected messaging traffic and the INTUITY AUDIX networking configuration.

Table 2-3. ACCX Cards by Platform

Platform	Number of ACCX Cards
MAP /5 ¹	1 maximum
MAP /40s ²	1 maximum
MAP /40	2 maximum
MAP /100	3 maximum (2 if there is a LAN card used for TCP/IP digital networking) ³

-
1. Release 3
 2. Release 4 and later
 3. There can be 3 ACCX cards and 1 LAN card if the LAN card is used only for Lucent INTUITY Message Manager and/or trusted server.
-

Data Rates

The DCP ports operate in either Mode 1 (56 Kbps) or Mode 3 (64 Kbps). The RS-232 ports operate at 9.6 Kbps or 19.2 Kbps.

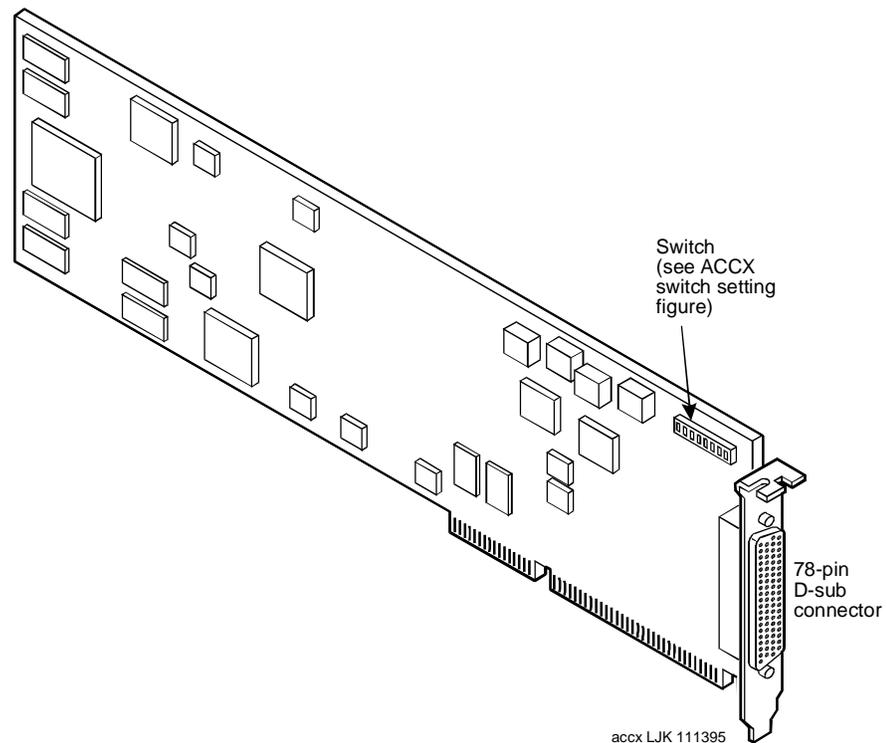


Figure 2-1. ACCX Networking Card

Required Slot Positions

The ACCX card can be placed in the following slots:

- MAP/5 — slot 3
- MAP/40s — slots 6 and 7
- MAP/40 — slots 6 and 7
- MAP/100 — slots 13 through 15

⇒ NOTE:

In the MAP/40 and the MAP/40s, the ACCX boards are placed after the IVC6 boards and the SSP boards and may be placed in a slot lower than 6 if space is available. The MAP/40s and SSP boards are only found in Release 4 and later.

Dip Switch Settings

The DIP switch settings on each ACCX card establish the memory address for the card. Figure 2-2 shows the dip switch settings for each ACCX card. If there is only one ACCX card, use the memory address setting for card number one. If there is a second or third card, use the address setting for that number card. If the cards are not optioned correctly, you will need to power down the machine, reset the options, and power up the machine.

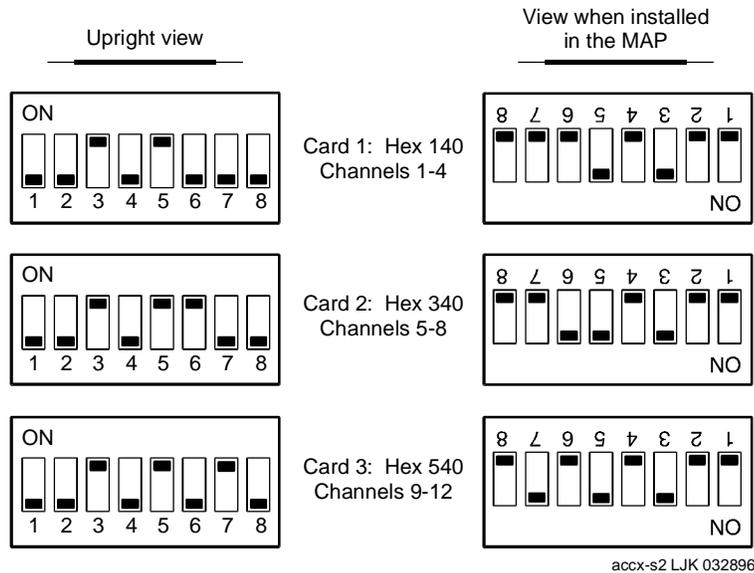


Figure 2-2. DIP Switch Settings for the ACCX Card

Breakout Box and Cable

Figure 2-3 shows the breakout box, breakout cable, and ACCX card. The breakout cable connects from the ACCX card to the breakout box. The cable length allows the breakout box to be placed up to 12 feet away from the Lucent INTUITY system. From the breakout box, the RS-232 or DCIU cable connects through a modem to the wall field, and the DCP cable connects directly to the wall field.

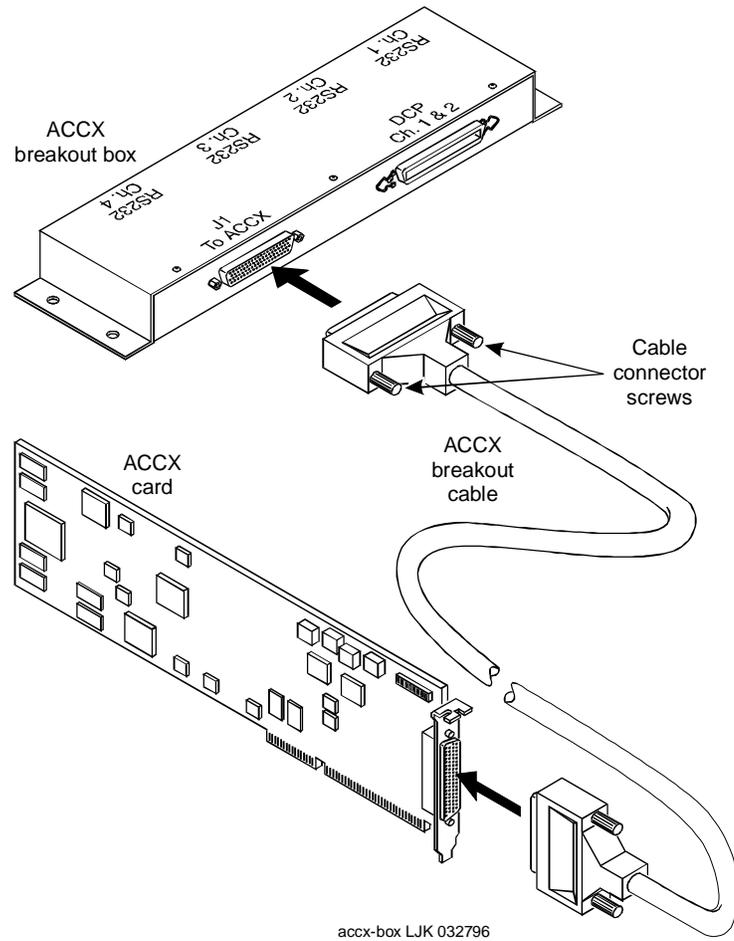


Figure 2-3. Breakout Box and Cable Connections for the ACCX Card

LAN Card

An ethernet local area network (LAN) card (Figure 2-4) provides the TCP/IP networking connection to a LAN/WAN.

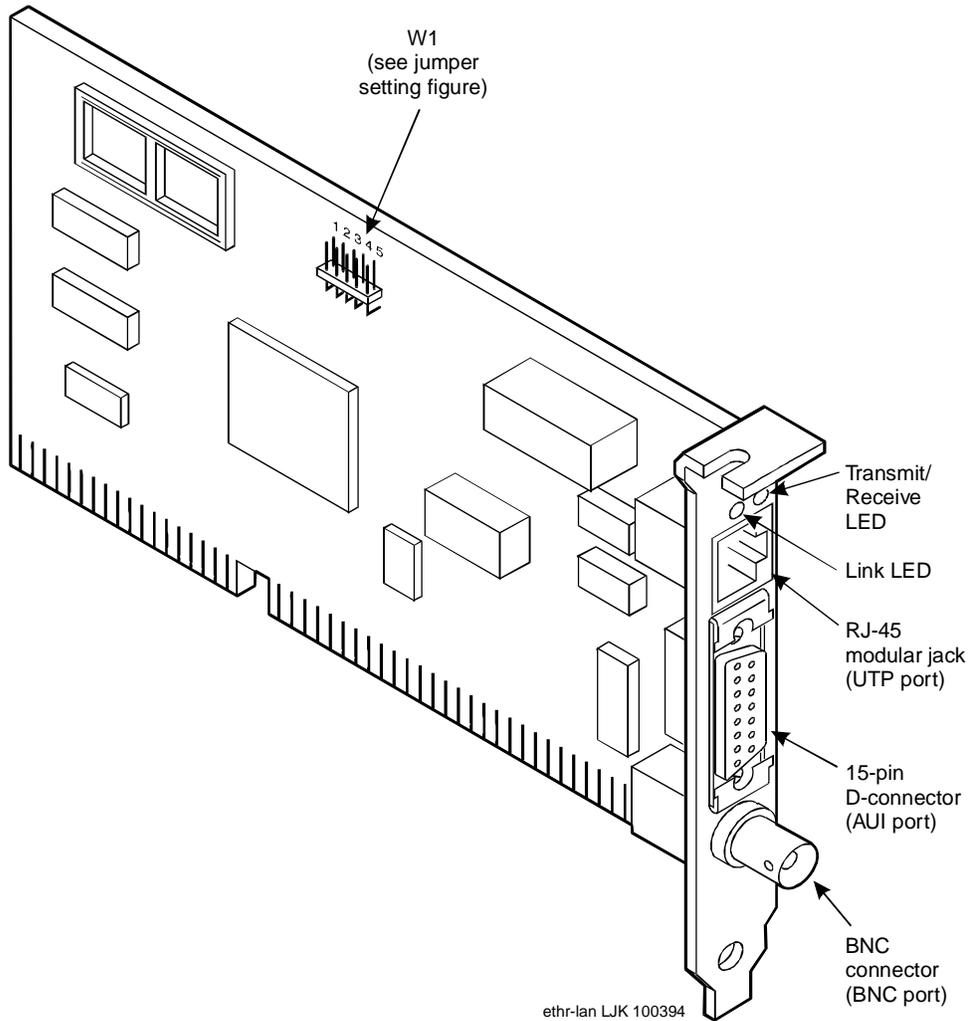


Figure 2-4. The Ethernet LAN Interface Card

Number of Cards Supported

The Lucent INTUITY platforms support one LAN card which provides four networking channels.

Required Slot Positions

The required slot positions are:

- MAP/5 — slot 2
- MAP/40s — Highest available slot reserved for optional feature cards. These slots include slots 6 through 8.
- MAP/40 — Highest available slot reserved for optional feature cards. These slots include slots 6 through 8.
- MAP/100 — Slot 18

Jumper Settings

The LAN card requires one jumper, connected to W1. The default setting is 1, which sets the card for a “soft” configuration. Figure 2-5 illustrates the placement of the jumper on W1.

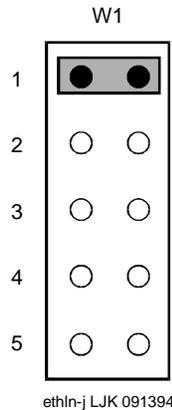
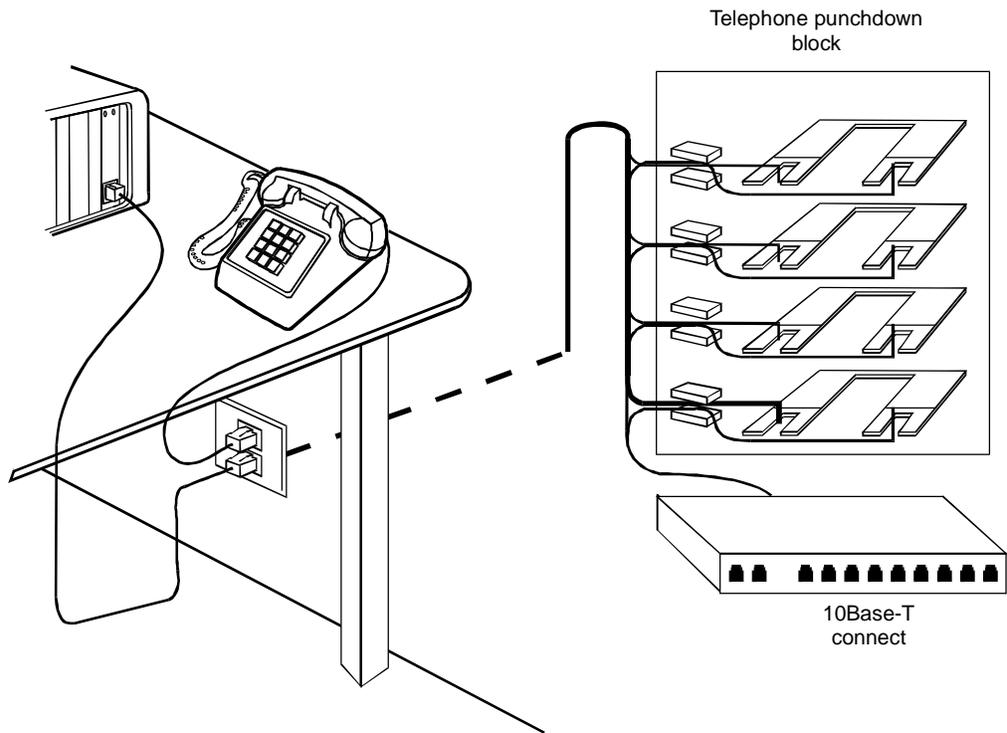


Figure 2-5. LAN Card Software Programmable Jumper Setting

Attachments to the Network

The LAN card can be attached to four types of network interfaces:

- 10Base-T (twisted pair with link integrity) (Figure 2-6)
- Twisted Pair (no link integrity) (Figure 2-6)
- 10Base-2 (BNC, thin ethernet) (Figure 2-7 and Figure 2-8)
- Auxiliary Unit Interface (AUI) (thick ethernet) (Figure 2-9)



coax_4 mm 040196

Figure 2-6. Attaching the LAN Circuit Card to Unshielded Twisted Pair Cable

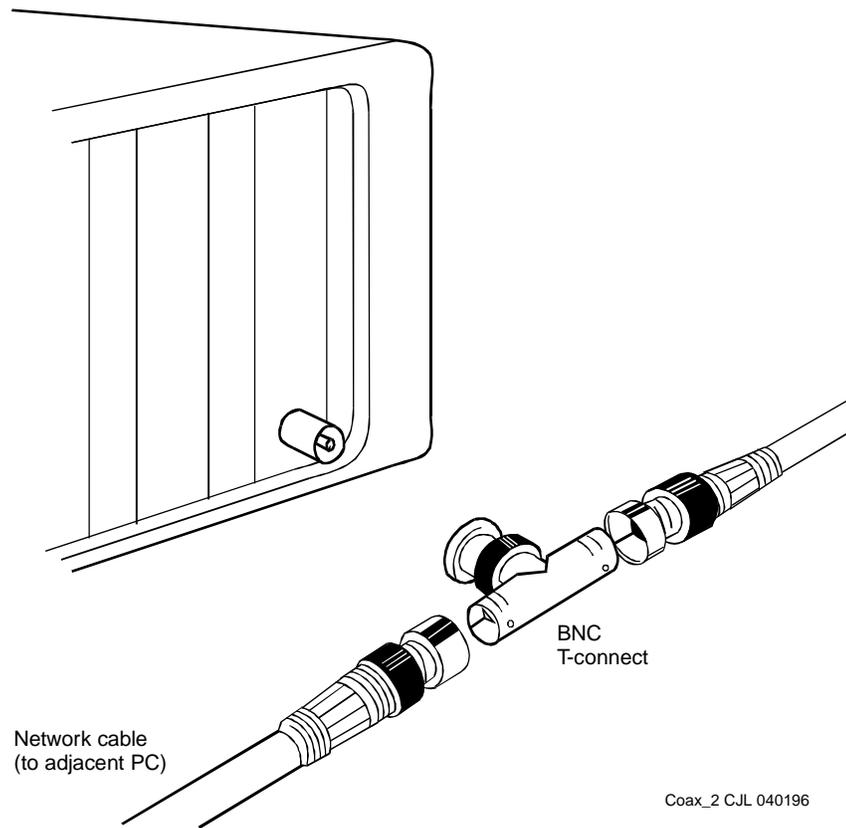


Figure 2-7. Attaching the LAN Circuit Card to Thin Coaxial Cable Segment

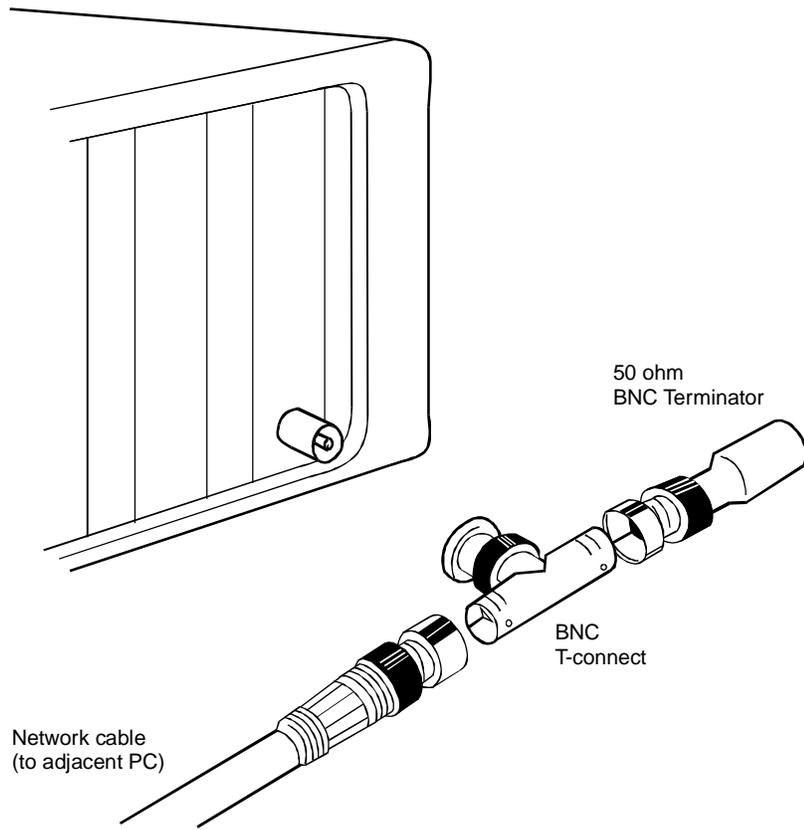


Figure 2-8. Attaching the LAN Circuit Card to Terminator for Thin Coaxial Cable Segment

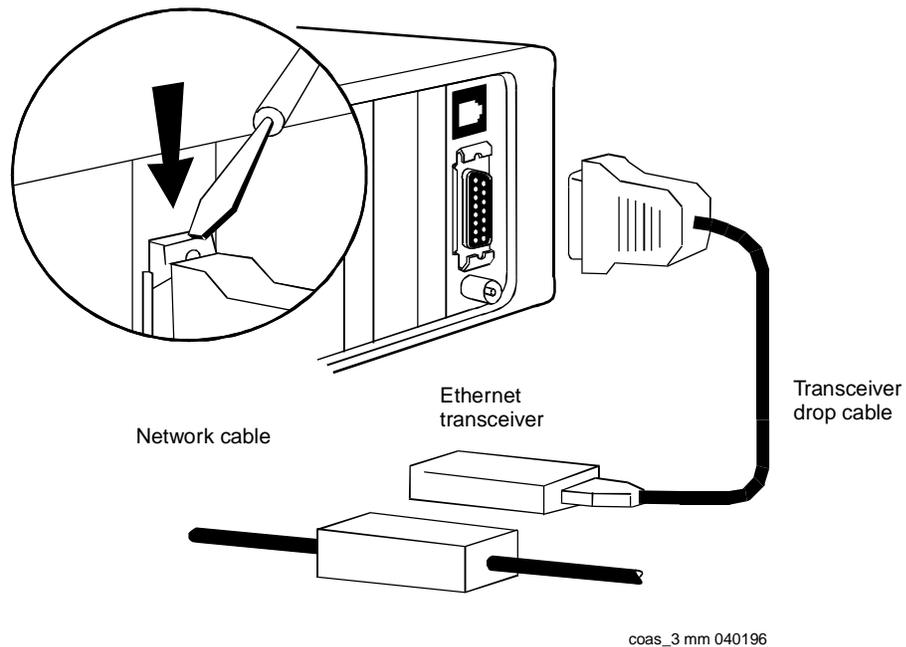


Figure 2-9. Attaching the LAN Circuit Card to Thick Ethernet Cable

Modems

Modems are needed for RS-232 connections on each end of the connection. Table 2-4 specifies all primary and certified modems. Primary modems are shipped with the system. Certified modems have been verified to work with digital networking.

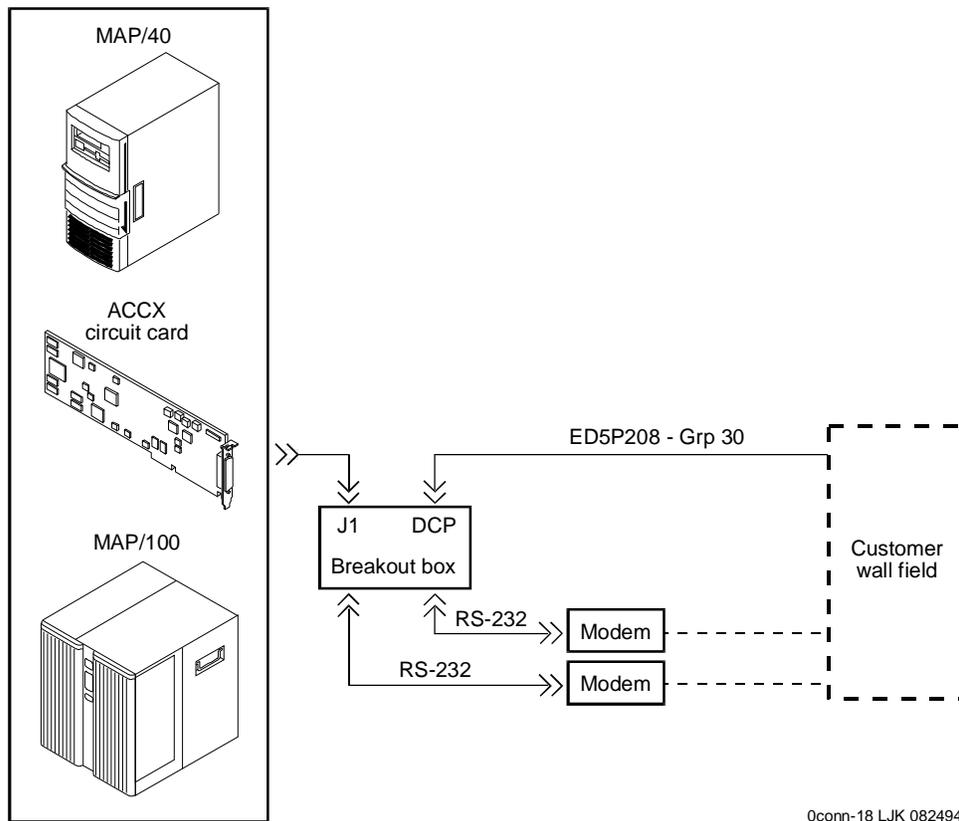
Table 2-4. Modems Supported for Digital Networking

Modem	Type of Support	Notes
Paradyne Comsphere 3820	Primary device	
Paradyne Comsphere 3830	Certified device	
Paradyne Comsphere 3910 (non-United States)	Primary device	

Connectivity Examples

Digital networking connections can include an ACCX card (for DCP and RS-232 connections) and/or a LAN card (TCP/IP).

Figure 2-10 shows the hardware connections for digital networking with an ACCX card.



0conn-18 LJK 082494

Figure 2-10. ACCX Card Connectivity Diagram for Two RS232 and One DCP Lines

Figure 2-11 shows the hardware connections for digital networking with a LAN card. Local area networks vary greatly, and this drawing is a representation of a LAN. The customer is responsible for the LAN.

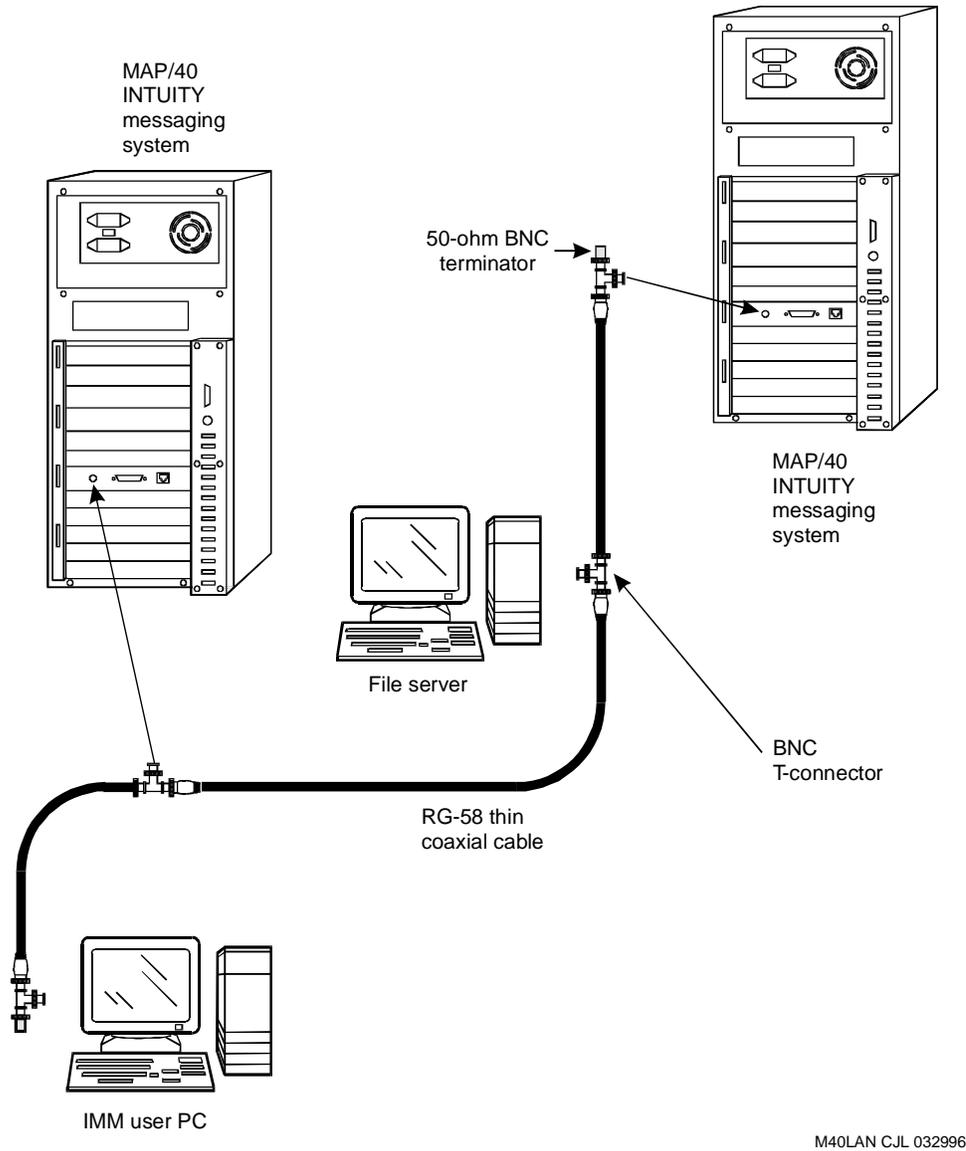


Figure 2-11. LAN Card Connectivity Diagram Using 10Base2

Switch Requirements

This section contains information on switch requirements for using INTUITY AUDIX digital networking.

Circuit Pack Requirements

Lucent Technologies switch circuit pack requirements for INTUITY AUDIX digital networking are covered in Chapter 3, "Types of Connections."

Switch Administration

Digital networking requires the following switch administration (See Appendix A, "Switch Administration.")

Data Module

Administer a Data Module screen on the switch for each DCP networking port.

Modem

Add a station extension for each modem and set it up as a 2500.

Hunt Group

Set up separate hunt groups for the DCP networking ports and the RS-232 modems.

Class of Service

The DCP or RS-232 ports need a separate class of service with only touch tone and data privacy. No incoming or outgoing restrictions should exist for the digital and/or the analog ports.

Considerations for Networking with Other AUDIX Systems

The INTUITY AUDIX system can network with other INTUITY AUDIX systems, DEFINITY AUDIX systems, and AUDIX R1 systems. Additionally, with INTUITY AUDIX Release 4, the network can expand to include supported e-mail systems. Voice messages are transmitted in a digital file format, similar to a data file transfer between two computer systems. There are considerations when networking with a previous release of the INTUITY AUDIX system, a DEFINITY AUDIX system, or an AUDIX R1 system. All systems and all releases receive voice messages.

INTUITY AUDIX Release 4

An INTUITY AUDIX Release 4 system can exchange voice, text, and attached files on a network that includes network addresses *external to the AUDIX system*, for example, e-mail addresses on supported e-mail servers such as Lotus™ Notes®.

If a site does not have e-mail, users can still exchange voice, text, Message Manager text and attached file messages *within the AUDIX network*, but users must send and receive the message using INTUITY Message Manager Release 4.0 or higher.

INTUITY AUDIX Release 3

An INTUITY AUDIX Release 3 system cannot receive e-mail, Message Manager text, or attached file messages. It can receive fax messages only if it is fax-enabled.

INTUITY AUDIX Release 2 and INTUITY AUDIX Release 1

An INTUITY AUDIX Release 2 or 1 cannot receive fax, e-mail, Message Manager text, or attached file messages.

DEFINITY AUDIX R3.2 System

The DEFINITY AUDIX R3.2 system does not support fax, e-mail, or attached file messaging. If an INTUITY AUDIX user tries to send a fax, e-mail, or attached file message to a DEFINITY AUDIX user along with a voice message, the INTUITY AUDIX system delivers only the voice portion of the message.

The INTUITY AUDIX system and the DEFINITY AUDIX system both use the CELP (code excited linear prediction) voice messaging encoding algorithm, so the voice quality of messages sent between the two systems is not degraded.

AUDIX R1 System

There are several considerations for an AUDIX R1 system.

Fax, E-mail, and Attached Files

The AUDIX R1 system does not support fax, e-mail, or attached file messages. If an INTUITY AUDIX user tries to send a fax, e-mail, or attached file message to an AUDIX R1 user along with a voice message, the INTUITY AUDIX Release 4 system delivers only the voice portion of the message.

Voice Messaging Encoding

The INTUITY AUDIX system can accommodate messages encoded using the CELP voice messaging encoding algorithm or the sub-band algorithm used on the AUDIX R1 system. CELP voice messaging encoding is higher quality than sub-band. Outgoing messages transmitted from an INTUITY AUDIX system to an AUDIX R1 system will be transcoded (converted) from CELP to sub-band format, so the voice message will be sub-band quality on the AUDIX R1 system.

Incoming messages from an AUDIX R1 system are stored in the sub-band format in which they are received. A message received from an AUDIX R1 system is of lower voice quality than other messages received on an INTUITY AUDIX system.

Network Card

AUDIX R1 systems require a TN539B card to network with the INTUITY AUDIX system.

Voice Messaging Encoding

Table 2-5 shows the voice messaging encoding methods for INTUITY AUDIX digital networking.

Table 2-5. Voice Messaging Encoding Methods for INTUITY AUDIX Digital Networking

Voiced Entity	Path	Encoding Method
Voice messages	Local	CELP
Digitally networked voice messages	From Lucent INTUITY to AUDIX R1	Transcoded CELP to sub-band
	From AUDIX R1 to Lucent INTUITY	sub-band
	From Lucent INTUITY to Lucent INTUITY	CELP
	From Lucent INTUITY to DEFINITY AUDIX	CELP
	From DEFINITY AUDIX to Lucent INTUITY	CELP

Messaging Feature Considerations

This section presents the affects of digital networking on various messaging features.

Address-by-Name	Address-by-name works only for remote recipients who are administered on the INTUITY AUDIX system.
Aliases	You may create and assign an alias to any remote user just as you would to a local user.
Broadcast Message	When sending a broadcast message through a digital network, it is necessary to send the message as voice mail to a specific mailbox on each remote system. The remote recipients can broadcast the message through their respective systems.
Creating a New Message for a Third Person	Just after listening to a message from a remote user, a user can create a new INTUITY AUDIX mail message and send it to a third person without returning to the Activity Menu.
Directory	In a digital network, only administered remote users are listed in the Directory. Also, only their extension numbers will be voiced. The caller has to know the prefix of those persons before sending them a message.
Forwarding Messages with Comments	A user can add a comment to the beginning or end of a message from a remote user and then redirect the combination to another local or remote user.
Login Announcement	Login announcement messages can be sent across a digital network, but are not recognized or presented as login announcements. They are simply delivered as normal messages.
Mailing Lists	Mailing lists can consist of AUDIX users on more than one machine. However, public mailing lists cannot be shared across more than one AUDIX system. You might have to use a location prefix to include a user who is on a different AUDIX machine in the network (this is not necessary if you are addressing the message using names instead of extensions). If a remote administered user is added to a list, that user's name will be voiced back. E-mail addresses can be included in mailing lists. E-mail addresses can be entered using Lucent INTUITY Message Manager or can be non-administered remote users.
Message Transmission Times	The system administrator can define the actual times when messages are transmitted to remote systems on the Digital Network Machine Administration window.

Priority Messages	Priority voice mail messages keep their priority status when sent to INTUITY AUDIX, DEFINITY AUDIX R3.2, or AUDIX R1 systems.
Private Messages	Private messages can be sent via digital networking to other INTUITY AUDIX, DEFINITY AUDIX R3.2, or AUDIX R1V4 and later systems.
Reply to Sender	A user can reply immediately via INTUITY AUDIX mail to the remote user who has sent an INTUITY AUDIX message, e-mail, or call answer message.
Return Call to Sender	A user cannot press <input type="checkbox"/> to return a call to the sender if the sender is on a remote machine.
Transfers	A user cannot transfer to a remote user.

Lucent INTUITY Message Manager Considerations

The subject annotation field added by Lucent INTUITY Message Manager users will be sent to INTUITY AUDIX Release 3 and later systems even if the remote machine is not multimedia enabled. The subject annotation field will not be sent to other systems with Lucent INTUITY Message Manager (INTUITY AUDIX Release 2 and DEFINITY AUDIX Release R3.2); however, the rest of the message will be sent.

Fax Considerations

To send a fax message:

- The sending machine must be multimedia enabled.
- The receiving machine must be fax enabled. Only INTUITY AUDIX Release 3 and INTUITY AUDIX Release 4 systems are capable of being fax enabled.
- The user on the receiving machine must be fax enabled.

If a fax message accompanies a voice message and the fax message is undeliverable:

- The INTUITY AUDIX Release 3 system will not deliver either the fax message or the voice message.
- The INTUITY AUDIX Release 4 system will deliver the voice message and include a voice announcement that the message included an undeliverable component.

E-mail Considerations

E-mail text message delivery is available only on INTUITY AUDIX Release 4 systems. Messages may be addressed to a remote e-mail user if one of the following is true:

- The e-mail user is administered on the local INTUITY AUDIX system as a remote user
- The e-mail user can be reached by a trusted server on the local INTUITY AUDIX system
- The receiving machine is e-mail enabled

Table 2-6 presents a summary of recipient's view of message delivery based on type of system and release.

Table 2-6. Recipient's View of Message Delivery

Receiving System	Sending System/Message Type			
	Any System	R3 Multimedia	R4 Multimedia	
	Voice-Only Msg	Msg w/ Fax	Msg w/ Fax	Msg w/ Text, Binary
Voice only (All AUDIX R1; DEFINITY AUDIX R3.2; INTUITY AUDIX R1, R2, R3 not multimedia; or AMIS Analog)	Message delivered ¹	Message undeliverable	Voice component delivered with ear-con ² ; Status=delivered	Voice component delivered with ear-con; Status=delivered
Call Delivery ³	Message delivered (voice played out)	Message printed	Message printed	Message printed
R3 multimedia Recipient=voice only	Message delivered	Message undeliverable	Voice component delivered with ear-con; Status=delivered	Voice component delivered with one or two ear-con(s); Status=delivered

Continued on next page

Table 2-6. Recipient's View of Message Delivery — Continued

Receiving System	Sending System/Message Type			
	Any System	R3 Multimedia	R4 Multimedia	
	Voice-Only Msg	Msg w/ Fax	Msg w/ Fax	Msg w/ Text, Binary
Recipient= voice/fax	Message delivered	Message delivered	Message delivered	Voice/fax message delivered with ear-con Status=delivered
R4 multimedia	Message delivered	Message delivered	Message delivered	Message delivered

1. Message delivered assumes successful delivery to recipient's mailbox. The delivery could fail, in which case the receiving system returns the message to the sending system with a status of undeliverable.
2. An ear-con is a tone and an announcement stating that one or more components of the message could not be delivered.
3. If the message is voice-only, the system assumes that the endpoint is a telephone and plays the message. If the message contains any nonvoice component, the system assumes that the endpoint is a fax machine and prints the message.

Sending to a Voice-Only System

The sending system does not convert message components from one media to another to permit delivery to another system. For example, the sending system does not convert a text message component on an INTUITY AUDIX Release 4 system to voice (using Text-to-Speech) so that it can be transmitted to an AUDIX R1 system.

The sending INTUITY AUDIX Release 4 system does the following when sending a message to a remote voice-only system (AUDIX R1, DEFINITY AUDIX R3.2, INTUITY AUDIX R1 or R2, INTUITY AUDIX R3 [not fax-enabled], or AMIS analog system):

- If the message contains only a voice component, sends it to the remote system
- If the message contains no voice component, rejects the message as undeliverable

- If the message contains a voice component and another component type
 - Removes any nonvoice components (fax, text, and/or binary file)
 - Appends the deletion tone and deletion announcement to the end of the voice component
 - Sends the message (voice only) with the embedded deletion tone and announcement

The sender receives an undeliverable message notice for any undeliverable components with the reason the “recipient’s machine accepts only voice messages.”

Sending to an INTUITY AUDIX R3 Fax-Enabled System

The sending INTUITY AUDIX Release 4 system does the following when sending a message to a remote INTUITY AUDIX Release 3 system (fax enabled):

- If the message contains voice only, fax only, or voice/fax, sends it to the remote system
- If the message contains neither a voice or fax component, rejects the message as undeliverable
- If the message contains either a voice or fax component and a text or binary file component,
 - Removes any text and/or binary file components
 - Appends the deletion tone and deletion announcement to the end of the voice component
 - Sends the message (voice only, fax-only, or voice/fax) with the embedded deletion tone and announcement

The sender receives an undeliverable message notice for any undeliverable components with the reason the “recipient’s machine accepts only voice and fax messages.”

Receiving from a Remote System

When a message is received from a remote system, the receiving INTUITY AUDIX Release 4 system delivers to the recipient the voice, fax, text, and/or binary file components (one component of each type) in the message. The system deletes the second and any subsequent message component of a given type and includes a partial delivery indicator in the message header.

Synchronization of E-mail and Voice Mailboxes

There are many considerations for digital networking when synchronizing e-mail with voice mailboxes.

Non-Administered Remote User

If the message sender is not in the remote user database of the receiving INTUITY AUDIX system, the system adds the sender to the database as a verified non-administered remote user. The system includes the sender's address, including the associated trusted server name, in the remote user profile and includes the sender's name in text format, if available.

The text name is part of the user record and is always available for local users and for administered remote users. The text name may be available for verified non-administered remote users on e-mail systems. It is not available for verified non-administered remote users on other voice systems. The text name is included in the AUDIX directory and enables addressing by name.

Trusted Server

For the INTUITY AUDIX user to receive messages from, or send messages to, an e-mail system, a trusted server must be administered between the INTUITY AUDIX system and the e-mail system. Considerations for trusted servers are:

- Machine names must be unique within the network when compared with other machine names and with trusted server names. It is recommended that trusted server names be unique within the network.
- The INTUITY AUDIX Release 4 system accepts messages from a remote e-mail system through a trusted server for delivery *only* to local users. The INTUITY AUDIX system will not accept delivery of e-mail messages addressed to remote INTUITY AUDIX users (see Figure 2-12).
- The INTUITY AUDIX Release 4 system sends messages to a remote e-mail system through a trusted server and the e-mail system delivers those messages to addresses that it recognizes as valid (for example, a local e-mail user or an Internet address) (see Figure 2-12).

- When an INTUITY AUDIX user receives an e-mail message and forwards it to a remote INTUITY AUDIX user, the remote INTUITY AUDIX user cannot include the e-mail sender on the reply unless the remote INTUITY AUDIX system has a trusted server administered for that e-mail system.
- When an INTUITY AUDIX user sends a message to e-mail users and remote INTUITY AUDIX users, the e-mail users cannot send replies that include the remote INTUITY AUDIX users unless the remote INTUITY AUDIX system has a trusted server administered for that e-mail system.

Figure 2-12 shows how an INTUITY AUDIX network can exchange messages with an e-mail network.

- INTUITY AUDIX A is synchronized with e-mail system A. These two systems can send messages between each other.
- The other INTUITY AUDIX systems can send messages to e-mail system A only if they first send the messages to a user on INTUITY AUDIX A. The INTUITY AUDIX A user can then forward the messages to e-mail system A.
- E-mail system A can send messages received from INTUITY AUDIX A to the other e-mail systems in the network as long as e-mail system A has a valid gateway to the other e-mail systems.
- The other e-mail systems can send messages to INTUITY AUDIX A as long as the correct gateway administration has been done for INTUITY AUDIX A in the e-mail network.

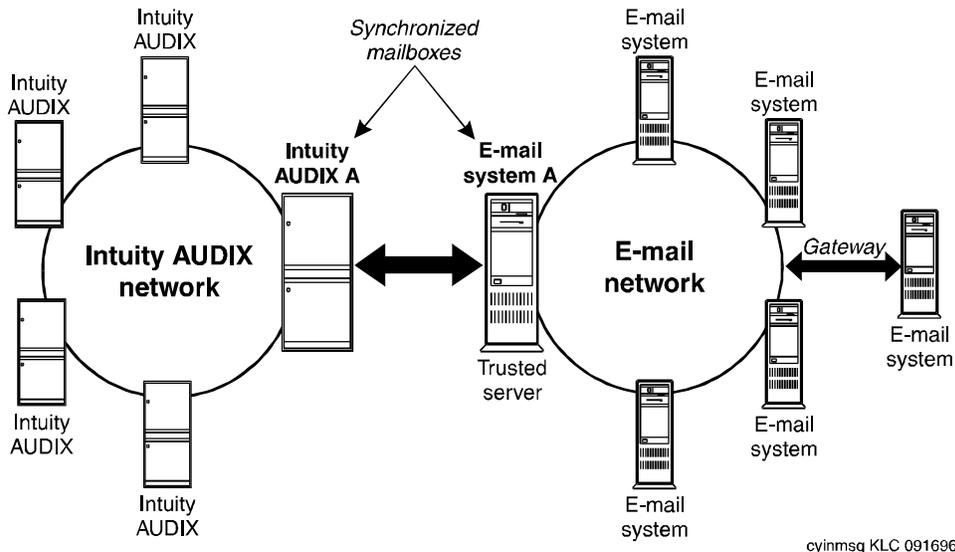


Figure 2-12. Exchanging Messages between INTUITY AUDIX and E-mail Networks

Remote Updates

The remote update feature does not forward user updates on the e-mail systems connected by trusted servers to the INTUITY AUDIX system.

ELA Considerations

ELA is an optionally purchasable feature available only on INTUITY AUDIX Release 4 systems. ELA has the following characteristics that impact the network:

- Access to Enhanced Lists from *anywhere* within the AUDIX network (standard AUDIX mailing lists are only accessible to those users with mailboxes on the same machine as the lists)
- Cross-domain delivery is used to send messages to remote AUDIX users, administered e-mail users, and AMIS-analog remote AUDIX users
- Cross-domain delivery is available from an e-mail trusted server to AUDIX, if the ELA list mailbox is synchronized with the e-mail trusted server. This enables administered e-mail users to access the ELA lists.
- Two ELA trusted servers must be defined to the AUDIX server and access administered (including the surrounding security requirements)
- IMAPI sessions for ELA server access to AUDIX are required

Overview

This chapter describes configurations and requirements for the types of digital networking connections available with INTUITY AUDIX digital networking.

This chapter is organized as follows:

- Lucent Technologies Digital Communications Protocol (DCP) 56 Kbps for remote connections, including:
 - Requirements
 - Sample configuration
 - Sample administration for a remote system
- DCP 64 Kbps for remote connections, including:
 - Requirements
 - Sample configuration
 - Sample Administration for a remote system
- EIA RS-232 9.6 or 19.2 Kbps for remote connections
- TCP/IP for both remote and dedicated connections
 - Sample configurations
 - Requirements
 - Sample administration for a remote system
- Mixtures of connection types
- Considerations for choosing a connection type

Purpose

This chapter provides a description and configuration examples for the types of digital networking connections. The design center designs all digital networks. This information is provided to help you understand the digital networking capabilities and requirements if you desire to know more about your network or the alternatives available for networking.

DCP Mode 1 — 56 Kbps

DCP Mode 1 is a high-speed, 56-Kbps connection. This section presents supported 56-Kbps configurations for INTUITY AUDIX digital networking. You can use this type of network connection when the systems to be networked are in different locations and require some type of interlocation facility to communicate. Transmission with this type of connection is full-duplex, synchronous.

The INTUITY AUDIX system can network with other INTUITY AUDIX systems, DEFINITY AUDIX systems, and AUDIX R1 systems using this method. The switches to which the AUDIX systems connect must be Lucent Technologies DCP switches — System 75, System 85, DEFINITY Generic 1, DEFINITY Generic 2, or DEFINITY Generic 3.

⇒ NOTE:

It is recommended that 64-Kbps connections be used to achieve maximum data throughput whenever 64-Kbps connectivity is available between two systems. TCP/IP provides the greatest throughput if a local area network (LAN) is available.

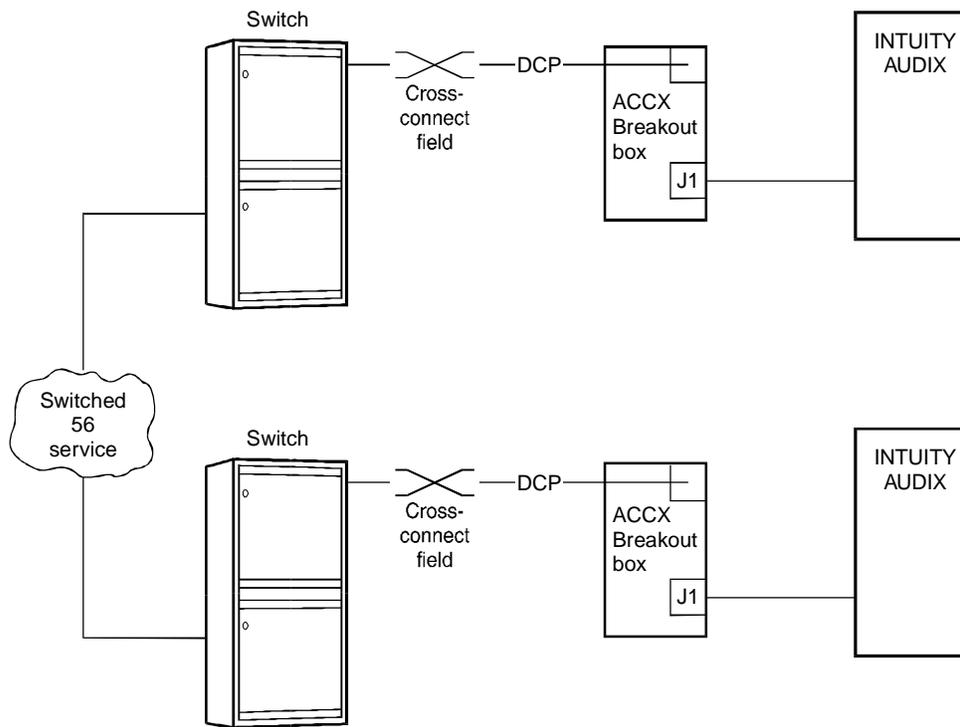
Requirements

If you are planning to use DCP Mode 1 connections in your INTUITY AUDIX network, you need the following:

- A DS1 interface on the switch to connect with the 56 Kbps facility
- Access to 56 Kbps robbed-bit facilities at a static or dynamic Serving Office (SO)
- Long-distance, 56-Kbps service which may be provided by AT&T or another long distance service provider

Sample Configuration

Figure 3-1 shows two INTUITY AUDIX systems using DCP at both locations networked via 56-Kbps services.



int_net6 C.JL 041596

Figure 3-1. DCP Mode 1 Network Using Switched 56-Kbps Service

56 Kbps Service Facilities

To use DCP Mode 1 as the networking connection, the switch must be set up to access a switched network at 56-Kbps via robbed-bit facilities. These special access lines can be one of the following services providing access to either a static or dynamic Serving Office (SO):

- AT&T ACCUNET T1.5
- AT&T Software Defined Network (SDN)
- Compatible services provided by other vendors

Currently the System 75, System 85, DEFINITY Generic 1, Generic 2, or Generic 3 can provide this type of access. However, System 85 (R2V3 or R2V4) does not support dynamic access. Up to six channels on the 56 Kbps service facility may be required at any one time for System 85 and Generic 2 and up to four channels for System 75, Generic 1, and Generic 3.

 **NOTE:**

If you do not subscribe to switched 56 service, consider the other types of network connections before setting up a switched 56 Kbps facility. It is recommended that 64 Kbps connections be used to achieve greater data throughput rather than 56 Kbps whenever 64 Kbps connectivity is available between two systems. TCP/IP provides the greatest throughput.

Static Access

Static Software Defined Data Network (SDDN) allows customers currently subscribing to SDN voice applications to transmit data on the same access arrangement by defining a subgroup for data. To use this configuration, you must have a trunk subgroup (TSG) dedicated to SDDN 56 Kbps between the customer premises and a central office. You must also have a System 75 R1V3 Issue 2.1 or later, a System 85 R2V3 or R2V4, or a DEFINITY Generic 1, Generic 2, or Generic 3 switch.

The central office must provide one of the following:

- AT&T Software Defined Network (SDN)
- AT&T T1.5
- AT&T Dataphone Digital Service (DDS) and Switched Digital Service (SDS)
- Compatible service offered by another vendor
- A 4ESS supporting 56-Kbps service

You *cannot* use this option if you have the following:

- T1.5 access to a central office tariffed for SDN
- T1.5 access that does not originate from a 4ESS with Switched Digital Service (SDS)

Dynamic Access

Dynamic SDDN (non-ISDN) allows those who currently subscribe to SDN voice applications to transmit data on the same access arrangement by prefixing a feature code in front of a telephone number. This allows you to alternately transmit voice and data on one access line; a separate trunk group for 56 Kbps data is not required.

The T1.5 is dedicated to SDN and is therefore not exclusively 56 Kbps. The central office must route to a 4ESS that supports 56 Kbps via digital connectivity. This access may only be offered on circuits without echo cancellation.

The dynamic arrangement is not possible from locations using Dataphone Digital Service (DDS) access. DDS lines must terminate in a central office that has been tariffed for Software Defined Network (SDN), DDS, and Switched Digital Service (SDS).

System 75 R1V3, DEFINITY Generic 1, Generic 2, and Generic 3 support dynamic access but have special requirements such as circuit packs. System 85 R2V3 and R2V4 do not support dynamic access.

INTUITY AUDIX Requirements for DCP Mode 1

The INTUITY AUDIX must have an ACCX card to support 56 Kbps service. Each INTUITY AUDIX system must be within 5000 cable feet (1525 meters) of the switch's DCP interface.

Switch (or Customer) Requirements for DCP Mode 1

To implement INTUITY AUDIX digital networking over static or dynamic switched 56 Kbps facilities, the customer's switch must have a DS1 interface to connect with the 56 Kbps switched network. Circuit packs for DS1 include:

- TN722
- TN567
- TN464

 **NOTE:**

INTUITY AUDIX digital networking through tandem switches may not work.

Whether you are using static or dynamic 56 Kbps, the point-of-presence switch needs to be translated to match your switch (including wink in/wink out). You, the customer, set up the RNXs, and the network vendor adds them to the network.

 **NOTE:**

See *DEFINITY Communications System Generic 2.2 and Generic 3 Version 2 DS1/CEPT1/ISDN-PRI Reference*, 555-025-107, for administering DS1 trunks on the DEFINITY switch.

The premises switch has requirements for networking INTUITY AUDIX systems via 56 Kbps facilities as described below.

System 75

- The switch must be R1V3 2.1 or later.
- All tone detectors must be TN748C (V4 or later).

DEFINITY Generic 1 and Generic 3

- Any release will support static and dynamic 56 Kbps access.
- All tone detectors must be TN748C (V4 or later).
- The tone clocks must be TN768, TN780, or TN2182.

System 85

- Switch versions R2V3 and R2V4 support static 56 Kbps only.
- All tone detectors must be at least an SN255B.

DEFINITY Generic 2 or 2.2

- Any release will support static 56 Kbps access. System 85 does not support dynamic access.
- For universal modules, the detector must be a TN748C (V4 or later). For traditional modules, the detector is an SN255B.

Sample Administration for a Remote System

Figure 3-2 shows an example of the Digital Network Machine Administration window for calling a remote system using a data rate of 56 Kbps.

The screenshot displays a terminal window titled "Digital Network Machine Administration". The configuration is as follows:

- Machine Name: Chicago
- Connection Type: DCP MODE 1
- Dial Str: 95553000
- Message Transmission Schedule (hh:mm, 00:00 - 23:59)
 - 1: start: 00:00 end: 23:59 interval: 00:05
 - 2: start: _: _ end: _: _ interval: _: _
 - 3: start: _: _ end: _: _ interval: _: _
- Data Rate: 56000
- Password: *****
- Channel: 1
- Machine Type: INTUITY 3.0
- Send Multimedia Messages (e.g. FAX) ? : Y

At the bottom of the window, there are several menu options: **HELP**, **CHOICES**, **PREV-FRM**, **NEXT-FRM**, **CANCEL**, and **CHG-KEYS**.

Figure 3-2. DCP Mode 1 Digital Network Machine Administration Example

DCP Mode 3 — 64 Kbps

DCP Mode 3 is a high-speed, 64-Kbps connection. This section presents supported 64-Kbps configurations for INTUITY AUDIX digital networking. You can use this type of network connection when the systems to be networked are collocated (serving the same switch) or when they are in different locations. Transmission with this type of connection is full-duplex, synchronous.

The INTUITY AUDIX system can network with other INTUITY AUDIX systems, DEFINITY AUDIX systems, and AUDIX R1 systems using this method. The switches to which the AUDIX systems connect must be Lucent Technologies DCP switches — System 75, System 85, DEFINITY Generic 1, DEFINITY Generic 2, or DEFINITY Generic 3.

⇒ NOTE:

It is recommended that 64-Kbps connections be used to achieve maximum data throughput whenever 64-Kbps connectivity is available between two systems. TCP/IP provides the greatest throughput if a LAN is available.

Requirements

If you are planning to use DCP Mode 3 connections in your INTUITY AUDIX network, you need the following:

- Access to 64-Kbps public or private telephone network facilities for remote configurations. These normally should be a T1 carrier with DS1 services or Integrated Services Digital Network Primary Rate Interface (ISDN PRI).
- A DS1 or ISDN interface on the switch to connect to these network facilities

Sample Configuration

DCP Mode 3 Network for a Single Switch (Figure 3-3) shows an arrangement where two INTUITY AUDIX systems are networked via 64-Kbps services to a single switch.

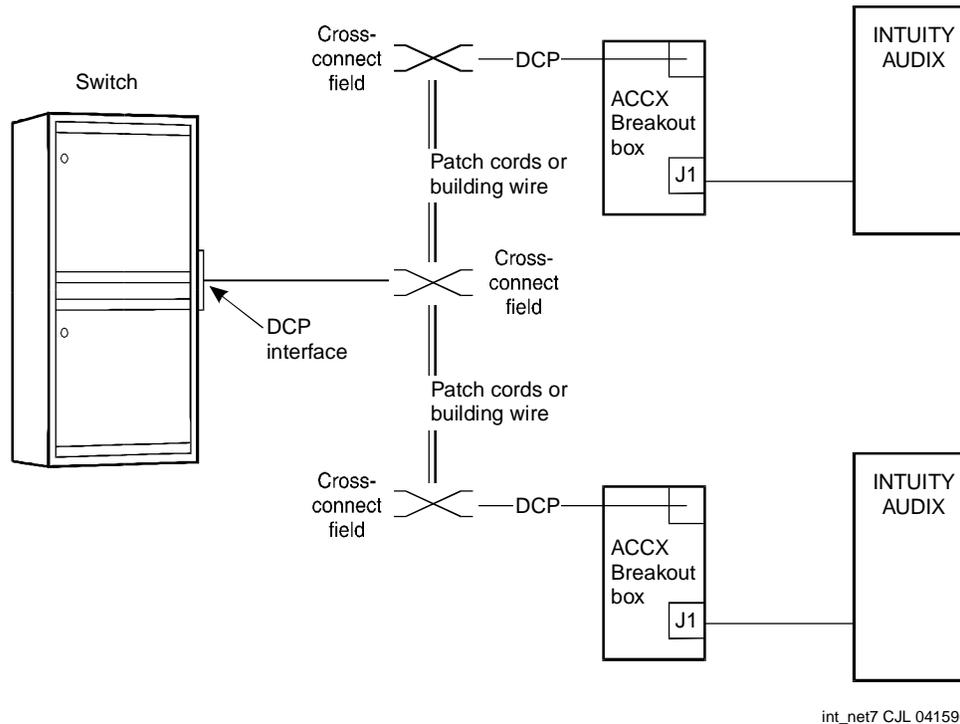
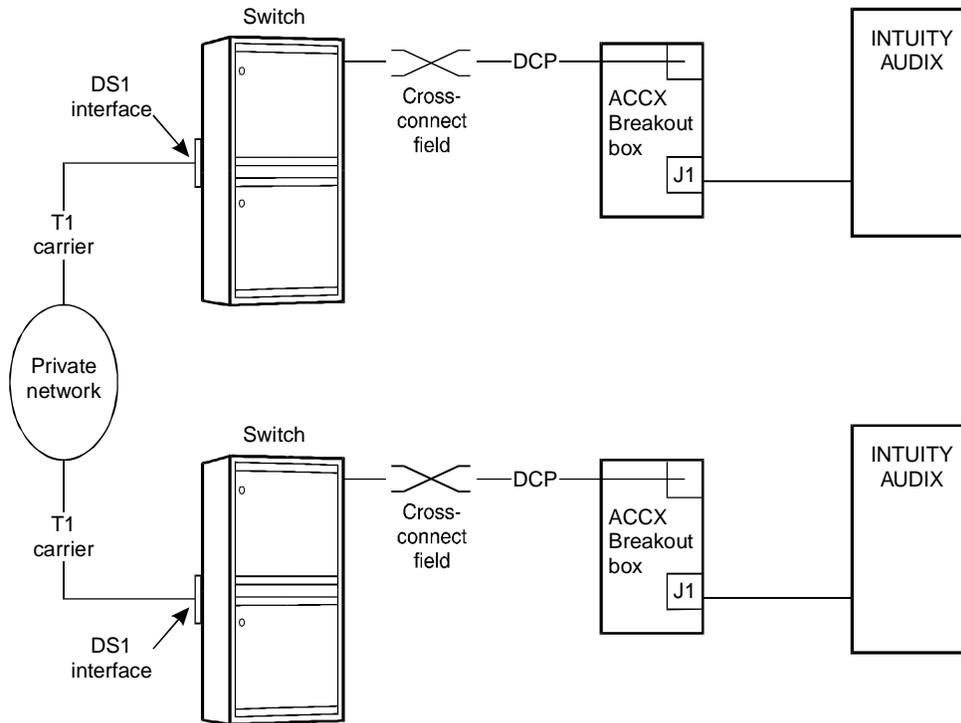


Figure 3-3. DCP Mode 3 Network for a Single Switch

Figure 3-4 shows two INTUITY AUDIX systems connected to separate switches using DCP Mode 3. The switches are connected over a private network by T1 lines.



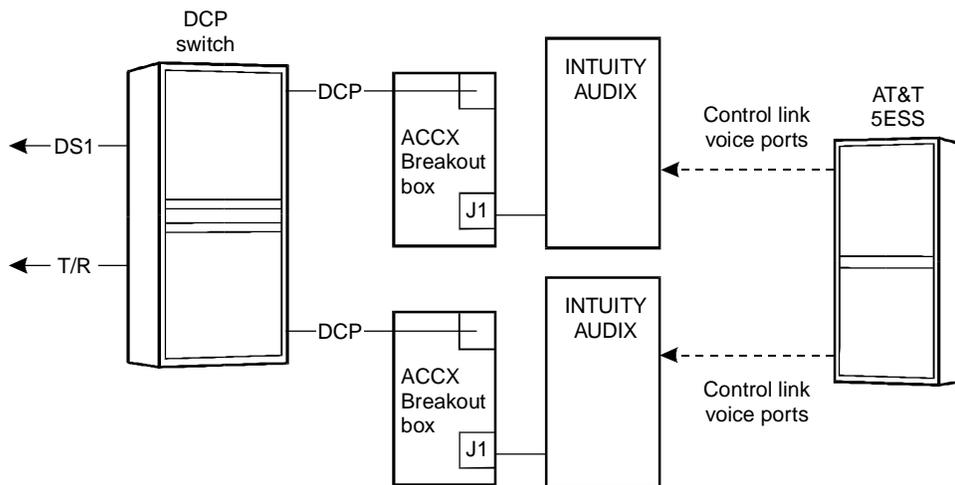
int_net8 CJL 041596

Figure 3-4. DCP Mode 3 Network for Multiple Locations

DCP Mode 3 for a 5ESS Switch

Figure 3-5 shows how a DCP switch provides the DCP and DS1 interfaces for a 5ESS Centrex (an example of a non-DCP switch). The INTUITY AUDIX system can serve the employees who reside on the Centrex. The DCP switch can be used only for its DCP, DS1, modem pooling, and alternate routing capabilities. The DCP switch:

- Provides a 64-Kbps digital network path between the two INTUITY AUDIX systems shown
- Provides a 64-Kbps digital network path to an INTUITY AUDIX system located outside the 5ESS environment
- Provides the ability to designate the digital path as the first-choice facility with the analog path providing backup using the Automatic Alternate Routing feature



int_net9 C.JL 041596

Figure 3-5. DCP Mode 3 Network for a 5ESS Switch

INTUITY AUDIX Requirements for DCP Mode 3

The INTUITY AUDIX system must have an ACCX card to support 64 Kbps service. Each INTUITY AUDIX system must be within 5000 cable feet (1525 meters) of the switch's DCP interface.

Switch (or Customer) Requirements for DCP Mode 3

Switch requirements depend on whether the systems are serving the same switch or are serving different switches. The INTUITY AUDIX system can be colocated on the same switch with an INTUITY AUDIX system and/or an AUDIX R1 system or with a DEFINITY AUDIX system R3.2 on a G3r switch.

Colocated Requirements

The switch must be equipped with a TN754 DCP circuit pack. The networking connection is from one DCP port to another (the INTUITY AUDIX system uses a DCP port for the network connection and the DEFINITY AUDIX system or AUDIX R1 system uses a DCP port).

Interlocation Requirements

For remote configurations, you need access to 64 Kbps public or private telephone network facilities; these should normally be a T1 carrier DS1 Interface set for Alternate Voice/Data [AVD]) or ISDN PRI. You need a DS1 or ISDN interface on the switch to connect to these network facilities.

System 75 R1V3 2.1 or later, Generic 1, Generic 2 (Universal Module), or Generic 3

The switch must have the following circuit packs:

- TN748C Tone Detector (System 75 requires a vintage 1 or vintage 3 circuit pack; Generic 1 and Generic 3 require vintage 3). Do not use the TN748B, TN748D vintage 1, or the TN756.



NOTE:

The TN748D vintage 1 board does not work for this application. Also, any existing TN748B tone detectors must be upgraded to TN748Cs.

- TN768, TN780, or TN2182 tone clocks must be used.
- TN727 Network Controller (System 75) or TN777 Network Controller (Generic 1 and Generic 3) is required for DS1.
- Circuit packs for DS1 and/or ISDN such as TN722 (DS1 on G1), TN767 (DS1 on G1, G3i, and G3r), or TN464 (DS1 or ISDN)

System 85 or Generic 2 (Traditional Module)

The switch must have the following circuit packs:

- SN253 Auxiliary Tone Plant (one in each module)
- SN255B or SN255C Tone Detector
- SN261B or SN261C Analog/Digital Facility Test Circuit

Switch Administration Requirements for DCP Mode 3

For remote connections, the DS1 facility connecting the two systems is translated on the switch as a trunk group (DS1 common carrier) with an access code.

This information is for a T1 carrier (DS1 Interface set for Alternate Voice/Data [AVD]). If Automatic Route Selection (ARS) or Automatic Alternate Routing (AAR) is being used by the switch to route the networked messages, verify the Bearer Capability Class of Service (BCCOS) on the pattern is set correctly for the data

rate being used and that the Facilities Restriction Level (FRL) on the DCP ports or the RS-232 ports is equal to or greater than that on the pattern and preference being used.

On System 75, G1, and G3 switches, all trunks being used to transmit 64-Kbps messages must be defined as `comm type avd` on the trunk group screen and the `span` must be defined as **common channel signaling**. ISDN trunk groups show a different `comm type` and, in addition, require a BCCOS value to be defined. See *Generalized Route Selection in G3 Feature Description*, 555-230-204, for more information on BCCOS.

Sample Administration for a Remote System

Figure 3-6 shows an example of the Digital Network Machine Administration window for calling a remote system using a data rate of 64 Kbps.

```
Digital Network Machine Administration

Machine Name: Boston          Connection Type: DCP MODE 3
Dial Str: 915554000
-----
Message Transmission Schedule (hh:mm, 00:00 - 23:59)
  1: start: 00:00      end: 23:59      interval:  :05
  2: start:  : :      end:  : :      interval:  : :
  3: start:  : :      end:  : :      interval:  : :

Data Rate: 64000           Password: *****
Channel:  _                Machine Type: INTUITY 4.0 or later
Send Multimedia Messages (e.g. FAX) ? : Y

HELP CHOICES PREV-FRM NEXT-FRM CANCEL CHG-KEYS
```

Figure 3-6. DCP Mode 3 Digital Network Machine Administration Example

EIA RS-232

INTUITY AUDIX digital networks can be implemented using a switched Electronic Industries Association (EIA) RS-232 connection. This section presents supported RS-232 configurations for INTUITY AUDIX digital networking. Use this method if both switches are not DCP switches or if you cannot connect the systems over a LAN or WAN.

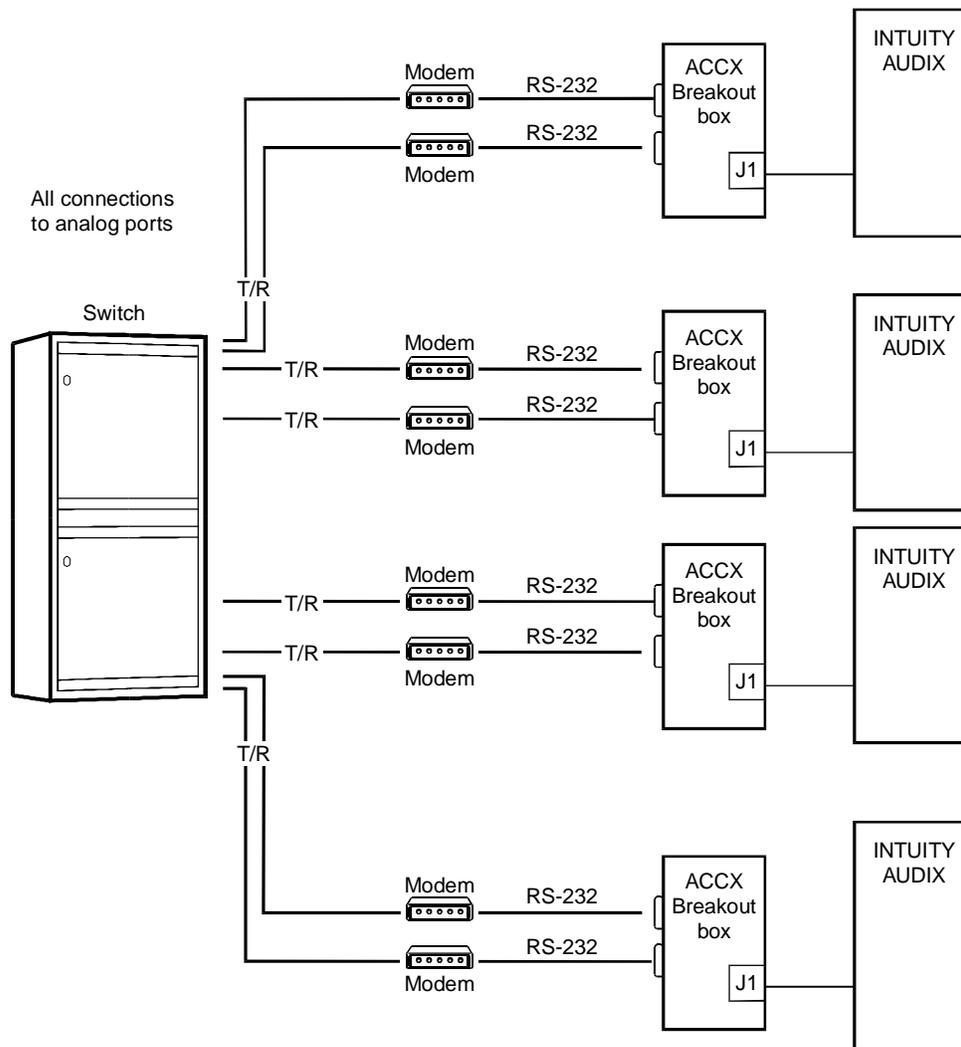
You can use this type of network connection when the systems to be networked are colocated (serving the same switch) or when they are in different locations. Two or more systems can be networked using RS-232. With this type of connection, speeds can be 9.6 or 19.2 Kbps. Speeds are limited by the modems used and by the type of public/private facility available for networking. You need modems for each INTUITY AUDIX channel to be switched.

Switched RS-232 Using Modems

Modems convert the RS-232 signal into an analog signal for transmission through the switch to a colocated INTUITY AUDIX system, DEFINITY AUDIX system, or AUDIX R1 system or out of the switch across public/private facilities to another switch.

Sample Configurations

Figure 3-7 shows switched access to RS-232 channels.



int_net4 CJL 041596

Figure 3-7. Switched RS-232 Network for a Single Switch

Figure 3-8 shows three INTUITY AUDIX systems serving switches at different locations.

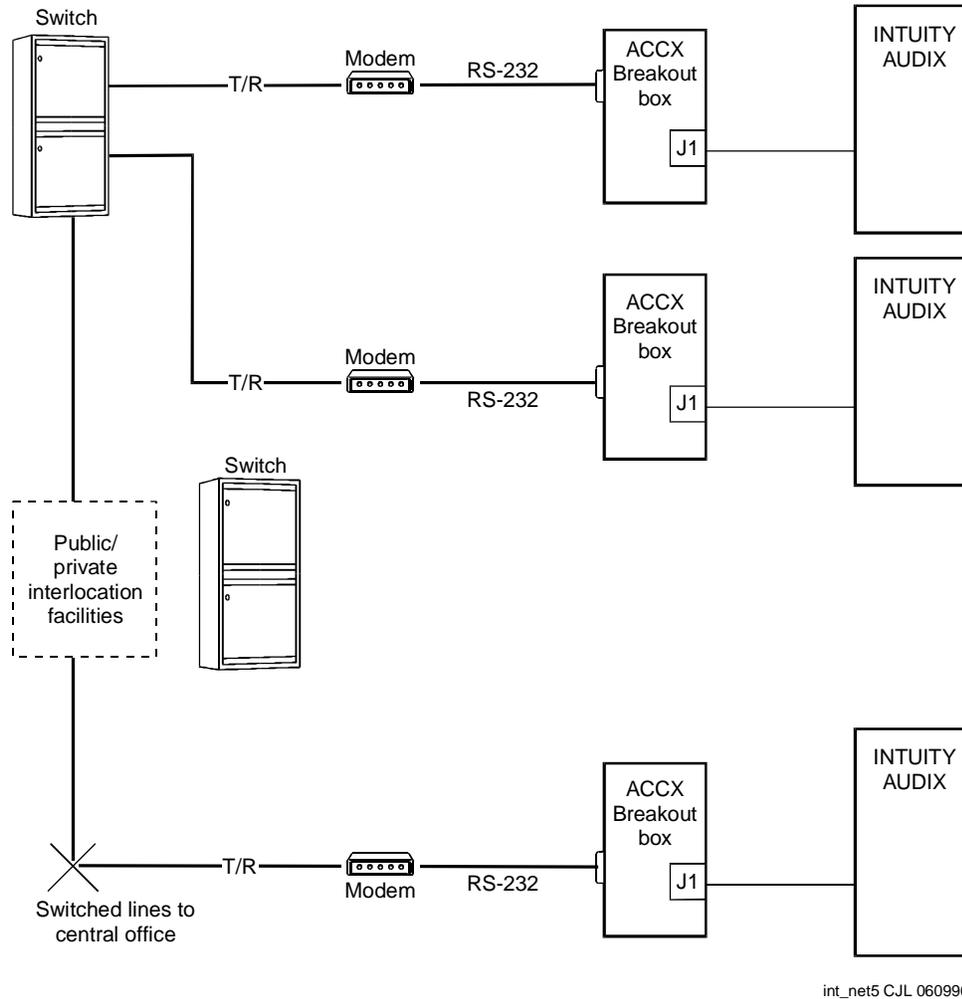


Figure 3-8. Switched RS-232 Network for Separate Locations

INTUITY AUDIX System Requirements for Switched RS-232 Using Modems

The INTUITY AUDIX system must have an ACCX card. The AUDIX Networking Breakout cable (H600-331, Group 2) is required between machines.

Each AUDIX R1 system must be running R1V5 or later software and must be equipped with a TN539B ACCE circuit pack.

Switch (or Customer) Requirements for Switched RS-232 Using Modems

Each switched RS-232 channel requires one of the following modems:

- Paradyne Comsphere 3820
- Paradyne Comsphere 3830
- Paradyne Comsphere 3910 (non-United States)

The modem requires a connection through one of the switch's analog ports or can connect directly to a central office line. Switch analog port circuit packs are:

- System 75, Generic 1, and Generic 3: TN742 or TN746B analog line circuit
- System 85 and Generic 2 traditional module: SN222, SN228, or SN228B analog line circuit
- System 85 and Generic 2 universal module: TN742 or TN746B analog line circuit
- System 25: ZTN78, TN742, or TN746B analog line circuit



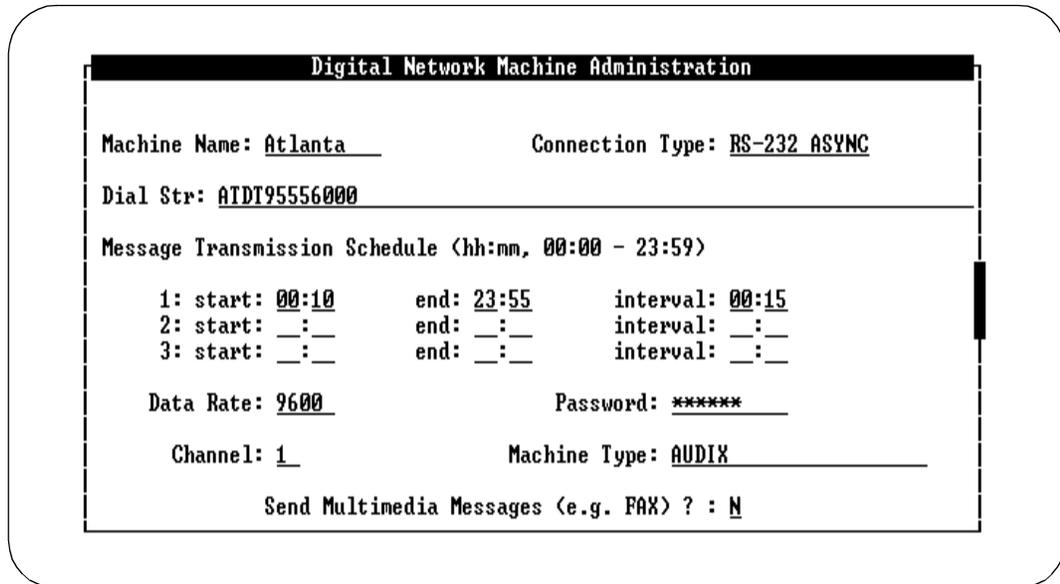
NOTE:

System 25 is only supported for Release 3.0 systems and does not support DCS.

If the modems must be located greater than 5.0 feet (1.524 meters) from the INTUITY AUDIX system, an M25A RS-232 extender cable is required for each. The modem must be within 50 feet (15.24 meters) of the INTUITY AUDIX system. The tip/ring circuit should be engineered by a switch representative.

Sample Administration for a Remote System

Figure 3-9 shows an example of the Digital Network Machine Administration window for calling a remote system using a data rate of 9.6 Kbps.



```
Digital Network Machine Administration
Machine Name: Atlanta          Connection Type: RS-232 ASYNC
Dial Str: ATDT95556000
Message Transmission Schedule (hh:mm, 00:00 - 23:59)
  1: start: 00:10      end: 23:55      interval: 00:15
  2: start: _:_       end: _:_       interval: _:_
  3: start: _:_       end: _:_       interval: _:_
Data Rate: 9600             Password: *****
Channel: 1                 Machine Type: AUDIX
Send Multimedia Messages (e.g. FAX) ? : N
```

Figure 3-9. RS-232 Digital Network Machine Administration Example

TCP/IP

INTUITY AUDIX digital networks can be implemented using a TCP/IP connection to a LAN/wide area network (WAN). INTUITY AUDIX Release 4 or later is required for all systems connected to the LAN/WAN. This section presents supported TCP/IP configurations for INTUITY AUDIX digital networking. This type of connection can be used for both dedicated and remote connections.

 **NOTE:**

Use TCP/IP for directly connecting two machines.

Advantages

The advantages of a TCP/IP connection are:

- You can use existing LAN/WAN facilities.
- The connectivity is less complicated than with other types, because there is no need for switch lines and trunks.
- There is higher throughput over a LAN than with DCP or RS-232. One TCP/IP channel can provide approximately ten times the capacity of an existing DCP Mode 3 (64 Kbps) channel.
- Communications costs are reduced when sending messages over a LAN.
- The INTUITY AUDIX system can transmit all types of multimedia messages over a LAN.
- The delivery time is reduced for messages and updates.

Throughput

TCP/IP provides much greater throughput than DCP or RS-232.

- One TCP/IP channel can be as high as 10 times the capacity of a DCP Mode 3 channel. LAN throughput varies depending on the LAN.
- Four TCP/IP channels provide throughput equivalent to 25 DCP, 64 Kbps channels (1.16 Mbps).

However, throughput can vary widely.

- Multiple active channels reduce throughput.
- Higher LAN traffic decreases throughput.
- WAN throughputs can be much less, such as equivalent to DCP 56 Kbps (slow WAN).

Sample Configurations

Figure 3-10 shows two INTUITY AUDIX systems connected using TCP/IP over a LAN.

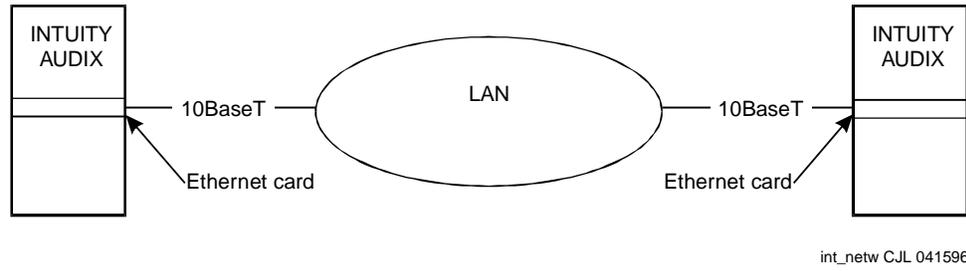


Figure 3-10. INTUITY AUDIX Network Over a LAN

Figure 3-11 shows two INTUITY AUDIX systems directly connected with a dedicated TCP/IP connection using thin ethernet. Use TCP/IP to directly connect INTUITY AUDIX systems.

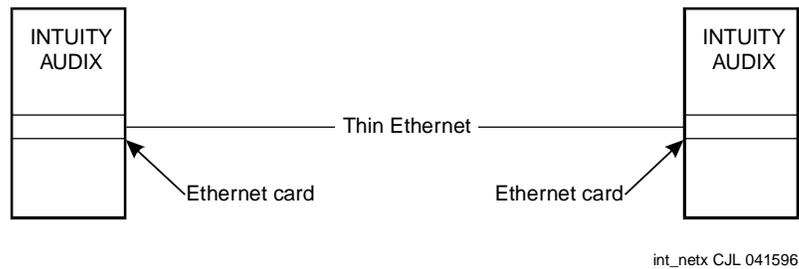
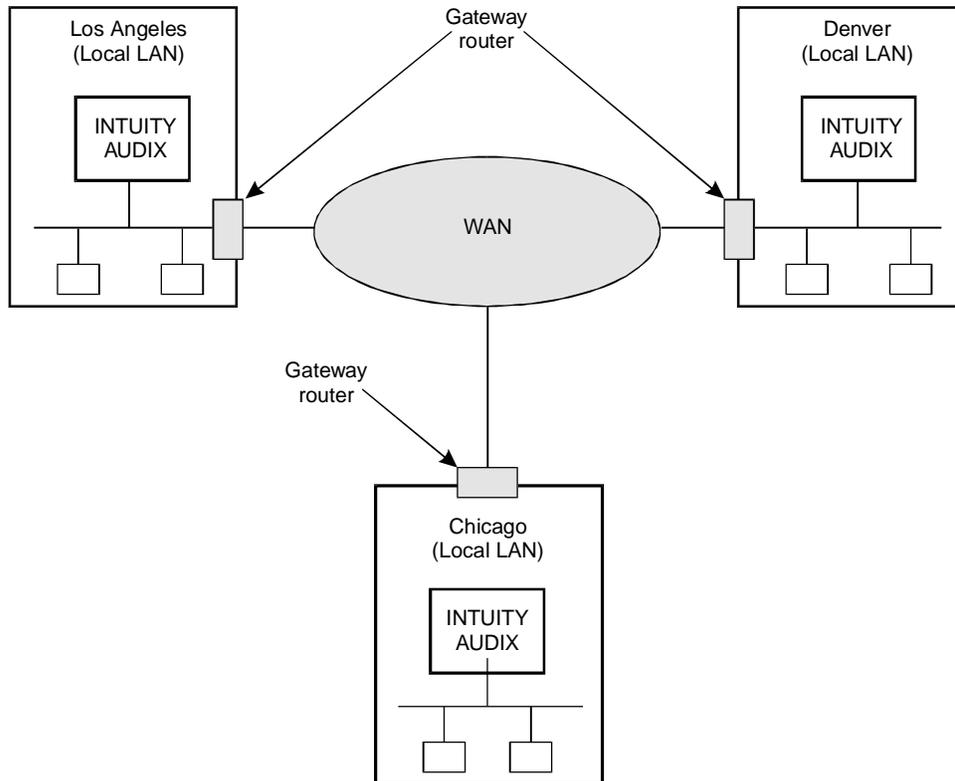


Figure 3-11. Dedicated TCP/IP Network

Figure 3-12 shows three INTUITY AUDIX systems connected over a WAN.



int_nety C.JL 041596

Figure 3-12. INTUITY AUDIX Network Over a WAN

Customer Requirements for TCP/IP

The customer provides and maintains the LAN. The demarcation point for Lucent Technologies is where the Ethernet card connects to the LAN.

There are no switch requirements since the switch is not involved when the INTUITY AUDIX systems are connected over a LAN.

Sample Administration for a Remote System

Figure 3-13 shows an example of the Digital Network Machine Administration window for calling a remote system using TCP/IP.

```

Digital Network Machine Administration
Machine Name: Miami           Connection Type: TCP/IP
Dial Str: XXX.X.XX.XXX
-----
Message Transmission Schedule (hh:mm, 00:00 - 23:59)
  1: start: 00:05      end: 23:55      interval: 00:05
  2: start:   :        end:   :        interval:   :  
  3: start:   :        end:   :        interval:   :  
Data Rate:                  Password: *****
Channel:  1           Machine Type: INTUITY 4.0 or later
Send Multimedia Messages (e.g. FAX) ? : Y
-----
HELP CHOICES PREU-FRM NEXT-FRM CANCEL CHG-KEYS
    
```

Figure 3-13. TCP/IP Digital Network Machine Administration Example

Mixtures of Connection Types

This section shows an example of a possible configuration using more than one type of connection on the same INTUITY AUDIX system. The INTUITY AUDIX system can support all types of networking connections (DCP Mode 1, DCP Mode 3, RS-232, and TCP/IP).

⇒ NOTE:

Both endpoints have to be the same connection type and data rate.

For example, an INTUITY AUDIX system could use the following combination of network connections:

- DCP Mode 3 (64 Kbps) connection to another INTUITY AUDIX system, DEFINITY AUDIX system, or AUDIX R1 system when both switches are DCP switches. A 64 Kbps facility is needed for the connection.
- TCP/IP connection to a LAN for connecting to another INTUITY AUDIX Release 3 or later.

- RS-232 9.6-Kbps connection over the public network to another INTUITY AUDIX system, DEFINITY AUDIX system, or AUDIX R1 system. This is the connection type used when:
 - Both switches are not DCP switches.
 - A facility that supports a higher data rate is not available.
 - Low traffic is expected between the AUDIX systems.
 - A LAN or WAN cannot be used.

 **NOTE:**

A LAN is the preferred connection type if available. If a LAN is not available, high-speed (DCP Mode 1/ DCP Mode 3) connectivity is the preferred connection type if high-speed facilities are available between locations. The design center will determine the best connection type(s) for your network.

Considerations

Keep the following in mind:

- To perform a network looparound test, you must have two ports of the same connection type. One port does not allow proper testing. If the connection type is RS-232, both ports must have modems to perform the test.
- The port or hunt group is required to be Direct Inward Dial (DID) for remote testing.

Sample Networking Channel Administration Window

Figure 3-14 shows an example of the Networking Channel Administration window for an INTUITY AUDIX system that uses several types of networking to other AUDIX systems.

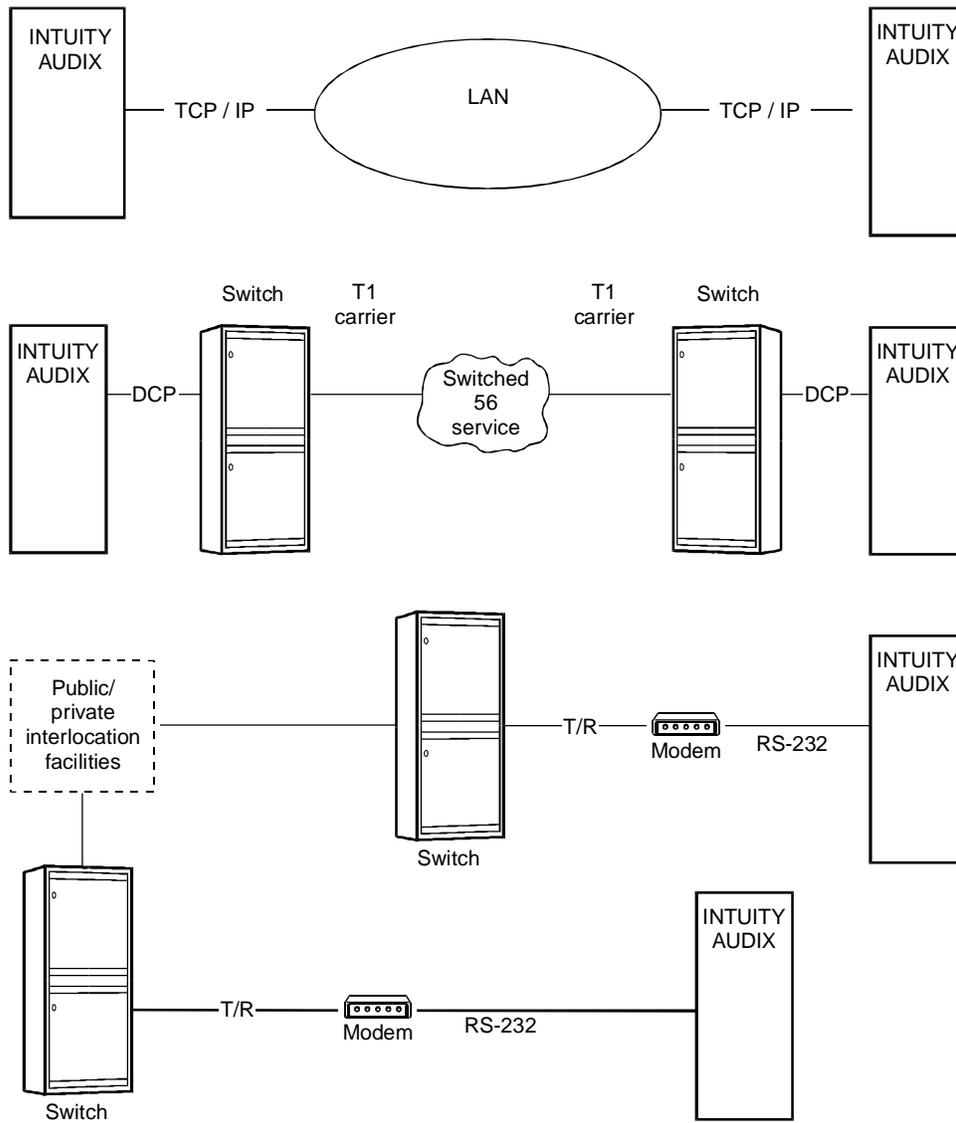
Networking Administration					
Networking Channel Administration					
CHANNEL	TYPE	RATE	STATUS	MACHINE	ACTIVITY
-----	-----	----	-----	-----	-----
1	DCP		IDLE		
2	DCP		IDLE		
3	RS-232 ASYNC		IDLE		
4	RS-232 ASYNC	19200	IN USE	cbveitt	
5	TCP/IP		IDLE		
6	TCP/IP		IDLE		
7	TCP/IP		NOT EQUIPPED		
8	TCP/IP		NOT EQUIPPED		
9	DCP		NOT EQUIPPED		
10	DCP		NOT EQUIPPED		
11	DCP		NOT EQUIPPED		
12	DCP		NOT EQUIPPED		

HELP PREUPAGE NEXTPAGE PREU-FRM NEXT-FRM CANCEL CHG-KEYS

Figure 3-14. Example of a Networking Channel Administration Window Showing a Mixture of Connection Types

Sample Configuration

Figure 3-15 shows a TCP/IP connection to a LAN, a DCP Mode 1 connection between DCP switches, and an RS-232 connection between switches and over public/private interlocation facilities.



int_netV CJL 060896

Figure 3-15. Multiple Connection Types at the Same INTUITY AUDIX System

Considerations for Choosing a Connection Type

The following are some considerations when choosing a connection type between two AUDIX systems.

- Whether or not you have a LAN/WAN. TCP/IP connections to a LAN provide the highest throughput. INTUITY AUDIX Release 3 and later can network over a LAN.
- The kinds of switches to which your AUDIX systems connect (DCP switches [System 75, System 85, DEFINITY Generic 1, Generic 2, and Generic 3] or another type of switch). If you do not have a LAN/WAN, DCP Mode 3 at 64 Kbps provides the next highest throughput. If you do not have DCP switches at both ends of the connections, TCP/IP to a LAN or RS-232 must be used.
- The type of transmission facilities available between AUDIX systems (for example: 64 Kbps, 56 Kbps, public network at 9.6 Kbps, or other services that operate at 19.2 Kbps [Software Defined Network [SDN]). If you anticipate high traffic between locations, you may want to consider a facility that provides higher throughput.
- The amount of traffic expected between systems

The design center designs all networks and considers such things as present facilities and anticipated traffic when designing or redesigning your network.

Overview

This chapter contains procedures for updating network administration information.

This chapter is organized as follows:

- Initial Administration Tasks
- Viewing the Feature Options Window
- Changing the Number of Administered Remote Users
- Adding or Changing TCP/IP (Transmission Control Protocol/Internet Protocol)
- Administering Network Channels
- Changing Local Machine Information
- Adding a Remote Machine or Changing Remote Machine Information
- Renaming the Local and Remote Machines
- Deleting Remote Machines
- Listing Address Ranges
- Listing Remote Extensions
- Viewing Machine Information

Purpose

This chapter provides the information you need to administer digital networking after the initial administration has been completed. It also contains a list of initial administration tasks and shows all of the digital networking screens with a description of each screen and instructions for entering data into the screen.

Initial Administration Tasks

The following tasks need to be performed as part of initial administration. Figure 4-1 shows the tasks in sequential order. Some of the tasks are performed at installation. Confirm that each of the tasks has been performed; and, if not, complete the task. The design center provides the information for completing the administration. Ensure that you have design center specifications for TCP/IP, network channels, the local machine, and all remote machines. The last column of the table shows the chapter where the task is described.

Table 4-1. Initial Administration Tasks

Task	Purpose	Screen(s)/ Window(s)/ Command(s)	Chapter
1. Complete switch administration (normally done at installation)	Define the switch to work with INTUITY AUDIX digital networking DCP and RS-232 ports.	Switch screens	Appendix A
2. Verify adequate number of administered remote users (normally done at installation)	Define administered remote users to be equal to or greater than number of all mailboxes on all remote systems.	System Parameters Limits	Chapter 4
3. Administer TCP/IP machine name and addresses (normally done by technician at installation)	Define the TCP/IP information for the LAN card.	TCP/IP Administration	
4. Administer network channels (normally done by technician at installation)	Enable the channels to create a communication link between the ACCX card and the switch or the LAN card and the LAN.	Networking Channel Administration	
5. Change the local machine	Define local machine information for digital networking.	Local Machine Administration; Machine Profile	
6. Add or change a remote machine (normally done by technician at installation)	Define for the local machine information about each remote machine, including the machine name, password, connection type, and dial string.	Digital Network Machine Administration; Machine Profile	

Continued on next page

Table 4-1. Initial Administration Tasks — Continued

Task	Purpose	Screen(s)/ Window(s)/ Command(s)	Chapter
7. Administer the INTUITY AUDIX system on the remote machines	Define for each remote machine information about the local machine.	See remote machine documentation	none
8. Set up remote updates	Define remote update capabilities for the local machine and remote machines.	Machine Profile	Chapter 5
9. Perform a full remote update	Manually run a remote update for each remote machine to bring the network up-to-date immediately.	get remote update command (no screen)	
10. Set automatic deletion of nonadministered remote users	Tell the system to delete non-administered remote users automatically.	System Parameters Features	
11. View remote extensions	Check that remote users were added to the local database.	List Remote Extensions	
12. Record remote machine names	Record the names of remote systems so that local users hear voiced confirmations when addressing messages to users on those remote systems.	Not applicable; use the telephone.	Chapter 4
13. Administer remote users	Add, delete, and change users manually when not adding all remote users or when nonadministered users exist.	Remote Subscriber	Chapter 5
14. Record remote user names (for users not added by a full remote update)	Record the names of remote users so that local users hear voiced confirmations when addressing messages to remote users.	Not applicable; use the telephone.	

Order of Initial Administration Tasks in this Chapter

The following tasks in this chapter are presented in the order you complete them during initial administration:

1. Viewing the Feature Options Window
2. Changing the Number of Administered Remote Users
3. Adding or Changing TCP/IP
4. Administering Network Channels
5. Changing Local Machine Information
6. Adding a Remote Machine

Viewing the Feature Options Window

The Feature Options window has several fields that pertain to digital networking. This window is display only. View this window to see the purchased options for digital networking. The Feature Options window can be changed only by certified Lucent Technologies personnel.

Accessing the Feature Options Window

To display the Feature Options window, perform the following tasks:

1. Start at the main menu specific to your version of Lucent INTUITY, either Release 3 or Release 4 (Figure 4-1)

Lucent INTUITY Administration menu for Release 3

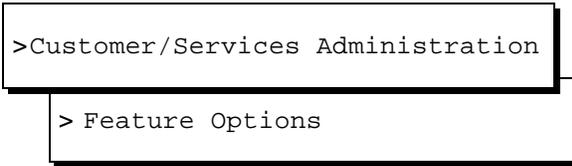
```
INTUITY (TM) Administration
>AUDIX Administration
Call Accounting System
Customer/Services Administration
Networking Administration
Switch Administration
Switch Interface Administration
Upgrade
Voice System Administration
```

Lucent INTUITY Main Menu for Release 4

```
INTUITY (TM) Main Menu
AUDIX Administration
Customer/Services Administration
Networking Administration
Switch Interface Administration
Upgrade
Voice System Administration
```

Figure 4-1. Lucent INTUITY Main Menu for Release 3 and Release 4

2. Select:



The system displays the Feature Options window (Figure 4-2). See Table 4-2 for a description of the fields that pertain to digital networking.

Feature Options (Read Only)		
Feature Option	Current	Maximum
AMIS Analog Networking	ON	N/A
DCS	OFF	N/A
Fax Creation	ON	N/A
High speed digital ports	2	12
Low speed digital ports	2	12
Max Number of IMAPI Sessions	64	128
Multilingual	OFF	N/A
SCSI Disk Mirroring	OFF	N/A
TCP/IP Administration	ON	N/A
TCPIP digital ports	4	12
Text-to-Speech Sessions	4	4
Trusted Servers	32	64
hours_of_speech	230	403
voice_ports	36	36

Figure 4-2. Feature Options Window for Release 4

⇒ NOTE:

Figure 4-2 illustrates the Feature Options window for Lucent INTUITY Release 4. The Feature Options window for Release 3 looks similar, but does not contain as many options.

Table 4-2. Feature Options Window Description for Fields that Pertain to Digital Networking

Feature	Current Settings	Maximum
High-speed digital ports	Current number of high-speed INTUITY AUDIX digital networking ports enabled. High speed is DCP Mode 1 (56 Kbps) and DCP Mode 3 (64 Kbps).	<ul style="list-style-type: none"> ■ MAP/100 with TCP/IP 12 ■ MAP/40 8 ■ MAP/40s 4 ■ MAP/5 4
Low-speed digital ports	Current number of low-speed INTUITY AUDIX digital networking ports enabled. Low speed is RS-232 9.6 Kbps or 19.2 Kbps.	12
TCP/IP Administration	If using TCP/IP digital networking, TCP/IP must be ON.	N/A
TCPIP digital ports	Current number of enabled TCP/IP digital ports.	4

3. Contact your Lucent Technologies representative if you determine you need more than the enabled number of ports for a particular type of networking or if you want to add TCP/IP networking.



NOTE:

If TCP/IP Administration is ON, the Networking Main Menu includes TCP/IP Administration and the Customer/Services Administration:Diagnosics Menu includes TCP/IP Diagnostics. If TCP/IP Administration is OFF, these items do not appear in the menus.

Changing the Number of Administered Remote Users

The number of administered remote users must be equal to or greater than the total number of mailboxes on all remote systems with which this local system networks.

To change the number of administered remote users, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
>AUDIX Administration
```

The system displays a blank AUDIX administration screen.

2. Enter **change system-parameters limits** at the `enter` command prompt.

The system displays the System Parameters Limits screen (Figure 4-3).

**NOTE:**

To check the number of administered remote users, view the Administered Remote field of the System Parameters Limits screen.

```
drmid10      Active      Alarms: M wA      Logins: 4
change system-parameters limits      Page 1 of 1
          SYSTEM-PARAMETERS LIMITS

MESSAGE LIMITS
Message Lengths, Maximum (seconds): 1200  Minimum (tenths of seconds): 10
Messages, Total In All Mailboxes: 50000  Awaiting Delivery: 5000

ADMINISTRATION LIMITS
Subscribers, Local: 10000  Administered Remote: 50000
Lists, Total Entries: 50000  Lists/Subscriber: 100  Recipients/List: 250

enter command: change system-parameters limits
```

Figure 4-3. System Parameters Limits Screen

3. Enter the *number of remote users* in the Administered Remote field.
4. Press **(ENTER)** (F3) to save the information in the system database.
The cursor returns to the command line, and the system displays the message `Command Successfully Completed`.
5. Enter an administrative command at the `enter` command prompt or **exit** to leave AUDIX Administration.

Adding or Changing TCP/IP

TCP/IP (Transmission Control Protocol/Internet Protocol) administration must be completed if your INTUITY AUDIX system uses Lucent INTUITY Message Manager, trusted servers, or TCP/IP digital networking. TCP/IP administration assigns TCP/IP address parameters to the INTUITY AUDIX system. These address parameters identify the INTUITY AUDIX system on a local area network so other nodes on the network can interact with the system. TCP/IP is administered once, regardless of how many applications require the TCP/IP addresses.

Before You Begin

You will need to know the:

- Network IP address
- Host Identifier (AUDIX server name)
- Subnet mask
- Gateway Identifier (ID) to administer TCP/IP.

Your PC or LAN/Network system administrator should have this information.

To add or change TCP/IP administration, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
> Networking Administration
> TCP/IP Administration
```

The system displays the TCP/IP Administration window (Figure 4-4).

TCP/IP Administration	
UNIX Machine Name:	<u>unit111</u>
IP Address:	<u>XXX.X.XX.XXX</u>
Subnet Mask:	<u>255.255.255.0</u>
Default Gateway IP Address:	<u>XXX.X.XX.XXX</u>

Figure 4-4. TCP/IP Administration Window

2. Complete the fields in this window using the information provided in Table 4-3.

Table 4-3. Field Definitions; TCP/IP Administration Window

Field	Procedure/Description
UNIX Machine Name <u>Valid Input:</u> 1 – 10 alphanumeric characters	Enter the <i>AUDIX server name</i> . Your PC or LAN/Network system administrator should have this information. <i>The UNIX Machine Name (AUDIX server name) must be the same as the local machine name specified on the Local Machine Administration window and must adhere to the following rules:</i> <ul style="list-style-type: none"> ■ The machine name cannot contain blank (embedded) spaces. For example, denver 1 is not allowed, but denver_1 is allowed. ■ This is a case-sensitive field. Upper-case letters must be entered as upper case, and lower-case letters as lower case. ■ Hyphen (-) are allowed ■ Underscore (_) are allowed ■ The machine name cannot start with a number.
IP Address <u>Valid Input:</u> see description at right	Enter the <i>IP address</i> . This is the TCP/IP address of the INTUITY AUDIX system. The address must be in the following format: NNN.NNN.NNN.XXX where NNN is a number from 0 – 255 and XXX is a number from 1 – 254
Subnet Mask <u>Valid Input:</u> see description at right	This is an optional field. Enter the <i>subnet mask</i> . The subnet mask is used to determine which bytes of the IP address specify the network and host addresses. If you do not enter a subnet mask, the system uses a default of 255.255.0.0 NOTE: The default value may conflict with your LAN configuration. Check with your PC/LAN system administrator to ensure compatibility. The subnet mask must be in the following format: NNN.NNN.NNN.NNN where NNN is a number from 0 – 255.
Default Gateway IP Address <u>Valid Input:</u> see description at right	Enter the <i>default gateway IP address</i> . The default gateway IP address is the address of the gateway router that serves to connect to addresses on other LANs. Leave this field blank if the INTUITY AUDIX system will be communicating only with other Lucent INTUITIES on the same LAN. The address must be in the following format: NNN.NNN.NNN.XXX where NNN is a number from 0 – 255 and XXX is a number from 1 – 254

3. Press **SAVE** (F3) to save the TCP/IP administration values.
4. Press **CHG-KEYS** (F8).

The system displays the alternate set of function keys.

5. Press **BRD CNFG** (F2).

The system displays the Ethernet Board Configuration window (Figure 4-5 on page 4-11).

```
TCP/IP Administration
UNIX Machine Name: unit111
IP Address: XXX.X.XX.XXX
Subnet Mask: 255.255.255.0
Default Gateway IP Address: XXX.X.XX.XXX

Ethernet Board Configuration
Network Interface Type: _____

Enter the Interface Type, use <CHOICES> for options
HELP CHOICES SAVE PREV-FRM NEXT-FRM CANCEL CHG-KEYS
```

Figure 4-5. Ethernet Board Configuration Window

6. Press **CHOICES** (F2).

The system displays the Network Interface Types options (Figure 4-6). See "LAN Card" on page 2-12 for a description of the network interface types.

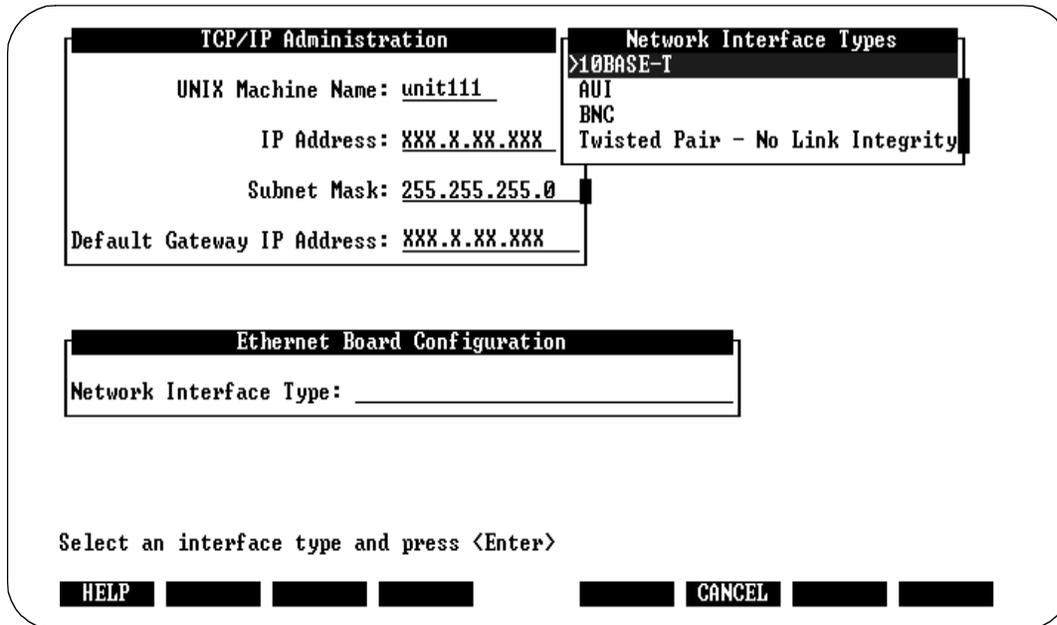


Figure 4-6. Network Interface Types for Ethernet Board Configuration

7. Select the *network interface type* to be used on this system.
8. Press **SAVE** (F3) to save the Ethernet Board configuration.
9. Press **CANCEL** (F6) repeatedly to return to the Main Menu.



NOTE:

You must reboot the Lucent INTUITY system for changes in UNIX Machine Name, IP Address, Subnet Mask, and Default Gateway IP Address to take effect. See the "Common Maintenance" section of the administration guide for your release of INTUITY AUDIX for the reboot procedure.

Administering Network Channels

You must enable the network channels before the local INTUITY AUDIX system can exchange voice messages over the digital network. Enabling the channels creates a communication link between the ACCX card and the switch or between the LAN card and the local area network (LAN) and/or wide area network (WAN). Use the following instructions to add or change networking channels.

⇒ NOTE:

Before you can complete the administration in this section, the digital networking features must be administered by Lucent Technologies on the Feature Options screen. See "Viewing the Feature Options Window" on page 4-5. If the Feature Options screen is changed, you must restart the INTUITY AUDIX system for the feature options to take effect. See the "Restarting the Voice Mail System" section of the administration guide for your release of INTUITY AUDIX for procedures. The command is **reset voice-mail restart**.

Accessing the Networking Channel Administration Window

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
> Networking Administration
```

```
> Networking Channel Administration
```

The system displays the Networking Channel Administration window (Figure 4-7 on page 4-14). This window allows you to configure channels as DCP, TCP/IP, or RS-232 synchronous or asynchronous.

⇒ NOTE:

The window shows all 12 possible channels available on your system, whether you have purchased the right-to-use all 12 channels or not.

Networking Administration						
Networking Channel Administration						
CHANNEL	TYPE	RATE	STATUS	MACHINE	ACTIVITY	
1	DCP		IDLE			
2	DCP		IDLE			
3	RS-232 ASYNC		IDLE			
4	RS-232 ASYNC	19200	IN USE	cbveitt		
5	TCP/IP		IDLE			
6	TCP/IP		IDLE			
7	TCP/IP		NOT EQUIPPED			
8	TCP/IP		NOT EQUIPPED			
9	DCP		NOT EQUIPPED			
10	DCP		NOT EQUIPPED			
11	DCP		NOT EQUIPPED			
12	DCP		NOT EQUIPPED			

HELP PREUPAGE NEXTPAGE PREU-FRM NEXT-FRM CANCEL CHG-KEYS

Figure 4-7. Networking Channel Administration Window

Table 4-4 describes the fields in this window.

Table 4-4. Networking Channel Administration Window Description

Field	Description
Channel	This field shows the number of the channel on the ACCX or LAN card.
Type	This field shows whether the channel is DCP, RS-232 synchronous, RS-232 asynchronous, or TCP/IP.
Rate	This field provides the speed at which the channel communicates when in use (9600, 19200, 56000, 64000 bps). TCP/IP channels show a rate of 0 when in use.
Status	This field provides an explanation of the current state of the channel. Status values are: <ul style="list-style-type: none"> ■ not equipped – channel has not been administered ■ equipped – channel has been administered but the system has not been rebooted ■ idle – channel is ready to accept or make a call ■ in use – a call is in progress ■ busy out – maintenance has busied out the channel ■ down – the channel is not working ■ transition – a call is in the process of going through

Continued on next page

Table 4-4. Networking Channel Administration Window Description — Continued

Field	Description
Machine	This field shows the name of the remote machine to which this local machine is connected when in use.
Activity	<p>This field shows the activity taking place on the channel and the remote machine name. Activities are:</p> <ul style="list-style-type: none"> ■ voice mail in ■ voice mail out ■ update in ■ update out ■ admin in ■ admin out ■ status in ■ status out

2. Continue with the procedures in the next section, as appropriate:
 - Enabling or Changing the Networking Ports, including:
 - "Configuring DCP Channels" on page 4-16
 - "Configuring RS-232 Channels" on page 4-17
 - "Configuring TCP/IP Channels" on page 4-20

Enabling or Changing the Networking Ports

DCP channels must exist in pairs. If you assign channel 1 as DCP, you also must assign channel 2 as DCP, whether you have purchased or equipped the channel. For example, if you configure channel 1 as a DCP channel, the system will not let you assign channel 2 as RS-232. You can only assign the channel as DCP.

⇒ NOTE:

If one or more TCP/IP channels are equipped, then a maximum of 8 DCP/RS-232 channels are possible.

TCP/IP channels always exist in groups of 4 (channels 1 through 4, 5 through 8, or 9 through 12). If you administer one TCP/IP channel, the remaining 3 channels in the group become TCP/IP unequipped or TCP/IP equipped if purchased.

Use the following procedures to enable or change the networking ports.

- To enable a DCP channel, continue with "Configuring DCP Channels"
- To enable an RS-232 channel, see page 4-17
- To enable a TCP/IP channel, see page 4-20

Configuring DCP Channels

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
> Networking Administration
> Networking Channel
```

The system displays the Networking Channel Administration window (Figure 4-7 on page 4-14).

2. Press (CHG-KEYS) (F8).

The system displays the alternate set of function keys.

3. Press (CONFIG) (F2).

The system displays the Networking Channel Configuration menu (Figure 4-8 on page 4-16).

```
Networking Channel Configuration
DCP Channel Configuration
RS232 Channel Configuration
TCP Channel Configuration
```

Figure 4-8. Networking Channel Configuration Menu

4. Select:

```
> DCP Channel Configuration
```

The system displays the DCP Channel Configuration window (Figure 4-9).

```
DCP Channel Configuration
Channel No.: ___
Equipped: _
```

Figure 4-9. DCP Channel Configuration Window

5. Enter the *channel number you would like to enable as a DCP channel* in the Channel No. field.
6. Enter **y** in the equipped field.
7. Press **ENTER** (F3).

The system saves the information and refreshes the Networking Channel Administration window (Figure 4-7). The channel number you entered now displays as DCP. The system displays the message:

```
Press <CANCEL> for Channel Hardware Configuration
```

8. Press **CANCEL**.

The system displays the Networking Channel Configuration window (Figure 4-10).

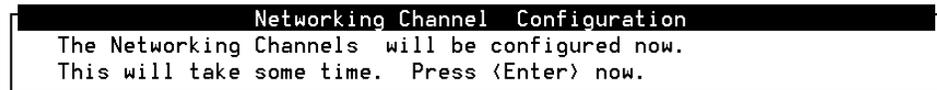


Figure 4-10. Networking Channel Configuration Window

9. Repeat step 2 through step 8 for each channel you need to enable as a DCP channel.
10. Press **ENTER** to configure the networking channels and reset the ACCX card. The configuration process takes several minutes.

The system processes the channel information you entered and changes the hardware configuration. When the process finishes, the system displays the Networking Administration menu.

11. Press **CANCEL** (F6) repeatedly to return to the main menu specific to your release.

Configuring RS-232 Channels

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
> Networking Administration
```

```
> Networking Channel Administration
```

The system displays the Networking Channel Administration window (Figure 4-7 on page 4-14).

2. Press **CHG-KEYS** (F8).

The system displays the alternate set of function keys.

3. Press `CONFIG` (F2).

The system displays the Networking Channel Configuration menu (Figure 4-11).



Figure 4-11. Networking Channel Configuration Menu

4. Select:



The system displays the RS-232 Channel Configuration window (Figure 4-12).

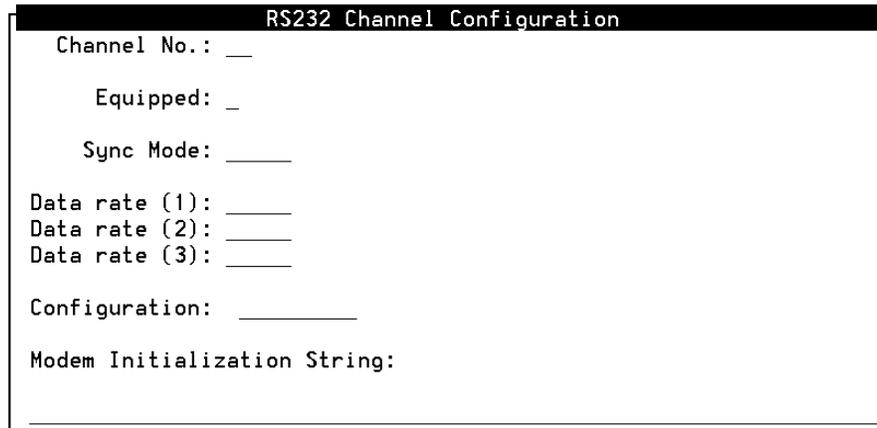


Figure 4-12. RS-232 Channel Configuration Window

5. Enter the *channel number* you would like to enable as an RS-232 channel in the Channel No. field.
6. Enter **y** in the Equipped field.
7. In the Sync Mode field, press `CHOICES` (F2).
8. Select `ASync` for asynchronous. (Synchronous is not supported.)

9. Enter the *data rate for the channel* in the `Date Rate (1)` field.

The `Data Rate` field and the `Sync Mode` field are connected. If you enter **ASYNC**, the `Data Rate (1)` field defaults to 9600. You can change the data rate in the field to 19200. (DDD is 9600 bps. SDDN is 19200 bps for example.) Use `CHOICES` (F2) to view and select a valid data rate.

You can assign multiple data rates to the channel by entering another data rate in the `Data Rate (2)`. Assign multiple data rates when the channel must communicate with different remote machines that have different data rates. For example, if you are connecting to a remote machine that uses RS-232 async at 19.2 Kbps and a second remote machine that uses RS-232 async at 9.6 Kbps, enter **19200** for `Data Rate (1)` and **9600** for `Data Rate (2)`.

10. Enter **SWITCHED** in the `Configuration` field.

Switched refers to a channel that connects to and communicates through the switch. Switched is the default value. *Dedicated* refers to a channel that is directly connected to a remote machine. Dedicated connections are not supported for RS-232.

11. Enter the *initialization string for the modem* in the `Modem Initialization String` field.

Use the following modem initialization string for 9600 bps asynchronous operation on the Paradyne Comsphere 3820 modem. Use the same string for the modem at the called system.

```
at&f0&d2m0\n1\q3s0=1s2=128s41-3y0&w0
```

Use the following modem initialization string for 9600 bps asynchronous operation on the Paradyne Comsphere 3830 modem.

```
at&f0&d1m0\n5\q3s0=1s2=128s41-3y0&w0
```

The design center provides the modem initialization string for the Paradyne Comsphere 3820 modem (used in the United States) and the Paradyne Comsphere 3910 modem (used in the non-United States) as part of the design center specification.

The modem initialization string is the character string that the ACCX card sends to initialize the modem connected to the RS-232 channel. You can enter a maximum of 65 printable ASCII characters, although not all modems accept that many characters. Most modems do not distinguish between upper- and lower-case letters.

12. Press `SAVE` (F3) to enter the information.

The system saves the information and refreshes the Networking Channel Administration window (Figure 4-7 on page 4-14). The channel number you entered now displays as RS-232. The system displays the message:

```
Press <CANCEL> for Channel Hardware Configuration
```

13. Press **CANCEL**.

The system displays the Networking Channel Configuration window (Figure 4-16).

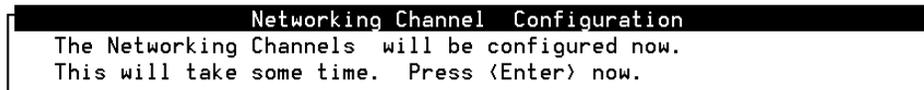


Figure 4-13. Networking Channel Configuration Window

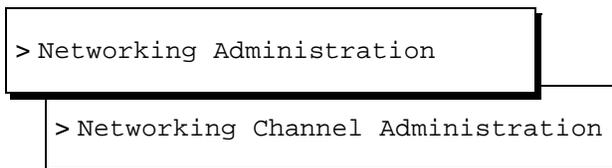
14. Repeat step 2 through step 12 for each channel you need to enable as an RS-232 channel.
15. Press **ENTER** to configure the networking channels and reset the ACCX card. The configuration process takes several minutes.

The system processes the channel information you entered and changes the hardware configuration. When the process finishes, the system displays the Networking Administration menu.

16. Press **CANCEL** (F6) repeatedly to return to the main menu specific to your release.

Configuring TCP/IP Channels

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:



The system displays the Networking Channel Administration window (Figure 4-7 on page 4-14).

2. Press **CHG-KEYS** (F8).

The system displays the alternate set of function keys.

3. Press **CONFIG** (F2).

The system displays the Networking Channel Configuration menu (Figure 4-14).



Figure 4-14. Networking Channel Configuration Menu

4. Select:

A screenshot of a terminal window showing the selected menu item ">TCP Channel Configuration". The text is enclosed in a rectangular box.

The system displays the TCP Channel Configuration window (Figure 4-15).

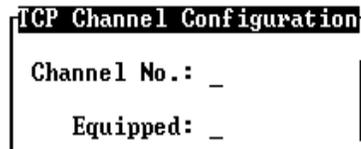


Figure 4-15. TCP Channel Configuration Window

5. Enter the *channel number* you would like to enable as a TCP channel in the Channel No. field.
6. Enter **y** in the equipped field.
7. Press **ENTER** (F3) to save the information.

The system saves the information and refreshes the Networking Channel Administration window (Figure 4-7 on page 4-14). The channel number you entered now displays as TCP/IP. The system displays the message:

Press <CANCEL> for Channel Hardware Configuration

8. Press **CANCEL** (F6).

The system displays the Networking Channel Configuration window (Figure 4-16).

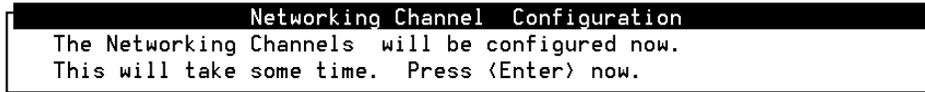


Figure 4-16. Networking Channel Configuration Window

9. Repeat step 2 through step 8 for each channel you need to enable as a TCP/IP channel.
10. Press **(ENTER)** to configure the networking channels and reset the LAN card. The process takes several minutes.

The system processes the channel information you entered and changes the hardware configuration. When the process finishes, the system displays the Networking Administration menu.
11. Press **(CANCEL)** (F6) repeatedly to return to the main menu specific to your release.

Changing Local Machine Information

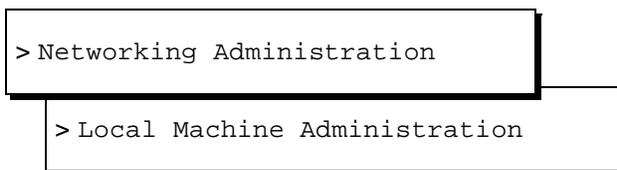
You can change local machine information on the Local Machine Administration window and on the local Machine Profile screen.

⇒ NOTE:

If you change the local machine profile, contact all remote network administrators and inform them of the changes.

To update the local machine information, perform the following tasks.

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:



The system displays the Local Machine Administration window (Figure 4-17).

Local Machine Administration	
Local Machine Name: <u>local</u>	Connection Type: <u>RS-232 ASYNC</u>
Dial Str: _____	
Data Rate: <u>9600</u>	Password: <u>**PASSWORD**</u>
Channel: <u>1</u>	

Figure 4-17. Local Machine Administration Window

2. Change the fields in this window using the information provided in Table 4-3.

You can change the value in any field except the Local Machine Name field. Use **[CHOICES]** (F2), when available, to view options for the fields. If you do not see **[CHOICES]** (F2) on the screen, press **[CHG-KEYS]** (F8). See Table 4-5 for field descriptions.

Table 4-5. Field Definitions; Local Machine Administration Window

Field	Procedure/Description
Local Machine Name <u>Valid Input:</u> display only	This field is display only. If you need to change the name of the local machine, see "Renaming the Local and Remote Machines" on page 4-44".
Connection Type <u>Valid Input:</u> see description at right	<p>Select a <i>connection type</i>.</p> <p><i>This field is used only when this system calls itself for testing purposes.</i></p> <p>Select the type of connection administered for the channel on the Networking Channel Administration window (Figure 4-7 on page 4-14).</p> <p>This is the type of connection the system will attempt to set up for a test call.</p> <p>The selections are:</p> <ul style="list-style-type: none"> ■ DCP Mode 1 (56 Kbps data rate) ■ DCP Mode 3 (64 Kbps data rate) ■ RS-232 Async (9.6 [DDD] or 19.2 Kbps [such as SDDN]; used when digital facilities are not available) ■ TCP/IP (used when connecting over a LAN and/or WAN)

Continued on next page

Table 4-5. Field Definitions; Local Machine Administration Window — Continued

Field	Procedure/Description
<p>Dial Str</p> <p><u>Valid Input:</u></p> <p>0 – 65 alphanumeric characters, including:</p> <ul style="list-style-type: none"> ■ Digits ■ Upper and lower case letters ■ Pound sign (#), asterisk (*), plus sign (+), percent sign (%), parentheses (), hyphen (-), spaces, 2-second pause (,) 	<p>Enter a <i>dial string</i>, using the following information as a guide.</p> <p>The local machine uses the dial string to call itself for loop-around testing. The dial string has to match what you want to test. When determining the dial string, use any dialing conventions or restrictions normally used to call outside or to access private networks, central office numbers, or long distance lines.</p> <p>The connection type used by the INTUITY AUDIX system determines the channel type used for calling out of the system. The dial string determines the loop used to get the call back to the INTUITY AUDIX system and the type of channel used once the call gets there. Use the following guidelines to establish the dial string.</p> <p>TCP/IP</p> <p>When the connection type is TCP/IP, use the IP address of the local machine as the dial string.</p> <p>DCP Dial String Guidelines</p> <ul style="list-style-type: none"> ■ Use the digits 0 through 9. For example, <i>6000</i>. 6000 is an extension number assigned to the first of the local system network channels or to a hunt group of channels. ■ If you dial a number to reach an outside local line, such as 9, include the number in the dial string. Use + to create a pause for dial tone. For example: <i>9+2346000</i>. The 234 is the office code assigned to the local switch, and 6000 is the same as the previous example. ■ If you dial a number to access a private network switch, such as 8, include the access number in the dial string. For example: <i>8+7896000</i>. 8 is the private network access code at the local switch, 789 is the private network code for the local switch, and 6000 is the same as the first example.

Continued on next page

Table 4-5. Field Definitions; Local Machine Administration Window — Continued

Field	Procedure/Description
<p>Dial Str (cont)</p>	<p>RS-232 Dial String Guidelines</p> <ul style="list-style-type: none"> ■ Use the digits 0 through 9 and include the attention code, <i>ATDT</i>, of the modem. For example, <i>ATDT 6000</i>. 6000 represents the extension of the other RS-232 channel. ■ If you dial a number to reach an outside local line, such as [9], include the attention code, <i>ATDT</i>, and the outside access number in the dial string. For example <i>ATDT 92346000</i>. ■ If the local system uses a dedicated RS-232 channel to call itself, do not enter a dial string. <p>Additional Dial String Guidelines</p> <p>Character strings that have special meaning within the INTUITY AUDIX system must be enclosed within double quotes. Valid special strings are:</p> <p>“W” — wait for another dial prompt “B” — replace with a BREAK character “CR” — replace with a carriage return “LF” — replace with a line feed</p>
<p>Data Rate</p> <p><u>Valid Input:</u> A rate that matches the connection type. See description at right</p>	<p>Select a <i>data rate</i>.</p> <p><i>This field is used only when this system calls itself for testing purposes.</i> Select the data rate that matches the connection type (9600, 19200, 56000, or 64000). The data rate is 00 for TCP/IP.</p>
<p>Password</p> <p><u>Valid Input:</u> 6 – 11 alphanumeric characters</p>	<p>Enter the <i>password remote machines must use</i> to establish networking connections to this local INTUITY AUDIX system.</p>
<p>Channel</p> <p><u>Valid Input:</u> 0 (zero) or the channel of a directly-connected machine</p>	<p>Enter the <i>channel number for the remote machine</i>.</p> <p>Use 0 unless the machines are directly connected or if you are doing a local machine test. A zero means the system selects the first idle channel it finds for the specified data rate. Specify the channel if the machines are directly connected or if you are doing a local machine test.</p>

3. When you finish changing local machine information, press **[CHG-KEYS]** (F8).
4. Press **[SAVE]** (F3) to save the information to the system database.
The system updates the information and returns you to the **Connection Type** field.
5. Press **[CANCEL]** (F6) to return to the main menu specific to your release.

Changing the Local Machine Profile

To update the machine profile, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
>AUDIX Administration
```

The system displays a blank administration screen.

2. Enter **change machine** at the `enter` command: prompt.

The system displays the Machine Profile screen (Figure 4-18).

```

drmid10      Active      Alarms: mWA      Logins: 4
change machine      Page 1 of 2
MACHINE PROFILE

Machine Name: drmid10      Type: local      Location: local
Voiced Name? n      Extension Length: 5
Voice ID: 0      Default Community: 1

ADDRESS RANGES
Prefix      Start Ext.      End Ext.      Warnings
1: _____      36000      36999
2: _____      20000      29999
3: _____
4: _____
5: _____
6: _____
7: _____
8: _____
9: _____
10: _____

enter command: change machine

```

Figure 4-18. Machine Profile Screen for the Local Machine — Page 1

3. Complete the fields on this screen using the information in Table 4-6 on page 4-27.



NOTE:

The Machine Name, Type, Location, Extension Length, and Voice ID fields are display only and cannot be changed.

Table 4-6. Field Definitions; Local Machine Profile Screen — Page 1

Field	Procedure/Description
Machine Name <u>Valid Input:</u> display only	Displays the Machine Name for the local machine that you entered in the Local Machine Administration window (see "Changing Local Machine Information" on page 4-22).
Machine Type <u>Valid Input:</u> display only	Displays local.
Location <u>Valid Input:</u> display only	Displays local.
Voiced Name? <u>Valid Input:</u> y = yes n = no	The Voice Name field contains an n until you record a name for the machine. This field automatically changes to y when you record a name for the machine.
Extension Length <u>Valid Input:</u> an integer from 3 – 10	Enter <i>the length of extensions</i> on the local system. The value you enter must match the extension length in your dial plan.
Voice ID <u>Valid Input:</u> display only	This field displays a system-assigned identifier that you must use to identify the machine if you decide to record machine names.
Default Community <u>Valid Input:</u> an integer from 1 – 15	If you have administered your system to use community sending restrictions, enter <i>the default community number</i> for your user population.
Prefix <u>Valid Input:</u> 0 - 21 alphanumeric characters	Prefixes can be used on the local machine, but they limit the functionality and are not recommended. For a detailed discussion of the use and implications of prefixes, see <i>Lucent INTUITY™ Messaging Solutions Release 4 Administration, 585-310-564</i> , Chapter 5, "Fax Administration". (The same information is applicable to Release 3 systems. However, do not use the <i>Lucent INTUITY Fax Messaging Administration, 585-310-558</i> book to administer this screen.)

Continued on next page

Table 4-6. Field Definitions; Local Machine Profile Screen — Page 1 — Continued

Field	Procedure/Description
Start Ext. <u>Valid Input:</u> a 3 – 10 digit string	Enter the <i>starting extensions for the ranges of telephone numbers used on the local system</i> (a block of switch extensions that can be used at the local system when assigning users). For example, if your system uses extensions between 2000 and 3000, enter 2000 in the <code>Start Ext.</code> field. Up to 10 different ranges can be specified to pinpoint the exact set of extension blocks used by the local system. The length of the start and end extension must agree with the <code>Extension Length</code> field. For a 5-digit extension, the default is 00000 to 99999.
End Ext. <u>Valid Input:</u> a 3 – 10 digit string	Enter the <i>ending extensions for the ranges of telephone numbers used on the local system</i> . For example, if your system uses extensions between 2000 and 3000, enter 3000 in the <code>End Ext.</code> field.
Warnings <u>Valid Input:</u> display only	This field displays a warning when a duplication or overlap of an extension range for another machine is being assigned.

4. When you have finished entering information into this screen, press `(NEXTPAGE)` (F7).

The system displays page 2 of the Machine Profile screen (Figure 4-19 on page 4-29).

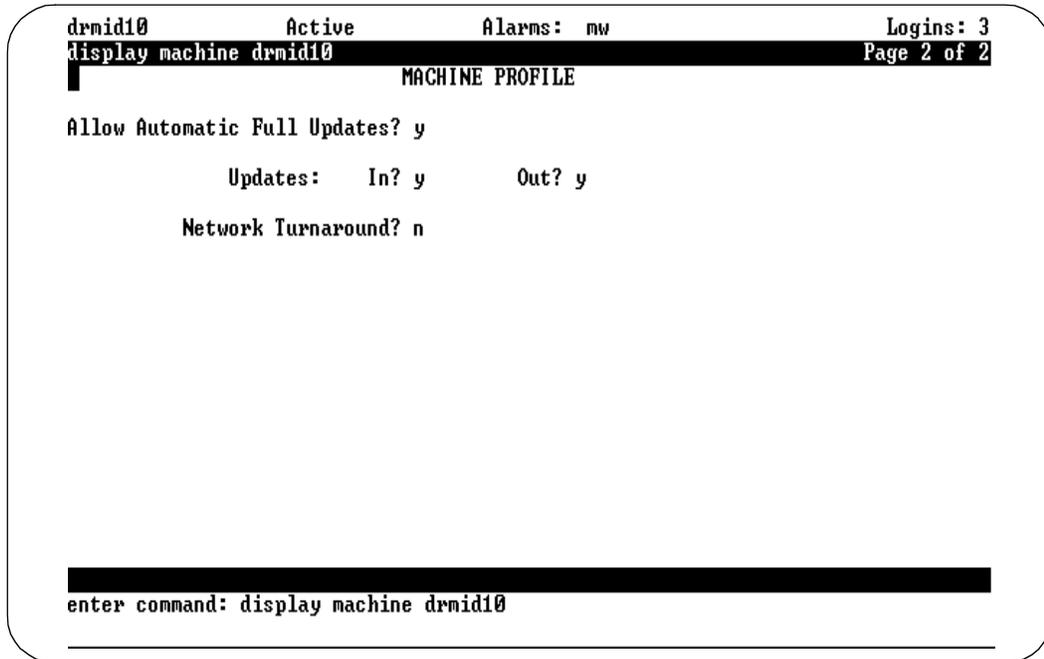


Figure 4-19. Machine Profile Screen for the Local Machine — Page 2

5. Complete the fields on this screen using the information provided in Table 4-7.



NOTE:

See Chapter 5, "Remote User Administration" for more information on Remote Updates.

Table 4-7. Field Definitions; Local Machine Profile Screen — Page 2

Field	Description
Allow Automatic Full Updates	If you enter <i>y</i> , the local INTUITY AUDIX system automatically requests full updates from remote systems.
Valid Input:	If you enter <i>n</i> , the local INTUITY AUDIX system does not automatically request full updates from remote systems.
<i>y</i> = yes	
<i>n</i> = no	

Continued on next page

Table 4-7. Field Definitions; Local Machine Profile Screen — Page 2 — Continued

Field	Description
Updates In? <u>Valid Input:</u> y = yes n = no	<p>If you enter <i>y</i>, this local INTUITY AUDIX system will accept updated user database information from any remote machine (the <code>Updates In</code> field must be set to y on the remote Machine Profile screen setup on the local INTUITY AUDIX system for each remote machine).</p> <p>If you enter <i>n</i>, the local INTUITY AUDIX system will not accept updates from any remote machine regardless of the entry on the remote Machine Profile screen. Set this field to y only after testing the network end-to-end during initial administration.</p>
Updates Out? <u>Valid Input:</u> y = yes n = no	<p>If you enter <i>y</i>, updates to user database information for local users are sent to a remote machine (the <code>Updates Out</code> field must be set to y on the remote Machine Profile screen set up on the local INTUITY AUDIX system for each remote machine).</p> <p>If you enter <i>n</i>, updates will not be sent to any remote machine regardless of the entry for this field on the remote Machine Profile screen. Set this field to yes only after testing the network end-to-end during initial administration.</p>
Network Turnaround <u>Valid Input:</u> y = yes n = no	<p>To disable this feature system wide, enter n on the local Machine Profile screen.</p> <p>To enable the feature, enter y on the local Machine Profile screen <i>and</i> on the appropriate remote Machine Profile(s) screens on this local system.</p> <p>If enabled, a network connection that originated from this local INTUITY AUDIX system is allowed to turn around after the local INTUITY AUDIX system has sent all of its network data to any remote machine. The remote machine may then return update information, voice mail, and status on the same connection.</p>

6. When you finish updating the local machine information, press `(ENTER)` (F3) to save the information in the system database.
 The cursor returns to the command line, and the system displays the message `Command Successfully Completed`.
7. Enter an administrative command at the `enter command:` prompt or **exit** to leave AUDIX Administration.

Adding a Remote Machine

As your network grows, you may need to add remote machines to the local machine. This section provides instructions for adding and administering remote machine information on the local machine. The local machine needs to know specific information about each remote machine, including the machine name, password, connection type, and dial string.

⇒ NOTE:

The INTUITY AUDIX system accepts only one local machine. Do not attempt to add a second local machine. Use the instructions in this section only to add remote machines.

You add remote machine information on both the Digital Network Machine Administration window and on the Machine Profile screen for the remote machine.

⇒ NOTE:

The design center provides all information to be added for a remote machine.

Completing the Digital Network Machine Administration Window

Use the Digital Network Machine Administration window to enter information for connecting to the remote machine.

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
> Networking Administration
```

```
> Remote Machine Administration
```

```
> Digital Network Machine Administration
```

The system displays the Digital Network Machine Administration window (Figure 4-20 on page 4-32).

Digital Network Machine Administration

Machine Name: _____ Connection Type: _____

Dial Str: _____

Message Transmission Schedule (hh:mm, 00:00 - 23:59)

1: start: __:__	end: __:__	interval: __:__
2: start: __:__	end: __:__	interval: __:__
3: start: __:__	end: __:__	interval: __:__

Data Rate: _____ Password: _____

Channel: __ Machine Type: _____

Send Multimedia Messages (e.g. FAX) ? : _

Figure 4-20. Digital Network Machine Administration Window

2. Complete the fields in this window using the information provided in Table 4-8.

Table 4-8. Field Definitions; Digital Network Machine Administration

Field	Procedure/Description
<p>Machine Name</p> <p><u>Valid Input:</u> 1 – 10 alphanumeric characters see guidelines at right</p>	<p>Enter a <i>unique name for the remote machine</i>.</p> <p>Each remote machine must have a unique name, not only from other remote machines, but from all machines on the network, including fax call delivery machines and the local Lucent INTUITY. The following rules apply:</p> <ul style="list-style-type: none"> ■ The machine name cannot contain blank (embedded) spaces. For example, denver 1 is not allowed, but denver_1 is allowed. ■ This is a case-sensitive field. Upper-case letters must be entered as upper case, and lower-case letters as lower case. ■ Hyphen (-) are allowed ■ Underscore (_) are allowed ■ The machine name cannot start with a number.
<p>Connection Type</p> <p><u>Valid Input:</u> see description at right</p>	<p>Enter the <i>connection type</i> for the remote machine.</p> <p>The selections are:</p> <ul style="list-style-type: none"> ■ DCP Mode 1 (56 Kbps data rate) ■ DCP Mode 3 (64 Kbps data rate) ■ RS-232 Async (9.6 or 19.2 Kbps [SDDN] used when digital facilities are not available ■ TCP/IP (when connecting over a local area network)

Continued on next page

Table 4-8. Field Definitions; Digital Network Machine Administration — Continued

Field	Procedure/Description
<p>Dial Str</p> <p><u>Valid Input:</u></p> <p>0 – 65 alphanumeric characters, including:</p> <ul style="list-style-type: none"> ■ Digits ■ Upper and lower case letters ■ Pound sign (#), asterisk (*), plus sign (+), percent sign (%), parentheses (), hyphen (-), spaces, 2-second pause (,) 	<p>When determining the dial string, use any dialing conventions or restrictions normally used to call outside, or to access private networks, central office numbers, or long distance lines.</p> <p>The connection type used by the INTUITY AUDIX system determines the channel type used for calling out of the system. Use the following guidelines to establish the dial string.</p> <p>TCP/IP</p> <p>When the connection type is TCP/IP, use the IP Address of the remote machine as the dial string.</p> <p>DCP Dial String Guidelines</p> <ul style="list-style-type: none"> ■ Use the digits 0 through 9. For example: <i>6000</i>. 6000 is an extension number assigned to the first of the local system network channels or to a hunt group of channels. ■ If you dial a number to reach an outside local line, such as <i>9</i>, include the number in the dial string. Use + to create a pause for dial tone. For example: <i>9+2346000</i>. The 234 is the office code assigned to the local switch, and 6000 is the same as the previous example. ■ If you dial a number to access a private network switch, such as <i>8</i>, include the access number in the dial string. For example: <i>8+7896000</i>. 8 is the private network access code at the local switch and the 789 is the private network code for the local switch.
<p>Dial Str (cont)</p>	<p>RS-232 Dial String Guidelines</p> <ul style="list-style-type: none"> ■ Use the digits 0 through 9 and include the attention code, <i>ATDT</i>, of the modem. For example, <i>ATDT 6000</i>. 6000 represents the extension of the other RS-232 channel. ■ If you dial a number to reach an outside local line, such as <i>9</i>, include the attention code, <i>ATDT</i>, and the outside access number in the dial string. For example <i>ATDT 92346000</i>. ■ If the local system uses a dedicated RS-232 channel to call itself, do not enter a dial string. <p>Additional Dial String Guidelines</p> <p>Character strings that have special meaning within the INTUITY AUDIX system must be enclosed within double quotes. Valid special strings are:</p> <p>“W” — wait for another dial prompt “B” — replace with a BREAK character “CR” — replace with a carriage return “LF” — replace with a line feed</p>

Continued on next page

Table 4-8. Field Definitions; Digital Network Machine Administration — Continued

Field	Procedure/Description
<p>Message Transmission Schedule</p> <p><u>Valid Input:</u></p> <p>24-hour clock time in the format <i>hh:mm</i></p>	<p>Start Time — <i>Enter the starting time for a message transmission period to the remote system (such as 00:01 for one minute after midnight).</i></p> <p>End Time — <i>Enter the ending time for a message transmission period to the remote system such as 23:59 for one minute before midnight).</i></p> <p>Interval — <i>Enter the interval at which the local Intuity AUDIX system will call this remote system (such as 00:05 for every 5 minutes). The INTUITY AUDIX system checks the queue at this interval (such as every 5 minutes) and calls the remote system if something is in the queue for this remote system.</i></p> <p>It is recommended that you stagger start times and intervals for each remote system so the local INTUITY AUDIX system is not trying to call all remote systems at the same time.</p>
<p>Data Rate</p> <p><u>Valid Input:</u></p> <p>communication speed equal to connection type</p>	<p>Enter the <i>data rate</i> for this remote machine.</p> <p>The data rate <i>must match</i> the value entered in the Connection Type field. If you enter a data rate value that does not match the connection type, you receive a message instructing you to enter the correct value. You cannot move to the next field until you enter an appropriate data rate.</p> <p>For TCP/IP, use the default of <i>00</i>.</p>
<p>Password</p> <p><u>Valid Input:</u></p> <p>5- to 10-digit alphanumeric characters</p>	<p>Enter the <i>password</i> exactly as it is administered on the remote system.</p>
<p>Channel</p> <p><u>Valid Input:</u></p> <p>an integer from 1 – 12</p>	<p>Enter the <i>channel number for the remote machine</i>.</p> <p>Use <i>0</i> (zero) unless the machines are directly connected or if you are doing a local machine test. A zero means the system selects the first idle channel it finds for the specified data rate.</p> <p><i>Specify the channel</i> if the machines are directly connected or if you are doing a local machine test.</p>
<p>Machine Type</p> <p><u>Valid Input:</u></p> <p>see description at right</p>	<p>Enter the <i>machine type</i>.</p> <p>To see a list of valid Machine Types, press CHOICES (F2) and select the appropriate machine type from the available types, as follows:</p> <ul style="list-style-type: none"> ■ AUDIX ■ Lucent INTUITY 1.0 or 2.0 ■ Lucent INTUITY 3.0 ■ Lucent INTUITY 4.0 or later ■ DEFINITY AUDIX 3.2

Continued on next page

Table 4-8. Field Definitions; Digital Network Machine Administration — Continued

Field	Procedure/Description
Send Multimedia Messages (e.g. FAX)? Valid Input: y = yes n = no	Enter <i>y</i> if the remote machine will accept multimedia messages. Enter <i>n</i> if the remote machine will not accept multimedia messages. The system will not let you enter <i>y</i> if the remote machine does not accept multimedia messages. Both Lucent INTUITY Release 3 and Lucent INTUITY Release 4 systems accept multimedia messages. See Chapter 2, "Intuity AUDIX Digital Networking Description", for fax and e-mail considerations.

3. When you finish entering information for a remote machine, press **ADD** (F2). (If you do not see **ADD** on your screen, press **CHG-KEYS** to access the alternate set of function keys.)

The system adds the information and returns you to the `Machine Name` field.

4. Add another remote machine if needed.

⇒ NOTE:

To enter information for another remote machine, enter the next remote machine name over the previous name. When you press **ENTER** to move the cursor to the next field, the information for the previous machine clears from the screen.

5. When you finish entering remote machines, press **CANCEL** (F6) repeatedly to return to the main menu specific to your release (Figure 4-1).

Completing the Machine Profile Screen for the Remote Machine

Use the Machine Profile screen to enter networking information required for each remote machine, such as address ranges and remote update information.

⇒ NOTE:

The Digital Network Machine Administration window must be completed for a remote machine before completing the Machine Profile screen for that machine.

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
> AUDIX Administration
```

The system displays a blank administration screen.

2. Enter **change machine remote_machine_name** at the `enter` command: prompt. The system displays page 1 of the Machine Profile screen (Figure 4-21).



NOTE:

If you do not know the names of the remote machines, enter **list machines** at the `enter` command prompt. The system displays a list of all machines administered on the system.

```

AUDIX           Active           Alarms: none           Logins: 8
change machine dig1           Page 1 of 2
                                MACHINE PROFILE

Machine Name: dig1           Type: UEX           Location: remote-digital

Voiced Name? n           Extension Length: 4
Voice ID: 3           Default Community: 1

ADDRESS RANGES
Prefix           Start Ext.   End Ext.   Warnings
1: _____
2: _____
3: _____
4: _____
5: _____
6: _____
7: _____
8: _____
9: _____
10: _____

enter command: change machine dig1
    
```

Figure 4-21. Machine Profile Screen for a Remote Machine — Page 1



NOTE:

The Machine Name, Type, Location, and Voice ID fields are display only and cannot be changed.

3. Complete the fields in this window using the information provided in Table 4-9.

Table 4-9. Field Definitions; Remote Machine Profile Screen — Page 1

Field	Description
Machine Name	Displays the machine name for this remote machine entered on the Digital Network Machine Administration window.
Machine Type <u>Valid Input:</u> display only	Displays the machine type for this remote machine entered on the Digital Network Machine Administration window.
Location <u>Valid Input:</u> display only	Displays the location <code>remote-digital</code> .
Voiced Name? <u>Valid Input:</u> y = yes n = no	The Voice Name field contains an n until you record a name for the machine. This field automatically changes to y when you record a name for the machine.
Extension Length <u>Valid Input:</u> an integer from 3 – 10	Enter <i>the length of extensions</i> on the local system. The value you enter must match the extension length in your dial plan.
Voice ID <u>Valid Input:</u> display only	This field displays a system-assigned identifier that you must use to identify the machine if you decide to record machine names.
Default Community <u>Valid Input:</u> an integer from 1 – 15	If you have administered your system to use community sending restrictions, enter <i>the default community number</i> for your user population.

Continued on next page

Table 4-9. Field Definitions; Remote Machine Profile Screen — Page 1 — Continued

Field	Description
Prefix <u>Valid Input:</u> 0 - 21 alphanumeric characters	Enter the <i>prefix digits</i> . A user enters the prefix before the remote user's extension when addressing voice messages. To simplify this task, use a short, descriptive prefix. The <i>total length</i> of the prefix + the extension <i>must not exceed 25 characters</i> . The system uses the prefix only to identify users. It is not used for dialing out, so it does not need to match an area/office code. The following are examples of possible prefixes: <ul style="list-style-type: none"> ■ No prefix – The prefix is required only when one or more of the remote users share the same extension numbers as the local users (extension ranges overlap). If there are no overlapping extension numbers, a prefix is not needed. ■ Public network access code – When addressing a message to a remote user, the local user enters the remote user's number as if placing a call to that user. ■ Location code – This method simplifies addressing messages by requiring only an alphanumeric code in front of the extension number. Location codes are shorter and often easier to remember.
Start Ext. <u>Valid Input:</u> a 3 – 10 digit string	Enter the <i>starting extensions for the ranges of telephone numbers used on the local system</i> (a block of switch extensions that can be used at the local system when assigning users). For example, if your system uses extensions between 2000 and 3000, enter 2000 in the <code>Start Ext.</code> field. Up to 10 different ranges can be specified to pinpoint the exact set of extension blocks used by the local system. The length of the start and end extension must agree with the <code>Extension Length</code> field. For a 5-digit extension, the default is 00000 to 99999.
End Ext. <u>Valid Input:</u> a 3 – 10 digit string	Enter the <i>ending extensions for the ranges of telephone numbers used on the local system</i> . For example, if your system uses extensions between 2000 and 3000, enter 3000 in the <code>End Ext.</code> field.
Warnings <u>Valid Input:</u> display only	This field displays a warning when a duplication or overlap of an extension range for another machine is being assigned.

4. Press `(NEXTPAGE)` (F7). The system displays page 2 of the Machine Profile screen (Figure 4-22).

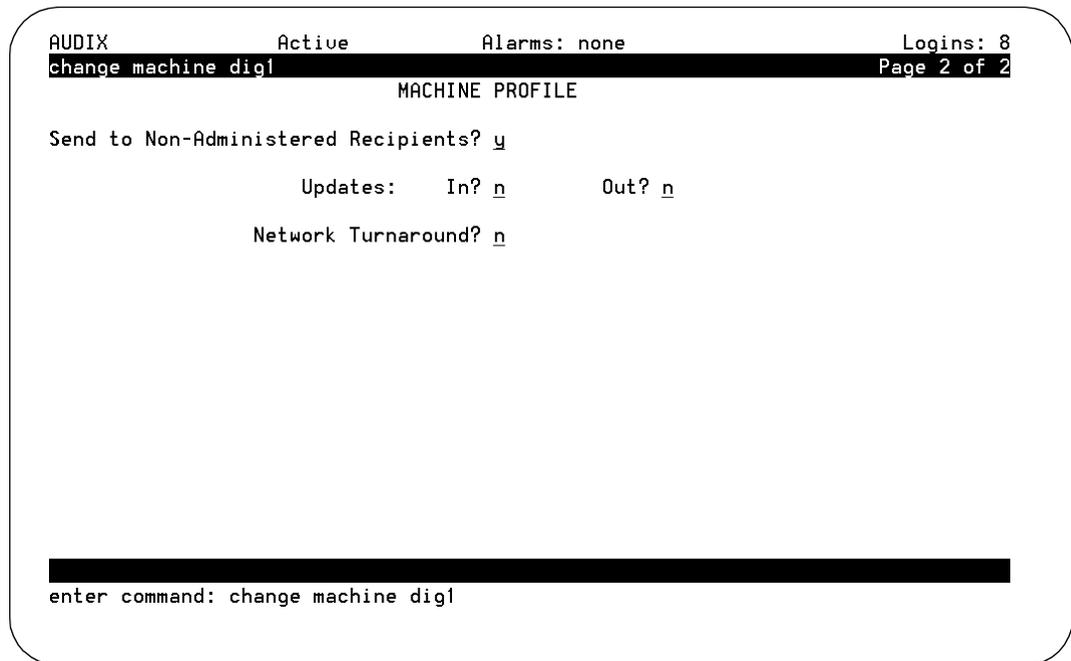


Figure 4-22. Machine Profile Screen for a Remote Machine — Page 2

5. Complete the fields in this window using the information provided in Table 4-10.

Table 4-10. Remote Machine Profile Screen — Page 2 Description

Field	Description
Send to Non-Administered Recipients? Valid Input: y= yes n = no	Enter <i>y</i> if the system will attempt to deliver messages to non-administered remote recipients. Enter <i>n</i> if messages cannot be sent to non-administered recipients.
Updates In? Valid Input: y= yes n = no	Enter <i>y</i> if the local system will accept updated database information from the remote system (provided the Updates Out field on the local system is set to <i>y</i>). Set to <i>y</i> only after testing the network end-to-end during initial administration.

Continued on next page

Table 4-10. Remote Machine Profile Screen — Page 2 Description — Continued

Field	Description
Updates: Out? Valid Input: y= yes n = no	Enter <i>y</i> if the local system will send updated database information to the remote system (provided the Updates In field on the local system is set to <i>y</i> .) Set to <i>y</i> only after testing the network end-to-end during initial administration.
Network Turnaround	If you are conducting an acceptance test, enter <i>n</i> . After the acceptance tests, enter <i>y</i> if a network connection that originated from this remote system is allowed to turn around after the remote system has sent all of its network data to the local system. The local system may then return update information, voice mail, and status on the same connection. This feature reduces toll charges and increases the efficiency of the system in networks with more than 10 machines. Network Turnaround must be set to <i>y</i> on the local Machine Profile screen for this feature to work between the local system and the remote system. For more information on this feature, see Chapter 5, "Remote User Administration"

6. Press **(ENTER)** (F3) to save the information.
The system displays the message `Command Successfully Completed`.
7. Press **(CANCEL)** (F6) to return to the command line.
8. Enter an administrative command at the `enter command:` **prompt** or **exit** to leave AUDIX Administration.

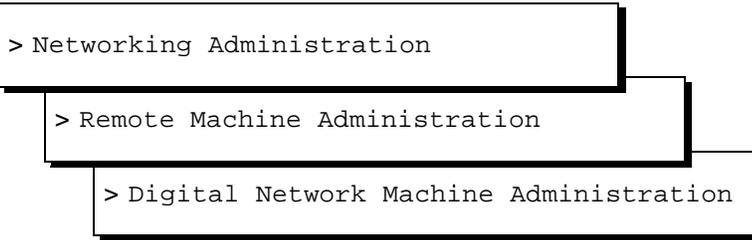
Changing Remote Machine Information

You can change remote machine information on the Digital Network Machine Administration window (Figure 4-23) and on the remote Machine Profile screen (Figure 4-24 on page 4-43).

Changing the Digital Network Machine Administration Window

To update the Digital Network Machine Administration window, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 4-1), select:



The system displays the Digital Network Machine Administration window (Figure 4-23).

```

Digital Network Machine Administration
Machine Name: _____ Connection Type: _____
Dial Str: _____
Message Transmission Schedule (hh:mm, 00:00 - 23:59)
  1: start: __:__ end: __:__ interval: __:__
  2: start: __:__ end: __:__ interval: __:__
  3: start: __:__ end: __:__ interval: __:__
Data Rate: _____ Password: _____
Channel: _____ Machine Type: _____
Send Multimedia Messages (e.g. FAX) ? : _
```

Figure 4-23. Digital Network Machine Administration Window

2. With the cursor in the Machine Name field, press (CHOICES) (F2).

The system displays a list of administered remote machines.

3. Select *the machine you would like to administer*.

The system displays the information for the selected remote machine.

4. Use **TAB** or **ENTER** to move the cursor to the field you need to change and update the information. (See Table 4-8 on page 4-32 for field entries and administrative implications.)

⇒ NOTE:

Remember to use **CHOICES** (F2), when available, to view options for the fields. If you do not see **CHOICES** (F2) on the screen, press **CHG-KEYS** (F8).

5. When you finish changing remote machine information, press **CHG-KEYS** (F8) then **CHANGE** (F3) to save new information. The system updates the information and returns you to the `Machine Name` field.
6. Repeat step 2 – step 5 for each remote machine you need to update.
7. When you finish updating remote machines, press **CANCEL** (F6) repeatedly to return to the main menu specific to your release (Figure 4-1 on page 4-5).

Changing the Remote Machine Profile Screen

To update the Machine Profile screen, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
> AUDIX Administration
```

The system displays a blank administration screen.

2. Enter **change machine remote_machine_name** at the `enter command:` prompt.

The system displays page 1 of the Machine Profile screen (Figure 4-24).

⇒ NOTE:

If you do not know the names of the remote machines, enter **list machines** at the `enter command` prompt. The system displays a list of all machines administered on the system.

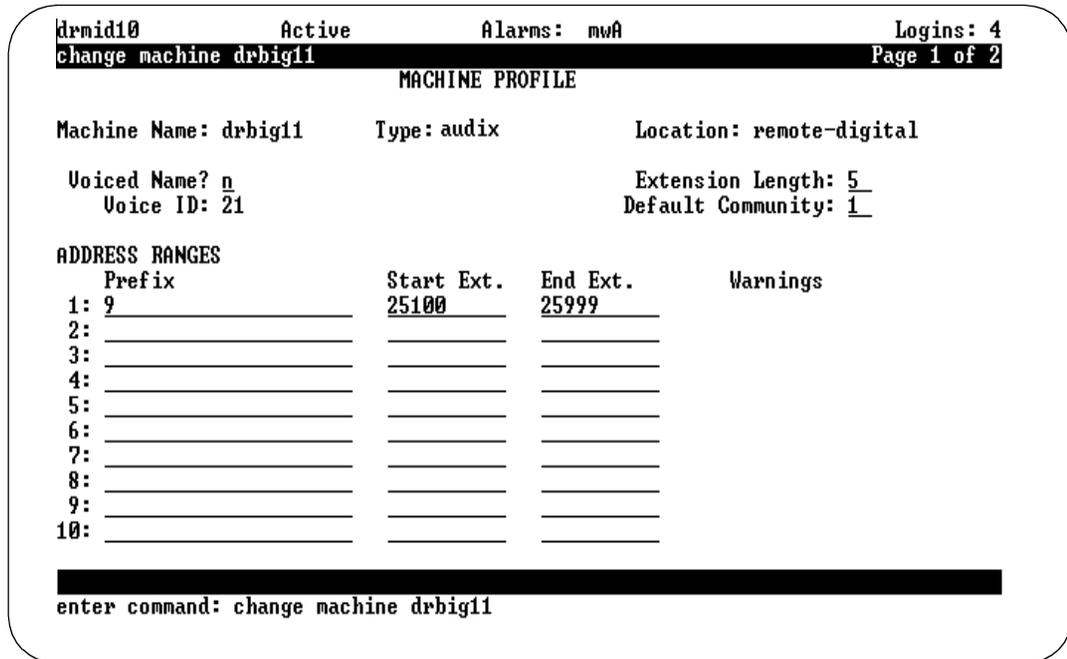


Figure 4-24. Machine Profile Screen for a Remote Machine

⇒ NOTE:

The Machine Name, Type, Location, Voice ID, and Default Community fields are display only. You cannot change the information in the fields.

3. Use **(TAB)** or **(RETURN)** to move the cursor to the field you need to change and update the information. See Table 4-9 on page 4-37 for field entries and administrative implications.
4. Press **(NEXTPAGE)** (F7). The system displays page 2 of the Machine Profile screen (Figure 4-22 on page 4-39).
5. Use **(TAB)** or **(RETURN)** to move the cursor to the field you need to change and update the information. See Table 4-10 on page 4-39 for field entries and administrative implications.
6. When you finish entering remote machine information, press **(ENTER)** (F3) to save the information in the system database.
The system displays the message `Command Successfully Completed`.
7. Enter an administrative command at the `enter command:` prompt or **exit** to leave AUDIX Administration.

Renaming the Local and Remote Machines

To change the machine name for either the local or remote machines, you must use the rename option.

⇒ NOTE:

Contact each remote machine administrator and inform the administrator of any changes you make to your local machine.

Renaming the Local Machine

A local machine is added when the Lucent INTUITY AUDIX system is installed. You cannot add a second local machine or delete a local machine. You can only change the information or rename the local machine.

To rename a local machine, perform the following tasks:

1. Starting from main menu specific to your release (Figure 4-1 on page 4-5), select:

```
> Networking Administration
> Local Machine Administration
```

The system displays the Local Machine Administration window (Figure 4-17 on page 4-23).

2. Press **(CHG-KEYS)** (F8) and then **(RENAME)** (F5).

The system displays the Rename Local Machine window (Figure 4-25).

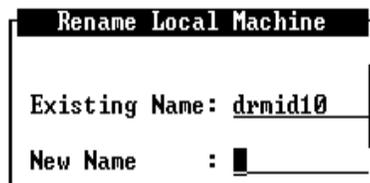


Figure 4-25. Rename Local Machine Window

3. Enter *the new name for the local machine* in the `New Name` field.



NOTE:

If you are using TCP/IP digital networking, the new name must be the same as the UNIX Machine Name on the TCP/IP Administration window (Figure 4-4).

The machine name may be up to 10 alphanumeric characters in length. The following rules apply:

- The machine name cannot contain blank (embedded) spaces. For example, `denver 1` is not allowed, but `denver_1` is allowed.
 - This is a case-sensitive field. Upper-case letters must be entered as upper case, and lower-case letters as lower case.
 - Hyphen (-) are allowed
 - Underscore (_) are allowed
 - The machine name cannot start with a number.
4. Press `SAVE` (F3) to enter the new name into the system. If you do not see `SAVE` (F3) on the screen, press `CHG-KEYS` (F8) to access the alternate set of functions keys.
 5. Press `CANCEL` (F6) repeatedly to return to the main menu specific to your release (Figure 4-1 on page 4-5).



NOTE:

After you rename the local machine, you must stop and start the voice mail system using the **reset voice-mail restart** command for the new name to take effect. (Select `AUDIX Administration` from the Lucent INTUITY main menu specific to your release and enter the command at the `enter command:` prompt.) This will take some time and should be done during off hours. See the "Restarting the Voice Mail System" section in the administration guide for your release of INTUITY AUDIX.

Renaming a Remote Machine

To change the name of a remote machine, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
> Networking Administration
  > Remote Machine Administration
    > Digital Network Machine Administration
```

The system displays the Digital Network Machine Administration window (Figure 4-23 on page 4-41).

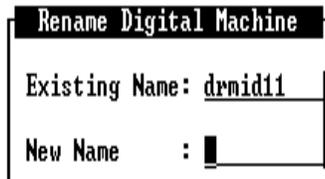
2. With the cursor in the `Machine Name` field, press `(CHOICES)` (F2). The system displays a list of administered remote machines.

3. Select the *machine you would like to rename*.

The system displays the information for the selected remote machine.

4. Press `(CHG-KEYS)` (F8) then `(RENAME)` (F5).

The system displays the Rename Digital Machine window (Figure 4-26).



```
Rename Digital Machine
Existing Name: drmid1
New Name      : |
```

Figure 4-26. Rename Digital Machine Window

5. Enter *the new name for the remote machine* in the `New Name` field. The name must be unique. The machine name may be up to 10 alphanumeric characters in length. The following rules apply:

- The machine name cannot contain blank (embedded) spaces. For example, denver 1 is not allowed, but denver_1 is allowed.
- This is a case-sensitive field. Upper-case letters must be entered as upper case, and lower-case letters as lower case.
- Hyphen (-) are allowed
- Underscore (_) are allowed
- The machine name cannot start with a number.

6. Press **SAVE** (F3) to enter the new name into the system. If you do not see **SAVE** (F3) on the screen, press **CHG-KEYS** (F8) to access the alternate set of functions keys.
7. Press **CANCEL** (F6) repeatedly to return to the main menu specific to your release (Figure 4-1 on page 4-5).

Deleting Remote Machines

If you are informed that a remote machine has been removed from the network, you must delete that machine information from your local machine. When you delete a remote machine, you also delete any remote users associated with that remote machine. Machine and user information are not removed completely from the system until a nightly audit runs.

⇒ NOTE:

You cannot delete a local machine.

To delete a remote machine, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
> Networking Administration
> Remote Machine Administration
> Digital Network Machine Administration
```

The system displays the Digital Network Machine Administration window (Figure 4-23 on page 4-41).

2. With the cursor in the `Machine Name` field, press **CHOICES** (F2) to select from a list of administered remote machines. If you do not see **CHOICES** (F2) on the screen, press **CHG-KEYS** (F8) to access the alternate set of functions keys.
3. Select the machine you would like to remove.

The system displays the information for the selected remote machine.

⚠ CAUTION:

Deleting a machine removes the remote machine and the remote users assigned to that machine. Before proceeding to the next step, make sure you entered the correct remote machine name and that you really want to delete the machine and users.

4. Press **CHG-KEYS** (F8) then **DELETE** (F4).

The system displays the following confirmation screen.



5. Select **Yes** to delete the machine. If you decide not to delete the machine, select **No**.

After you confirm that you would like to delete the machine, the system removes the machine and blanks out the fields on the Digital Network Machine Administration window.

6. Press **CANCEL** (F6) repeatedly to return to the main menu specific to your release (Figure 4-1 on page 4-5).

Re-Adding a Deleted Machine

If you would like to add a machine that you just deleted back into the system right away, you have to run audits to complete the removal of all remote users. At the Lucent INTUITY main menu specific to your release, select **AUDIX Administration** and run the following audits in the following order.

1. **audit network-data**
2. **audit subscriber-data**
3. **audit network-data**
4. **audit mailing-lists**
5. **audit names**

See the administration guide for your release of INTUITY AUDIX for more information on these audits.

You do not have to run these audits if you are not re-adding the machine that was just deleted. The nightly audits will clear the appropriate data from the database.

Listing Address Ranges

The Address Ranges screen displays a numerical list of address ranges that belong to all machines in the network. You can use this screen to determine if you have overlapping address ranges in your network. If you have overlapping address ranges, you will need to add a prefix for address ranges on the local and/or remote Machine Profile screen(s) for any overlapping addresses.

To list address ranges, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
> AUDIX Administration
```

The system displays a blank administration screen.

2. Enter **list address-ranges** or **list address-ranges starting_address** at the `enter command:` prompt.

⇒ NOTE:

If your system has a printer, you can print the contents of this screen by preceding the **list** command with the command word **print**.

The system displays the following question:

**Display Only Those Ranges
with Maximum Number of Overlaps? n**

3. Leave the default at **no** to display all address ranges for all machines in the network.

Enter **y** to display only ranges with the maximum number of overlaps, that is, 16 machines with overlapping address ranges.

4. Press **(ENTER)** [F3].
5. The system displays the Address Ranges screen (Figure 4-27 on page 4-50).

```
drmid10           Active           Alarms: MmWA           Logins: 3
list address-ranges           Page 1
┌──────────────────────────────────┴──────────────────────────────────┐
│                               ADDRESS RANGES                           │
│                               Machines                                  │
│                               ────────────                            │
│ From:           3000         lzbig                                    │
│ To:             3999                                                │
│                               ────────────                            │
│ From:           4000         lzmid3                                   │
│ To:             4999                                                │
│                               ────────────                            │
│ From:           5000         lzmid5                                   │
│ To:             6999                                                │
│                               ────────────                            │
│ From:           7000         lzmid1                                   │
│ To:             7999                                                │
│                               ────────────                            │
└──────────────────────────────────┴──────────────────────────────────┘
Press [NextPage], [PrevPage] or [Cancel] to abort
enter command: list address-ranges
```

Figure 4-27. Address Ranges Screen

Table 4-11 describes this display-only screen.

Table 4-11. Field Definitions; Address Ranges Screen

Field	Description
From	Starting address of the address range
To	Ending address of the address range
Machines	Machines for this address range (up to 16 machines for each range)

6. Use (F7) and (F8) to scroll through the screens, if applicable.
7. Press (F1).

The cursor returns to the command line and the system displays the message `Command Successfully Completed`.
8. Enter an administrative command at the `enter command:` prompt or `exit` to leave AUDIX Administration.

Listing Remote Extensions

The List Remote Extensions screen displays a list of remote user names, types, and extensions and the usage date. The list displays starting with either the first entry or the extension specified in the command line. Use the following procedure to list remote extensions.

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
> AUDIX Administration
```

The system displays a blank administration screen.

2. Enter one of the following commands at the `enter command:` prompt:

NOTE:

If your system has a printer, you can print the contents of this screen by preceding the **list** command with the command word **print**.

list remote-extensions *machine_name*

The *machine-name* is required and identifies the remote machine.

list remote-extensions *machine_name extension*

The *extension* option specifies the starting extension in the list. If the extension is not specified, the list starts with the numerically lowest extension.

list remote-extension *machine_name extension_type*

The *type* option specifies that only extensions of that type are listed. Valid extension types are administered, verified, and unverified.

list remote-extension *machine_name type*

The system displays the List Remote Extensions screen (Figure 4-28).

```

drbig12      Active      Alarms: mWA      Logins: 3
list remote-extensions drmid10      Page 1
LIST REMOTE EXTENSIONS

Extension    Name                Type                Usage Date
36100       jane36100          administered       03/12/96
36101       Sameer             administered       03/11/96
36102       acular             administered       03/12/96
36103       ACER               administered       03/10/96
36104       ACKERMAN           administered       03/11/96
36105       ADAMS              administered       03/11/96
36106       adhikari,sam      administered       03/12/96
36107       adler,louisa r    administered       03/11/96
36108       adler,sharon      administered       03/12/96
36109       agarwala,pramila  administered       03/11/96
36110       agee,juanita      administered       03/11/96
36111       ahearn,edward g.jr administered       03/11/96
36112       ahmed,syed m      administered       03/12/96
36113       ajdari,shahrokh   administered       03/12/96
36114       akkerhuis,jacobus nicola administered       03/10/96

Press [NextPage], [PrevPage] or [Cancel]
enter command: list remote-extensions drmid10

```

Figure 4-28. List Remote Extensions Screen

Table 4-12 describes this display-only screen.

Table 4-12. List Remote Extensions Screen Description

Field	Description
Extension	Extension of the remote user
Name	Name of the remote user if known
Type	Type of the remote user listed — administered, verified, or unverified
Usage Date	Last day the remote user associated with this extension had activity, was on the mailing list, or was the sender of a message not yet deleted

- Use **[NEXTPAGE]** (F7) and **[PREVPAGE]** (F8) to scroll through the screens, if applicable.
- Press **[CANCEL]** (F1).
The cursor returns to the command line and the system displays the message `Command Successfully Completed`.
- Enter an administrative command at the `enter command:` prompt or **exit** to leave AUDIX Administration.

Viewing Machine Information

You may need to view the currently administered information. This section contains instructions for viewing the following information.

- A list of machines
- Local machine information
- Remote machine information

Viewing the Machine Lists

There are 2 machine lists on the system.

- List Machines shows both the local machine and the remote machines
- Remote Machines List shows only the remote machines

Viewing the List Machines Screen

You can find a machine name by viewing the List Machines screen. To do so, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
> AUDIX Administration
```

The system displays a blank administration screen.

2. Enter **list machine** at the `enter command:` prompt.

The system displays the List Machines screen (Figure 4-29 on page 4-54).

```

drmid10      Active      Alarms:  n      Logins:  3
list machines                               Page 1
LIST MACHINES

Machine      Machine Type  Voice ID  Callback No.
STI01       R1            17       N/A
achig1      amisac       13       1
amars       UEX          12       N/A
apbig1      amisap       14       1
apmid10     amisap       24       1
asaturn     UEX          16       N/A
calld       calld        25       N/A
cvis        UEX          27       N/A
dracer11    UEX          22       N/A
drbig10     R1           1        N/A
drbig11     UEX          21       N/A
drintuit    UEX          20       N/A

Press [NextPage], [PrevPage] or [Cancel]
enter command: list machines

```

Figure 4-29. List Machines Screen

This screen lists the local machine and each administered remote machine, the `Machine Type`, the `Voice ID` for each machine, and the `Callback No.` if applicable.

3. Use `(NEXTPAGE)` (F7) and `(PREVPAGE)` (F8) to scroll through the screens, if applicable.
4. Press `(CANCEL)` (F1).

The cursor returns to the command line and the system displays the message `Command Successfully Completed`.

5. Enter an administrative command at the `enter command:` prompt or `exit` to leave AUDIX Administration.

Viewing the Remote Machines List Window

To display the Remote Machines List window, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```

> Networking Administration
> Remote Machine Administration

```

The system displays the Remote Machine Administration Menu (Figure 4-30).

```

Remote Machine Administration
>Remote Machines List
Digital Network Machine Administration
AMIS Analog Machine Administration

```

Figure 4-30. Remote Machine Administration Menu

2. Select:

```
> Remote Machines List
```

The system displays the Remote Machines List window (Figure 4-31).

Remote Machines List			
Machine Name	Connection	Rate	Channel
STI01	DCP MODE 3	64000	0
achig1	AMIS		
amars	RS-232 ASYNC	9600	0
apbig1	AMIS		
apmid10	AMIS		
asaturn	RS-232 ASYNC	19200	4
calld	AMIS		
cvis	TCP/IP	0	0
dracer11	TCP/IP	0	0
drbig10	DCP MODE 3	64000	4
drbig11	DCP MODE 3	64000	0
drintuit	TCP/IP	0	0
drmf5	RS-232 ASYNC	9600	4
drmid11	TCP/IP	0	0
drmid5	AMIS		
lzbig	DCP MODE 3	64000	0

Figure 4-31. Remote Machines List Window

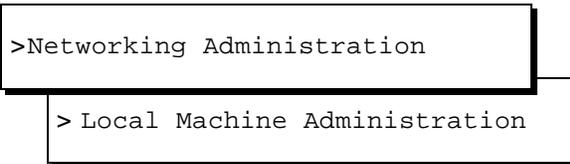
This window shows the remote Machine Name, the type of Connection, the Rate (or speed) of the connection, and the Channel.

- Use **(NEXTPAGE)** and **(PREVPAGE)** to scroll through the windows, if applicable.
- If your system has a printer, press **(Print Scrn)** to print the contents of the window.
- Press **(CANCEL)** (F6) repeatedly to return to the main menu specific to your release (Figure 4-1 on page 4-5).

Viewing the Local Machine Administration Window

To access and view local machine administration information, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:



The system displays the Local Machine Administration window (Figure 4-32).

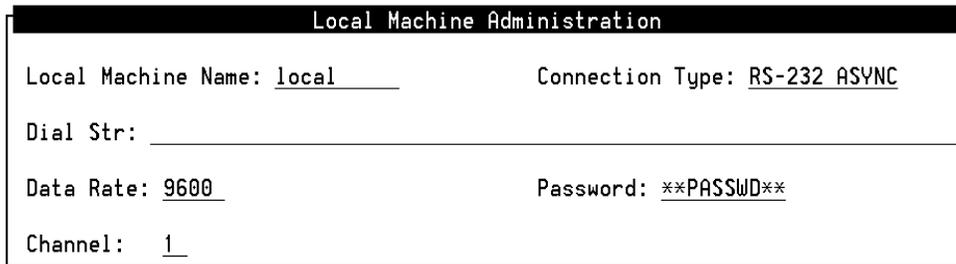


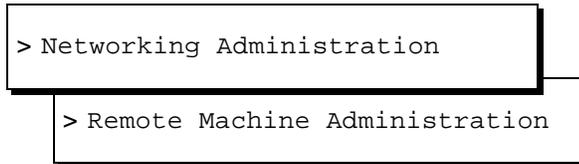
Figure 4-32. Local Machine Administration Window

2. Press **CANCEL** (F6) repeatedly to return to the main menu specific to your release (Figure 4-1 on page 4-5).

Viewing the Digital Network Machine Administration Window for the Remote Machine

To display the remote machine information, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:



The system displays the Remote Machine Administration Menu (Figure 4-33).



Figure 4-33. Remote Machine Administration Menu

2. Select `Digital Network Machine Administration`.

The system displays the Digital Network Machine Administration window (Figure 4-23 on page 4-41).

3. Enter a *remote machine name* in the `Machine Name` field.

If you do not know the remote machine names, press `(CHOICES)` (F2) to select from a list of administered remote machines.

⇒ NOTE:

If you do not see `(CHOICES)` (F2) on the screen, press `(CHG-KEYS)` (F8).

4. Press `(ENTER)`.

The system displays information administered for the remote machine in fields on the screen.

5. When you finish viewing information for a remote machine, press `(CANCEL)` (F6) repeatedly to return to the main menu specific to your release (Figure 4-1 on page 4-5).

Viewing the Machine Profile Screen for Local or Remote Machines

To access and view the Machine Profile screen, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 4-1 on page 4-5), select:

```
> AUDIX Administration
```

The system displays a blank administration screen.

2. Enter **display machine *machine_name*** at the `enter command:` prompt. If you are viewing the local machine, you do not need to type in the `machine_name`.

The system displays the Machine Profile screen (Figure 4-18 on page 4-26) for the machine name you entered.

3. Press `NEXTPAGE` (F7). The system displays page 2 of the Machine Profile screen (Figure 4-19 on page 4-29).



NOTE:

Page 2 of the Machine Profile screen for a remote machine looks slightly different.

4. Press `CANCEL` (F1).

The cursor returns to the command line and the system displays the message `Command Successfully Completed`.

5. Enter an administrative command at the `enter command:` prompt or **exit** to leave AUDIX Administration.

Overview

Remote user administration consists of keeping the list of remote users on your system up-to-date. Keeping the list up-to-date means you need to run remote updates, manually add/change/delete users from time to time, and record user names into the INTUITY AUDIX system.

This chapter describes types of remote users and the various remote user administration options and is organized as follows:

- Setting up Remote Updates for Your Local System
- Setting up Remote Updates with Specific Remote Systems
- Running a Remote Update Manually
- Viewing the Remote Extensions List
- Setting Automatic Deletion of Non-Administered Remote Users
- Administering Remote Users Manually
- Recording Remote User Names

Purpose

The purpose of this chapter is to provide the system administrator with the necessary information and instructions to administer remote users in the INTUITY AUDIX system.

Types of Remote Users

There are 3 types of remote AUDIX users:

- Administered remote users

Administered remote users are users that you have defined as remote users within the INTUITY AUDIX system. You do this using the Remote Subscriber screen (Figure 5-10).

- Non-administered remote users

Non-administered remote users are remote users that are unknown to the local INTUITY AUDIX system.

- Verified non-administered remote users

Verified non-administered remote users are remote users who appear in the local INTUITY AUDIX database only because they successfully exchanged messages with the local system.

You should periodically check the List Remote Extensions screen (see Viewing the Remote Extensions List on page 5-14) and locate any verified remote users. If a local user regularly exchanges messages with a verified remote user, you may want to administer the remote user.

What are Remote Updates?

Remote updates provide an automatic method of administering remote users.

Remote updates:

- Let you automatically add *all* remote users who will exchange messages across the network
- Let your local INTUITY AUDIX system exchange user information with each INTUITY AUDIX, DEFINITY AUDIX, and AUDIX R1V5 or later remote system administered on the local system

Types of Remote Updates

The following list explains remote update types.

Complete updates	<p>With a complete update, all user information is exchanged between systems. When a new system is added to the network, each existing system should request a complete update from the new system to add the new users to the network. Complete updates may involve thousands of users and require heavy system resources. Perform complete updates during non-prime-time hours to reduce the impact on system users.</p> <p>Additionally, the local INTUITY AUDIX system can automatically schedule a non-prime-time complete update from a remote system if the local system finds discrepancies between databases.</p>
Partial updates	<p>Partial updates occur on a regular basis, such as weekly or nightly, to add or change information for users. Partial updates would occur, for example, when a new user is added to a remote or local system.</p> <p>If all systems in the network allow partial updates, then anytime a user is added to, deleted from, or changed on a system, that system notifies each system in the network of the change.</p>
Network turnaround	<p>Network turnaround lets networked systems exchange information using one connection. For example, if an INTUITY AUDIX system in Chicago calls a system in New York to send messages and give the New York system a user update, the New York system can <i>turn around</i> and send messages and user updates back to the Chicago system without ending the call. If network turnaround was turned off, the New York system would have had to call the Chicago system separately.</p> <p>The feature reduces long-distance toll charges by allowing systems to exchange information using one call instead of two. The calling system pays any toll charges. The feature also makes the network more efficient because the system must spend less time dialing and connecting with other systems. Only one turnaround cycle is permitted per call.</p>

Remote Updates Versus Manual Entries

Remote updates greatly reduce the time required to set up the INTUITY AUDIX digital network. Whether you use the remote updates feature depends on the number of users in your network, the size and disk space of your local system, and the number of networking ports that you are using.

⇒ NOTE:

Do not run remote updates until you first examine your system capabilities and consult with the design center. Your system may not be able to handle complete updates from all of the systems in your network.

You also can manually enter remote user information. Before you administer your user or remote update information, consult with the remote system administrators in your network. Each remote system administrator must determine whether to use remote updates.

Setting up Remote Updates for Your Local System

To set up remote updates on your local system, perform the following tasks:

1. Start at the main menu specific to your version of Lucent INTUITY, either Release 3 or Release 4 (Figure 5-1)

Lucent INTUITY Administration menu for Release 3

```
INTUITY (TM) Administration
>AUDIX Administration
  Call Accounting System
  Customer/Services Administration
  Networking Administration
  Switch Administration
  Switch Interface Administration
  Upgrade
  Voice System Administration
```

Lucent INTUITY Main Menu for Release 4

```
INTUITY (TM) Main Menu
AUDIX Administration
Customer/Services Administration
Networking Administration
Switch Interface Administration
Upgrade
Voice System Administration
```

Figure 5-1. Lucent INTUITY Main Menu for Release 3 and Release 4

2. Select:

```
>AUDIX Administration
```

The system displays a blank administration screen (Figure 5-2 on page 5-6).

4. Press **F7** (NEXTPAGE).

The system displays Page 2 of the Machine Profile screen (Table 5-4).

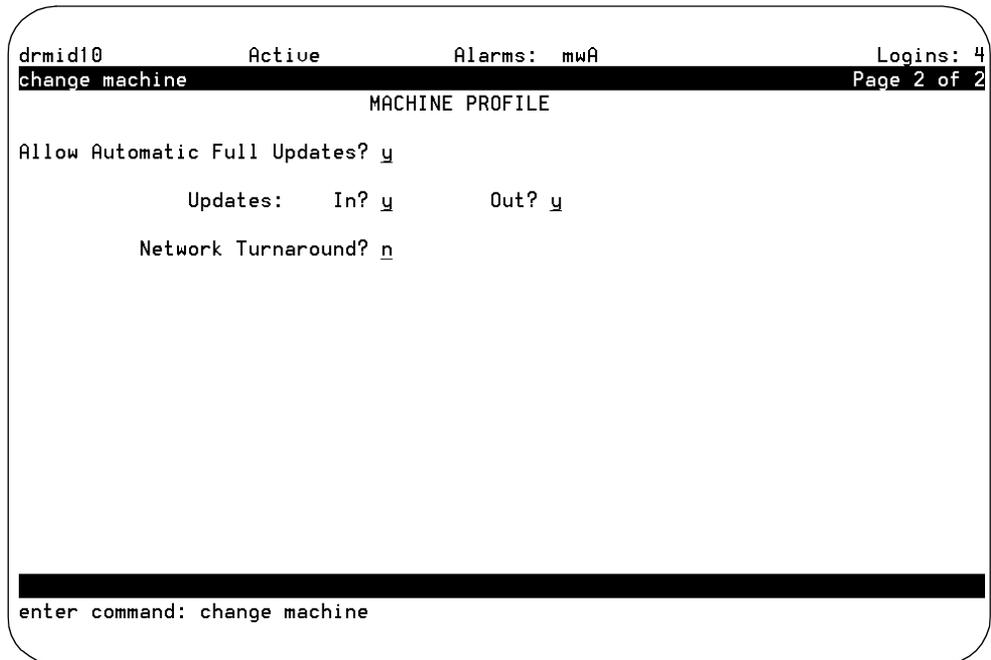


Figure 5-4. Machine Profile Screen, Page 2

5. Complete the fields on this screen using the information provided in Table 5-1.

Table 5-1. Field Definitions; Remote Machine Profile Screen, Page 2

Field	Description
Allow Automatic Full Updates Valid Input: y = yes n = no	If you enter <i>y</i> , the local INTUITY AUDIX system automatically runs updates or get data from remote systems when it finds significant discrepancies with the database of the remote system. A <i>y</i> entry in this field means the Updates In? field must also be set to <i>y</i> . If you enter <i>n</i> , the local INTUITY AUDIX system does not automatically run updates.
Updates In? Valid Input: y = yes n = no	If you enter <i>y</i> , this local INTUITY AUDIX system will accept updated user database information from any remote machine that has their Updates In? field set to <i>y</i> . If you enter <i>n</i> , the local INTUITY AUDIX system will not accept updates from any remote machine regardless of the entry on the remote Machine Profile screen. Set this field to <i>y</i> only after testing the network end-to-end during initial administration.

Continued on next page

Table 5-1. Field Definitions; Remote Machine Profile Screen, Page 2 — Continued

Field	Description
Updates Out? <i>Valid Input:</i> y = yes n = no	If you enter <i>y</i> , updates to user database information for local users are sent to any remote machine that has its <code>Updates Out</code> field set to <i>y</i> . If you enter <i>n</i> , updates will not be sent to any remote machine regardless of the entry for this field on the remote Machine Profile screen. Set this field to <i>y</i> only after testing the network end-to-end during initial administration.
Network Turnaround <i>Valid Input:</i> y = yes n = no	Enter <i>y</i> to allow a network connection that originated from this local INTUITY AUDIX system to turn around after the local INTUITY AUDIX system has sent all of its network data to any remote machine. The remote machine may then return update information, voice mail, and status on the same connection. Enter <i>n</i> to disable this feature.

- Press `(ENTER)` (F3) to save the information in the system database.
The cursor returns to the command line, and the system displays the message `Command Successfully Completed`.
- Enter an administrative command at the `enter command:` prompt or `exit` to leave AUDIX Administration.

Setting up Remote Updates with Specific Remote Systems

You have previously defined the remote update capabilities for the local system. However, you must also tell the local system what the remote update capabilities of each remote system should be.

To define the remote update capabilities of a specific remote system, perform the following tasks:

- Starting from the main menu specific to your release (Figure 5-1 on page 5-5), select:

```
>AUDIX Administration
```

The system displays a blank administration screen.

2. Enter **change machine *remote_machine_name*** at the `enter` command: prompt, where ***remote_machine_name*** is the name of a system that shares the network with your local system.



NOTE:

To see a list of remote systems, use the **list machines** command as described in Viewing the Machine Lists on page 4-53.

The system displays the Machine Profile screen (Figure 5-5) for the remote system.

```

AUDIX           Active           Alarms: none           Logins: 8
change machine dig1           Page 1 of 2
                                MACHINE PROFILE
Machine Name: dig1           Type: UEX           Location: remote-digital
Voiced Name? n           Extension Length: 4
Voice ID: 3           Default Community: 1
ADDRESS RANGES
Prefix           Start Ext.   End Ext.   Warnings
1: _____
2: _____
3: _____
4: _____
5: _____
6: _____
7: _____
8: _____
9: _____
10: _____
enter command: change machine dig1
    
```

Figure 5-5. Machine Profile Screen for a Remote System

3. Press `(NEXTPAGE)` (F7).

The system displays Page 2 of the screen (Figure 5-6).

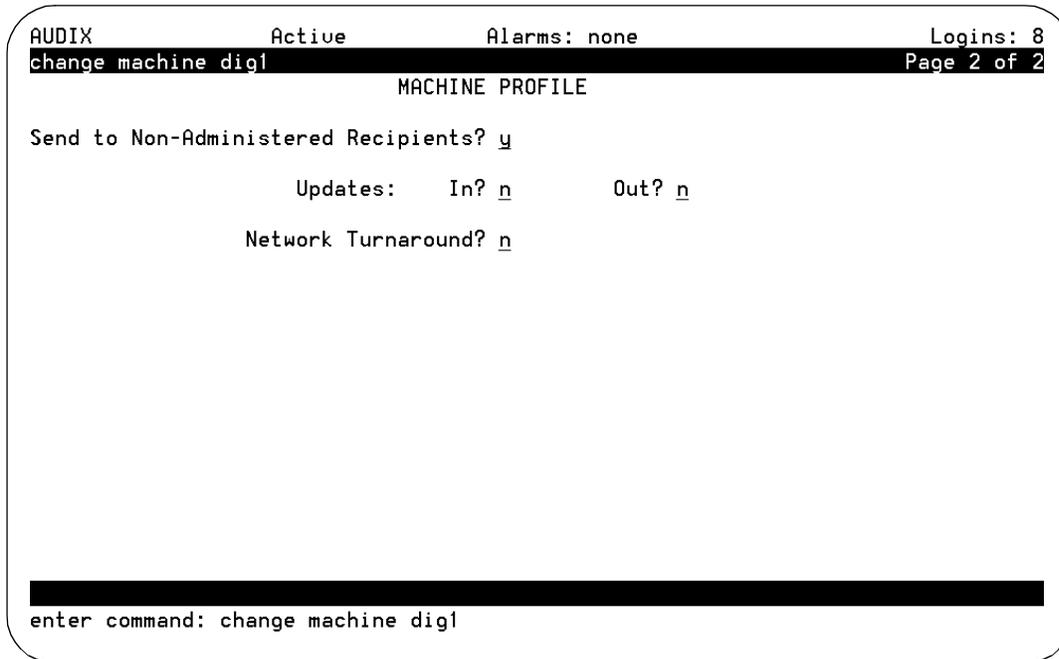


Figure 5-6. Machine Profile Screen, Page 2

4. Complete the fields on this screen using the information provided in Table 5-2.

Table 5-2. Field Definitions; Remote Machine Profile Screen, Page 2

Field	Description
Send to Non-Administered Recipients? Valid Input: y = yes n = no	If you enter <i>y</i> , your local system will attempt to send messages to non-administered users on the remote system. If you enter <i>n</i> , your system does not send messages to non-administered users on the remote system.
Updates In? Valid Input: y = yes n = no	If you enter <i>y</i> , this local INTUITY AUDIX system will accept updated user database information from any remote machine that has their Updates In? field set to <i>y</i> . If you enter <i>n</i> , the local INTUITY AUDIX system will not accept updates from any remote machine regardless of the entry on the remote Machine Profile screen. Set this field to <i>y</i> only after testing the network end-to-end during initial administration.

Continued on next page

Table 5-2. Field Definitions; Remote Machine Profile Screen, Page 2 — Continued

Field	Description
Updates Out? <u>Valid Input:</u> y = yes n = no	If you enter <i>y</i> , updates to user database information for local users are sent to any remote machine that has its <code>Updates Out</code> field set to y . If you enter <i>n</i> , updates will not be sent to any remote machine regardless of the entry for this field on the remote Machine Profile screen. Set this field to y only after testing the network end-to-end during initial administration.
Network Turnaround <u>Valid Input:</u> y = yes n = no	Enter <i>y</i> to allow a network connection that originated from this local INTUITY AUDIX system to turn around after the local INTUITY AUDIX system has sent all of its network data to any remote machine. The remote machine may then return update information, voice mail, and status on the same connection. Enter <i>n</i> to disable this feature.

5. Press `(ENTER)` (F3) to save the information in the system database.
The cursor returns to the command line, and the system displays the message `Command Successfully Completed`.
6. Enter an administrative command at the `enter command:` prompt or **exit** to leave AUDIX Administration.

Running a Remote Update Manually

You may need to run a remote update manually to populate the user database quickly or to correct database inconsistencies discovered during an audit. To run a remote update manually, do the following:

1. Starting from the main menu specific to your release (Figure 5-1 on page 5-5), select:

```
>AUDIX Administration
```

The system displays a blank AUDIX screen (Figure 5-2).

2. Enter **list measurements feature day** at the `enter` command: prompt.

The system displays the Feature Daily Traffic screen.

3. Write down the current number of remote users.

4. Press **F6** (CANCEL).

The cursor returns to the command line.

5. Enter **get remote_updates remote_machine_name** at the `enter` command: prompt, where **remote_machine_name** is the name of a system that shares the network with your local system.

The system displays the Remote Update Request screen (Figure 5-7).

```
drmid11 Active Alarms: mWA Logins: 4
get remote_updates lzbart Page 1 of 1
REMOTE UPDATE REQUEST

Request Full Update from Machine: lzbart

Status of Last Update: completed

Last Completed Update: 01/10/94 19:54

Press [Enter] for Full Update Request
[Cancel] to Abort

enter command: get remote_updates lzbart
```

Figure 5-7. Remote Update Request Screen

6. Press **ENTER** to begin the remote update, or press **CANCEL** (F6).

The system begins the remote update.

⇒ NOTE:

The update may take some time, possibly hours, depending on the number of users on the remote system.

7. When the remote update is complete, enter **list remote extensions remote_machine_name** at the `enter command:` prompt, where **remote_machine_name** is the name of a system that shares the network with your local system.

The system displays the List Remote Extensions screen (Figure 5-8 on page 5-15).

8. Check to see that the remote users are listed on the local system.
9. Enter **list measurements feature day** at the `enter command:` prompt.
The system displays the Feature Daily Traffic screen.
10. Verify the new number of remote users.
11. Enter **display administration-log** at the `enter command:` prompt.
The system displays the Administration Log screen.
12. Verify that no conflicts or problems occurred with the remote update.
13. Press **CANCEL** (F1).
The cursor returns to the command line, and the system displays the message `Command Successfully Completed`.
14. Enter an administrative command at the `enter command:` prompt or **exit** to leave AUDIX Administration.

Viewing the Remote Extensions List

Use the Remote Extensions List to locate non-administered verified remote users and evaluate the usage dates of remote users. Although there is a record for the user, the system does not know the name, name recording, and other information.

To determine how often messages are sent to a user, check the `Usage Date` field on the List Remote Extensions screen. Use the field also to determine if you can delete any administered remote users. If the `Usage Date` field shows a current date, then the remote administered user does not exchange messages with anyone on the local system. You can remove the user and increase your disk space.

To access and view the List Remote Extensions screen, perform the following tasks:

1. Starting from the Main Menu (Figure 5-1 on page 5-5), select:

```
>AUDIX Administration
```

The system displays a blank administration screen.

2. Enter **list remote-extension *remote_machine_name*** at the `enter command:` prompt, where ***remote_machine_name*** is the name of a system that shares the network with your local system.

The system displays the List Remote Extensions screen (Figure 5-8 on page 5-15). The screen lists all administered and verified non-administered remote users for the machine name you entered.

⇒ NOTE:

To see a list of remote systems, use the **list machines** command as described in Viewing the Machine Lists on page 4-53.

```
drmid10           Active           Alarms: mWA           Logins: 4
list remote-extensions drbig10           Page 1
LIST REMOTE EXTENSIONS

Extension      Name                               Type           Usage Date
38000          williford,shirl                   administered   10/14/93
38001          jones,marcia ka                   administered   10/14/93
38002          lee,winston how                   administered   10/14/93
38003          moore,phyllis j                   administered   10/14/93
38004          ponds,connie br                   administered   10/14/93
38005          ratanasin,brigi                   administered   10/14/93
38006          warrior,eli                       administered   10/14/93
38007          wilkerson,cliff                   administered   10/14/93
38008          ha,diep ngoc                      administered   10/14/93
38009          harris,calvin e                   administered   10/14/93
38010          hobby,mary leak                   administered   10/14/93
38011          horton,robert b                   administered   10/14/93
38012          jones,rhoda win                   administered   10/14/93
38013          madsen,egon roy                   administered   10/14/93
38014          varughese, john                   administered   10/14/93

Press [NextPage], [PreuPage] or [Cancel]
enter command: list remote-extensions drbig10
```

Figure 5-8. List Remote Extensions Screen

3. Check the usage dates for both verified and administered users.

If a verified user has a recent usage date (perhaps within the last month), you may wish to administer the user and record the user's name.

If an administered user does not have a recent usage date, you may wish to delete the user.

4. Press **CANCEL** (F1).

The cursor returns to the command line, and the system displays the message `Command Successfully Completed`.

5. Enter an administrative command at the `enter command:` prompt or **exit** to leave AUDIX Administration.

Setting Automatic Deletion of Non-Administered Remote Users

You can use the System Parameters Features screen to request that non-administered remote users be deleted automatically. To do so, perform the following tasks:

1. Starting from the Main Menu (Figure 5-1 on page 5-5), select:

```
>AUDIX Administration
```

The system displays a blank administration screen.

2. Enter **change system-parameters features** at the `enter` command prompt.

The system displays Page 1 of the System Parameters Features screen.

3. Press `(NEXTPAGE)` (F7) until page 4 displays (Figure 5-9).

```
drmid2          Active          Alarms: mwa          Logins: 3
change system-parameters features          Page 4 of 4
SYSTEM-PARAMETERS FEATURES

NETWORKING PARAMETERS

Automatic Deletion of Non-administered Remote Subscribers
Days without Activity: 0          Even If on a Mailing List? n

enter command: change system-parameters features
1Cancel 2Refresh 3Enter 4ClearFld 5Help 6Choices 7NextPage 8PrevPage
```

Figure 5-9. System Parameters Features Screen, Page 4

4. Complete the fields on this screen using the information provided in Table 5-3 on page 5-17.

Table 5-3. Field Definitions; System Parameters Features Screen, Page 4

Field	Description
Automatic Deletion of Non-administered Remote Subscribers <u>Valid Input:</u> y = yes n = no	Enter <i>y</i> to tell the system to automatically delete non-administered remote users during the nightly audit. The system will also delete them if you manually run a user data audit. Enter <i>n</i> to have the system retain remote users until you wish to delete them manually. Set this field to n if you have non-AUDIX users (for example, non-administered e-mail users) who exchange messages with your AUDIX users.
Days without Activity <u>Valid Input:</u> an integer from 0 – 999	Enter <i>the number of days that must elapse</i> before a remote user who shows no activity with the local system is deleted.
Even If on a Mailing List? <u>Valid Input:</u> y = yes n = no	Enter <i>y</i> to tell the system to delete users even if they are on a local INTUITY AUDIX mailing list. The remote users also are deleted from the mailing list(s) during the next audit. Enter <i>n</i> to retain remote users who are on local mailing lists. Set this field to n if the users on your system are heavy users of mailing lists, or you have purchased the Enhanced List Application feature.

5. Press **ENTER** (F3) to save the information in the system database.
 The cursor returns to the command line, and the system displays the message `Command Successfully Completed`.
6. Enter an administrative command at the `enter command:` prompt or **exit** to leave AUDIX Administration.

Administering Remote Users Manually

Remote updates can tie up one of your networking ports for quite some time. Thus, if you want to administer a remote user immediately but you do not want to tie up any ports, you may wish to administer that user manually.

Adding a Remote User Manually

To manually add a remote user, perform the following tasks:

1. Starting from the Main Menu (Figure 5-1 on page 5-5), select:

```
>AUDIX Administration
```

The system displays a blank administration screen.

2. Enter **add remote-subscriber *machine_name*** at the `enter` command prompt, where *machine_name* is the name of the remote machine on which the remote user is administered.

The system displays the Remote Subscriber screen (Figure 5-10).

```

drmid11      Active      Alarms: MmWA      Logins: 3
change remote-subscriber drmid10 36108      Page 1 of 1
          REMOTE SUBSCRIBER

Subscriber Name: adler,sharon      Extension: 36108
Machine Name: drmid10
Address: 36108

Community ID: 1
Administered? y
Voiced Name? y
Non-Administered Type:      Last Usage Date: 01/20/96

enter command: change remote-subscriber drmid10 36108
1Cancel 2Refresh 3Enter 4ClearFld 5Help 6Choices 7NextPage 8PrevPage

```

Figure 5-10. Remote Subscriber Screen

3. Complete the fields on this screen using the information provided in Table 5-4 on page 5-19.

Table 5-4. Field Definitions; Remote Subscriber Screen — Page 1

Field	Procedure/Description
<p>Name</p> <p><u>Valid Input:</u></p> <p>1- to 29- alphabetic characters</p>	<p>Enter <i>the name of the remote user to be added or changed</i>. This is a mandatory input field; there is no default value. The name must be unique.</p> <p>We suggest that you enter the last name first, then a comma, then the first name, for example <i>Doe,Jane</i>. However, any combination of letters may be used. (Notice that there are no embedded spaces in the example, that is, it was not entered <i>Doe, Jane</i> . We recommend that you enter names this way.)</p> <p>Furthermore, in places where telephones have letters accompanying the numbers, each name must be unique as entered on the keypad of a touch tone telephone, for example, <i>Doe,JaneA</i> and <i>Doe,JaneZ</i> to distinguish between two Jane Does.</p>
<p>Extension</p> <p><u>Valid Input:</u></p> <p>a 3- to 10-digit telephone extension</p>	<p>Enter the <i>user's telephone extension</i>. The extension must be:</p> <ul style="list-style-type: none"> ■ Within the range of numbers assigned to your system. ■ Not be assigned to another local user ■ Of valid length on the local Lucent INTUITY machine
<p>Machine Name</p> <p><u>Valid Input:</u></p> <p>1 – 10 alphanumeric characters</p>	<p>Enter the name of the <i>machine on which the remote user is administered</i>, if the user is an administered user.</p> <p>Non-administered users may added to up to 16 machines. However, you do not enter the information for this type of user. You may access such a user during your daily, weekly, or monthly administration processes.</p> <p>The machine name must adhere to the following rules:</p> <ul style="list-style-type: none"> ■ The machine name cannot contain blank (embedded) spaces. For example, <i>denver 1</i> is not allowed, but <i>denver_1</i> is allowed. ■ This is a case-sensitive field. Upper-case letters must be entered as upper case, and lower-case letters as lower case. ■ Hyphen (-) are allowed ■ Underscore (_) are allowed ■ The machine name cannot start with a number.
<p>Community ID:</p> <p><u>Valid Input:</u></p> <p>blank or an integer from 1 to 15</p>	<p>Enter the <i>community ID</i> to be assigned to this user. A <i>community</i> is a group of users that is restricted from sending messages to other designated groups. For more information on community sending restrictions, see the administration guide for your release of INTUITY AUDIX.</p> <p>If this field is left blank, the system default community ID from the Machine screen for the local machine is used. See Figure 3-10 on page 3-21 for restrictions on sending messages between communities.</p>

Continued on next page

Table 5-4. Field Definitions; Remote Subscriber Screen — Page 1 — Continued

Field	Procedure/Description
Administered? <i>Valid Input:</i> display only	When you add a remote user, the system automatically places a y in the field. If a remote system calls the local system and sends a message from a non-administered remote user, the local system creates a verified remote user record in the database and places an n in the field.
Voiced Name? <i>Valid Input:</i> display only	The Voice Name field contains an n until you record a name for the machine. This field automatically changes to y when you record a name for the machine.
Non-Administered Type <i>Valid Input:</i> display only	This field displays the type of non-administered user, such as <i>verified</i> .
Last Usage Date <i>Valid Input:</i> display only	This field displays the most recent date the remote user received a message in the Last Usage Date field. The field helps you determine the call traffic for the user.

4. Press **(ENTER)** (F3) to save the information in the system database.
The cursor returns to the command line, and the system displays the message `Command Successfully Completed`.
5. Repeat step 2 through step 4 for each remote user you need to add.
6. Enter an administrative command at the `enter command:` prompt or **exit** to leave AUDIX Administration.

Changing Remote User Data Manually

To manually change a remote user's data, perform the following tasks:

1. Starting from the Main Menu (Figure 5-1 on page 5-5), select:

```
>AUDIX Administration
```

The system displays a blank administration screen.

2. Enter **change remote-subscriber *remote_user_extension*** at the `enter command:` prompt, where ***remote_user_extension*** is the extension of a user on the remote networked system.

The system displays the Remote Subscriber screen (Figure 5-10 on page 5-18).



NOTE:

To see a list of remote users, use the **list remote extension** command. See Setting up Remote Updates for Your Local System on page 5-5.

3. Complete the fields on this screen using the information provided in Table 5-4 on page 5-19.
4. Press `ENTER` (F3) to save the information in the system database.
The cursor returns to the command line, and the system displays the message `Command Successfully Completed`.
5. Repeat step 2 through step 4 for each remote user you need to update.
The cursor returns to the command line, and the system displays the message `Command Successfully Completed`.
6. Enter an administrative command at the `enter command:` prompt or **exit** to leave AUDIX Administration.

Deleting Remote Users Manually

You may need to remove a remote user from the system manually. For example, to save system resources, you may want to delete an administered remote user with an old last usage date.

To remove remote users manually, perform the following tasks:

1. Starting from the Main Menu (Figure 5-1 on page 5-5), select:

```
>AUDIX Administration
```

The system displays a blank administration screen.

2. Enter **remove remote-subscriber *machine_name remote_user_extension*** at the `enter command:` prompt, where ***machine_name*** is the name of the networked system and ***remote_user_extension*** is the extension of a user on that system.

The system displays the following message:

```
Press [Enter] to execute or [Cancel] to abort.
```

3. Press **ENTER** (F3) to remove the remote user from the system database.
The cursor returns to the command line, and the system displays the message `Command Successfully Completed`.
4. Repeat step 2 and step 3 for each remote user you need to delete.
5. Enter an administrative command at the `enter command:` prompt or **exit** to leave AUDIX Administration.

Recording Remote User Names

You can verbally record remote user names into the system. Then, when a local user addresses a message to a remote user, the system plays back the remote user's name as a friendly confirmation.

⇒ NOTE:

If you use the Remote Updates feature (see Running a Remote Update Manually above) and a name was recorded for the user on the remote system, the recorded name is updated on the local system as part of the remote update. Also, if you have the `Updates In` field set to `y` on both the local and remote Machine Profile screens (Figure 5-4), any new or changed recorded names will be updated.

To record a remote user name, perform the following tasks:

1. From any telephone, log into the AUDIX administrator's mailbox.
2. Press **9** to access the system administrator's menu.
3. Press **4** to record the remote user names.
The system plays the following prompt:
"Enter remote user extension and pound sign."
4. Enter the extension for the remote user and press **#**.
5. At the tone, speak the user's name.
6. Before you approve the recording, you have the following options:
 - Press **2 3** to listen to the remote user name recording.
 - Press **2 1** to record the remote user name again.
 - Press *** D** to delete the remote user name recording.
7. When you are satisfied with the quality of the recording, press **#** to approve it.
8. Repeat Steps 4 through 7 to record the next remote user name.
9. When you finish recording all remote user names, hang up the telephone.

Verify a User's Name Recording

To verify that you have successfully recorded the name, perform the following tasks:

1. Starting from the Main Menu (Figure 5-1 on page 5-5), select:

```
>AUDIX Administration
```

The system displays a blank administration screen.

2. Enter **display remote-user *remote_user_extension*** at the `enter command:` prompt, where ***remote_user_extension*** is the extension of a user whose recording you want to verify.

The system displays the Remote Subscriber screen (Figure 5-10).

3. Verify that the `Voiced Name` field contains the value `y`. If you want to remove the remote user name, set this field to `n`.
4. Press `(ENTER)` (F3) to save the information in the system database.

The cursor returns to the command line, and the system displays the message `Command Successfully Completed`.

5. Enter an administrative command at the `enter command:` prompt or **exit** to leave AUDIX Administration.

Monitoring Traffic and Using the Networking Reports

6

Overview

Your system has several reports about networking. These reports provide statistics on messages sent and received over the AUDIX network. They also help you identify the source of problems and help ensure the efficient operation of the network.

The INTUITY AUDIX system provides the following four network traffic reports:

- Network Load Hourly Traffic Report
- Network Load Daily Traffic Report
- Remote Messages Daily Traffic Report
- Remote Messages Monthly Traffic Report

Purpose

This chapter describes how to monitor network traffic. This chapter also describes the network reports and how to access them.

Monitoring Traffic

Use network traffic reports to monitor AUDIX network traffic, specifically:

- Channel usage
- The number of remote messages sent and received on each channel
- Session failures
- Messages rejected
- Exceptions

An unusual number for any of these items can represent problems with your network facilities. For example, a high number of calls with a low number of transfer sessions may mean systems have trouble connecting. Transmission failures and rescheduled messages can also indicate connection troubles.

Check these items on each system in your network, not just your local system. Also, you should print out reports periodically over time and watch for trends. If, after several months, you see your traffic go up 50 or 100 percent, you know something has changed or is wrong.

Network Load Daily Traffic Report

The Network Load Daily Traffic report shows network channel traffic one day at a time for up to 32 days. This report can show any nodes that are exceeding specified threshold limits, how many calls went unanswered, the number of calls on each channel, and other channel traffic information.

⚠ CAUTION:

If the system goes down (loses power or reboots), traffic data for the hour(s) during which the system went down is lost.

Accessing the Network Load Daily Traffic Report

You access the report in one of two ways.

Via Networking Administration

To access the report via the Networking Administration Main Menu option, perform the following tasks:

1. Start at the main menu specific to your version of Lucent INTUITY, either Release 3 or Release 4 (Figure 6-1)

Lucent INTUITY Administration menu for Release 3

```
INTUITY (TM) Administration
>AUDIX Administration
  Call Accounting System
  Customer/Services Administration
  Networking Administration
  Switch Administration
  Switch Interface Administration
  Upgrade
  Voice System Administration
```

Lucent INTUITY Main Menu for Release 4

```
INTUITY (TM) Main Menu
AUDIX Administration
Customer/Services Administration
Networking Administration
Switch Interface Administration
Upgrade
Voice System Administration
```

Figure 6-1. Lucent INTUITY Main Menu for Release 3 and Release 4

2. Select:

```
> Networking Administration
> Networking Traffic
> Daily Report
```

The system displays the Daily Traffic Date screen (Figure 6-2).

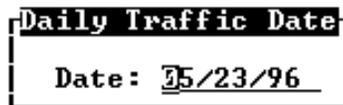


Figure 6-2. Daily Traffic Date Screen

3. Enter a *date in the format mm/dd/yy*. This date is a starting date up to 31 days previous to the current date. The default is the current date.
4. Press **SAVE** (F3).

The system displays Page 1 of the Network Load Daily Traffic Report (Figure 6-3 on page 6-5).

Via AUDIX Administration

To access a Network Load Daily Traffic report via AUDIX Administration, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 6-1 on page 6-3), select:

```
>AUDIX Administration
```

2. At the command line, enter either:

Full Command Version		Short Command Version
list measurements network-load	or	li me ne
list measurements network-load <i>mm/dd/yy</i>	or	li me ne <i>mm/dd/yy</i>

where ***mm/dd/yy*** is the date that you would like as a starting point for the report. This date can be up to 31 days previous to the current date. If no date is entered, the current date is used.

The report displays 2 pages of traffic information for each day.



NOTE:

Precede **list** with **print** to print the contents of the screens.

The system displays Page 1 of the Network Load Daily Traffic Report (Figure 6-3 on page 6-5). Table 6-1 describes the fields on the screen.

```

drmid10      Active      Alarms: mWA      Logins: 5
list measurements network-load day      Page 1
NETWORK LOAD DAILY TRAFFIC

Date : 02/14/96      Ending Time: 10:24

Total Message Transmission Threshold Exceptions: 0
Total Message Transmission Limit Exceptions : 0
Remote Deliveries Rescheduled : 0
Maximum Simultaneous Channels : 3
Total Incoming Calls Unanswered : 0
Total Remote Undeliverable Messages : 0

Press [NextPage], [PreVPage] or [Cancel]
enter command: list measurements network-load day
    
```

Figure 6-3. Network Load Daily Traffic, Page 1 Screen

Table 6-1. Field Definitions: Network Load Daily Traffic, Page 1

Field	Description
Date:	The starting date of the report. This is the date, if any, you entered on the command line. If the date is previous to the current date, each day's record up to the current date is presented as an additional page (screen). Press (NEXTPAGE) and (PREVPAGE) to scroll through each daily report record.
Ending Time:	The clock time when data collecting ended.

Continued on next page

Table 6-1. Field Definitions: Network Load Daily Traffic, Page 1 — Continued

Field	Description
Total Message Transmission Threshold Exceptions:	<p>The local system puts messages to networked users in a queue and attempts to send the messages. When the messages in the queue exceed 150, the value in the Total Message Transmission Threshold Exceptions field increases by one.</p> <p>A large number indicates that digital networking has a problem and cannot transmit messages. Check the Alarm Log for alarms or call your service support group. The problems may be due to facility problems or a remote machine that is out of service or experiencing heavy traffic.</p> <p>The threshold of 150 is fixed. You cannot administer it.</p>
Total Message Transmission Limit Exceptions:	<p>When the message transmission queue reaches 250 messages, the value in the Total Message Transmission Limit Exceptions field increases by one. When this occurs, digital networking neither accepts incoming networked messages nor queues messages to be sent out.</p> <p>Check the Alarm Log for alarms or call your service support group. The problem may be the same as those of Transmission Threshold Exceptions.</p> <p>The limit of 250 is fixed. You cannot administer it.</p>
Remote Deliveries Rescheduled:	<p>The number of messages that were rescheduled because of transmission difficulties, low disk space, a full mailbox, or an out-of-service remote system.</p>
Maximum Simultaneous Channels:	<p>The number of networking channels that were active simultaneously during the reporting period.</p>
Total Incoming Calls Unanswered:	<p>The number of incoming calls that could not be answered because too many networking channels were in use when the calls came in.</p>
Total Remote Undeliverable Messages:	<p>The total number of messages that the network cannot send due to sending restrictions, community ID settings, or a subscriber addressing a message to a broadcast mailbox. The messages are tagged as undeliverable.</p>

3. Press **(NEXTPAGE)** (F3 for the Networking Administration window; F7 for the AUDIX Administration screen) to access page 2 of the report (Figure 6-4). Table 6-2 describes the fields on the screen.

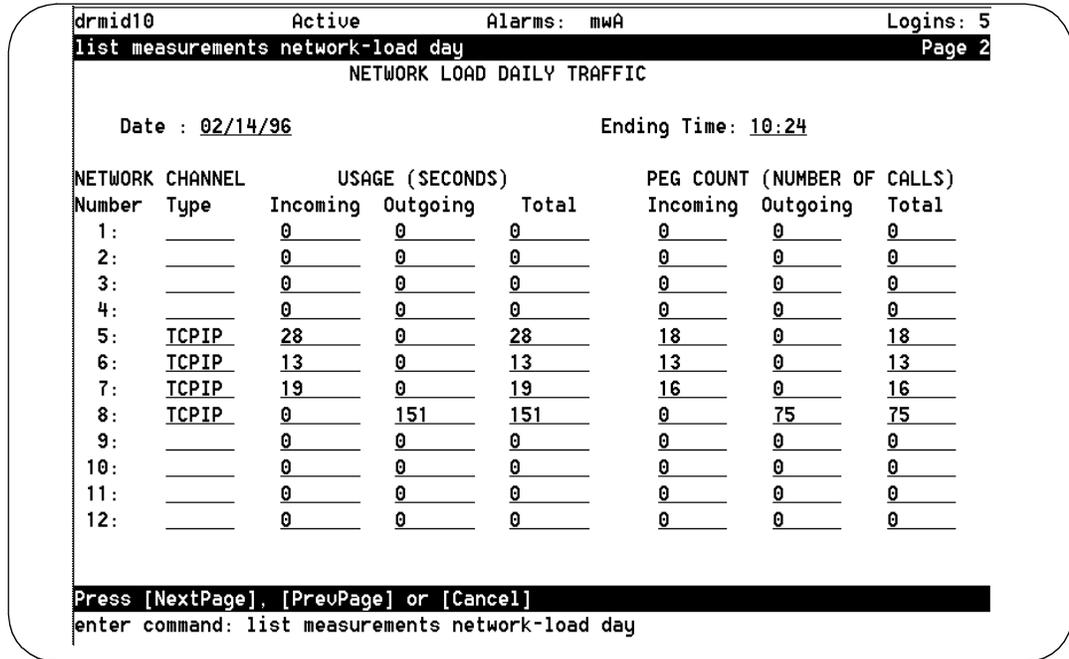


Figure 6-4. Network Load Daily Traffic, Page 2 Screen

Table 6-2. Field Definitions: Network Load Daily Traffic, Page 2 screen

Field	Description
NETWORK CHANNEL, Number	The networking channel that the line of data applies to.
NETWORK CHANNEL, Type:	The type of channel — DCP, RS-232, or TCP/IP.
NETWORK CHANNEL USAGE, Incoming/Outgoing/Total	The number of seconds the associated network channel was active with incoming and outgoing calls during the reporting period. The total seconds of activity are also provided.
NETWORK CHANNEL PEG COUNT, Incoming/Outgoing/Total	The number of incoming and outgoing calls on each network channel during the reporting period. The total number of calls is also provided. Peg counts help you compare the number of calls received to the number of calls sent. If you see a low number of Peg Count Incoming and Outgoing calls and a low Usage Incoming and Outgoing time on the same channel, that channel may have a problem. You should then diagnose that channel (See Chapter 7, "Troubleshooting").

4. Press **CANCEL** (F1) to return the cursor to the command line.
5. Enter an administrative command at the `enter command:` prompt or type **exit** to leave AUDIX Administration.

Network Load Hourly Traffic Report

The Network Load Hourly Traffic report shows network channel traffic one hour at a time for up to 192 hours (8 days). This report can show any nodes that are exceeding specified threshold limits, how many calls went unanswered, the number of calls on each channel, and other channel traffic information.

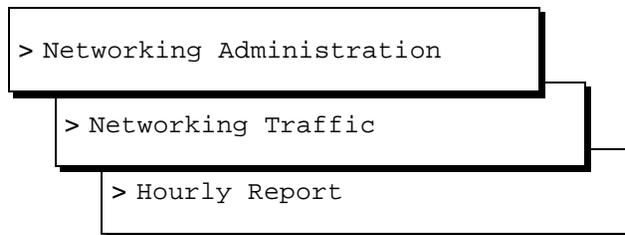
Accessing the Network Hourly Traffic Report

You access the report in one of two ways.

Via Networking Administration

To access the report via the Networking Administration Main Menu option, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 6-1 on page 6-3), select:



The system displays the Hourly Traffic Time screen (Figure 6-5).

```
Hourly Traffic Time
Date: 01/19/94
Hour: 07
```

Figure 6-5. Hourly Traffic Time Screen

2. Enter a *date in the format mm/dd/yy*. This date is a starting date up to seven days previous to the current date. The default is the current date.
3. Enter an *hour from 00:01 to 23:59 (in 24-hour clock time)*. 00:01 represents the hour from midnight to 1:00 a.m. and 23:01 represents the hour from 11:00 p.m. to midnight. This time is a starting time on the specified date. The default is the current hour.

4. Press **SAVE** (F3) to view the information for the date you entered.
5. The system displays the Network Load Hourly Traffic screen (Figure 6-6 on page 6-10). Use the information in Table 6-2 on page 6-7 to help you complete the fields.

Via AUDIX Administration

To access a Network Load Hourly Traffic report, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 6-1 on page 6-3), select:

```
>AUDIX Administration
```

The system displays a blank administration screen.

2. At the command line, enter either:

Full Command Version		Short Command Version
list measurements network-load hour	or	li me ne h
list measurements network-load <i>mm/dd/yy/hh</i>	or	li me ne <i>mm/dd/yy hh</i>

where *mm/dd/yy* is the starting date up to 7 days previous to the current date and *hh* is the 24-hour clock time up to 191 hours previous to the current hour that you would like as a starting point for the report.

A date specification must precede an hour specification. If no date is entered, the current hour of the current date is used. If no hour is entered, the report starts with the first hour of the date specified.

This report displays 2 pages of traffic information for each hour.

⇒ NOTE:

Precede **list** with **print** to print the contents of the screens.

The system displays the Network Load Hourly Traffic screen (Figure 6-6 on page 6-10). Table 6-3 on page 6-10 describes the fields in this screen.

```

drmid10           Active           Alarms: mWA           Logins: 5
list measurements network-load hour           Page 1
    NETWORK LOAD HOURLY TRAFFIC

    Date : 02/14/96   Hour: 11           Ending Time: 11:33

Total Message Transmission Threshold Exceptions: 0
Total Message Transmission Limit Exceptions      : 0
Remote Deliveries Rescheduled                   : 0
Maximum Simultaneous Channels                   : 2
Total Incoming Calls Unanswered                 : 0
Total Remote Undeliverable Messages            : 0

Press [NextPage], [PrevPage] or [Cancel]
enter command: list measurements network-load hour
    
```

Figure 6-6. Network Load Hourly Traffic, Page 1 Screen

Table 6-3. Field Definitions: Network Load Hourly Traffic, Page 1

Field	Procedure/Description
Date:	This field displays the starting date of the report. This is the date you entered on the command line. If a date previous to the current date was entered, each day's record is presented as an additional page (screen). Press (NEXTPAGE) and (PREVPAGE) to "scroll" through each hourly report record.
Hour:	The hour indicates the starting hour for which traffic data were collected for the report. It is the hour entered on the command line, or the current hour if nothing was entered.
Ending Time:	The time indicates the clock time at which data collecting ended.

Continued on next page

Table 6-3. Field Definitions: Network Load Hourly Traffic, Page 1 — Continued

Field	Procedure/Description
Total Message Transmission Threshold Exceptions:	<p>The local system puts messages to networked users in a queue and attempts to send the messages. When the messages in the queue exceed 150, the value in the Total Message Transmission Threshold Exceptions field increases by one.</p> <p>A large number indicates that digital networking has a problem and cannot transmit messages. Check the Alarm Log for alarms or call your service support group. The problems may be due to facility problems or a remote machine that is an out of service or experiencing heavy traffic.</p> <p>The threshold of 150 is fixed. You cannot administer it.</p>
Total Message Transmission Limit Exceptions:	<p>When the message transmission queue reaches 250 messages, the value in the Total Message Transmission Limit Exceptions field increases by one. When this occurs, digital networking neither accepts incoming networked messages nor does it queue messages to be sent out.</p> <p>To correct the problem, check the Alarm Log for alarms or call your service support group. The problem may be the same as those of Transmission Threshold Exceptions.</p> <p>The limit of 250 is fixed. You cannot administer it.</p>
Remote Deliveries Rescheduled:	<p>The number of messages that were rescheduled because of transmission difficulties, low disk space, a full mailbox, or an out-of-service remote system.</p>
Maximum Simultaneous Channels:	<p>The number of networking channels that were active simultaneously during the reporting period.</p>
Total Incoming Calls Unanswered:	<p>The number of incoming calls that could not be answered because too many networking channels were in use when the call came in.</p>
Total Remote Undeliverable Messages:	<p>The total number of messages that the network cannot send due to sending restrictions, community ID settings, or when a user addresses a message to a broadcast mailbox. The messages are tagged as undeliverable.</p>

3. Press **(NEXTPAGE)** (F3 in Networking Administration; F7 in AUDIX Administration) to access page 2 of the report (Figure 6-7 on page 6-12). Table 6-4 on page 6-12 describes the fields on the screen.

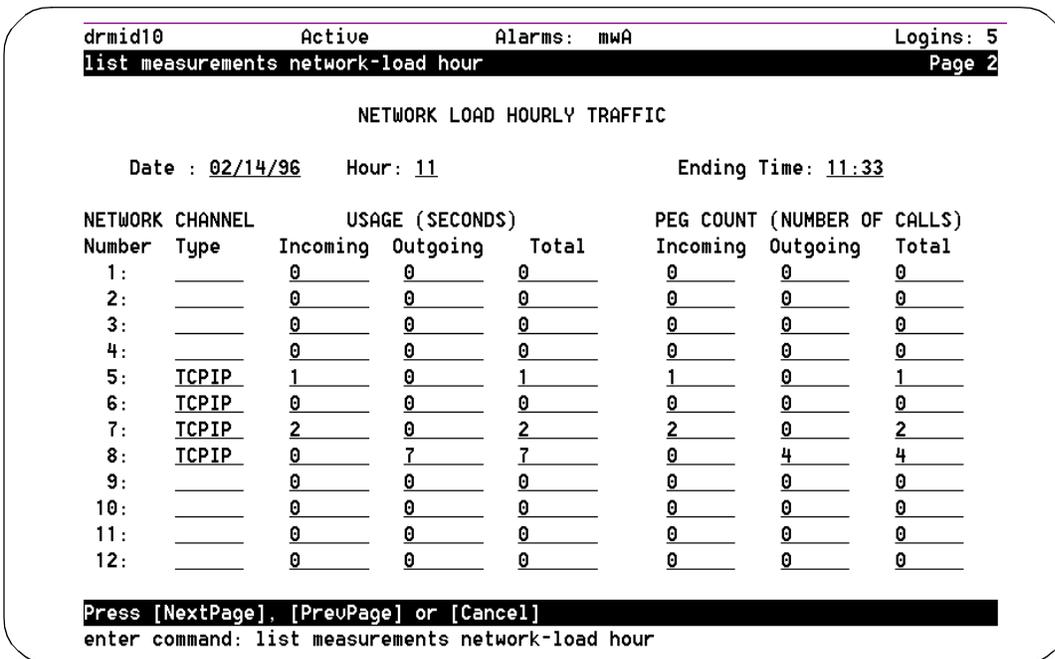


Figure 6-7. Network Load Hourly Traffic, Page 2 Screen

Table 6-4. Field Definitions: Network Load Hourly Screen, Page 2

Field Name	Description/Procedure
Date	The date in this field indicates the starting date for which traffic data were collected for the report. It is the date you entered on the command line, or the current date if you did not specify a date. If you enter a date previous to the current date, each day's record is presented as an additional page (screen). Press (NEXTPAGE) and (PREVPAGE) to "scroll" through each daily report record.
Hour	The hour indicates the starting hour for which traffic data were collected for the report. It is the hour you entered on the command line, or the current hour if you did not specify an hour.
Ending Time:	The time indicates the time at which data collecting ended.
NETWORK CHANNEL, Number	This column indicates the maximum available nodes for an AUDIX Release 4 system.
NETWORK CHANNEL, Type:	The values in these fields indicate the administered networking channels – DCP, RS-232, or TCP/IP. If the network channel type is administered during the record collection period, the new channel type is shown.

Continued on next page

Table 6-4. Field Definitions: Network Load Hourly Screen, Page 2 — Continued

Field Name	Description/Procedure
NETWORK CHANNEL USAGE, Incoming/Outgoing/Total	The number of seconds that each network channel was active with incoming and outgoing calls during the recording period. The total seconds of activity are also provided.
NETWORK CHANNEL PEG COUNT, Incoming/Outgoing/Total	The number of incoming and outgoing calls on each network channel during the recording period. The total number of calls is also provided.

4. Press `CANCEL` (F1) to return the cursor to the command line.
5. Enter an administrative command at the `enter command:` prompt or type **exit** to leave AUDIX Administration.

Remote Messages Daily Traffic Report

The Remote Messages Daily Traffic report gathers up to 8 days' worth of information about traffic load between a local AUDIX and a specified remote AUDIX machine.

To run a Remote Messages Daily Traffic report, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 6-1 on page 6-3), select:

```
>AUDIX Administration
```

The system displays a blank administration screen.

2. At the command line, type either:

Full Command Version

list measurements remote-messages day *machine*

list measurements remote-messages day *machine mm/dd/yy*

Short Command Version

li me re d *machine*

li me re d *machine mm/dd/yy*

where ***machine*** is the name of the remote AUDIX machine for which you would like information, and ***mm/dd/yy*** is the starting date up to 7 days previous to the current date that you would like as a starting point for the report.

If no date is entered, the current date is used.

⇒ NOTE:

list can be preceded by **print** to print the contents of the screens.

The system displays the Remote Messages Daily Traffic screen (Figure 6-8 on page 6-15). Table 6-5 on page 6-15 describes the fields on the screen.

```

drmid10          Active          Alarms: mWA          Logins: 8
list measurements remote-messages day drintuit          Page 1
                REMOTE MESSAGES DAILY TRAFFIC

Machine Name : drintuit          Machine Type: audix
Date : 02/14/96          Ending Time : 15:33

                LOCAL ORIGINATION          REMOTE ORIGINATION
                Prime   Non-Prime          Prime   Non-Prime
Transfer Sessions: 0           0           0           0
Usage (seconds) : 0           0           0           0
Average Usage   : 0           0           0           0
Messages Sent   : 0           0           0           0
Messages Rejected: 0          0           0           0
Status Sent     : 0           0
Status Received :

Headers Sent    :

Message Transmission Threshold Exceptions: 0
Session Failures Far End "No Answer": 0

Press [NextPage], [PreVPage] or [Cancel]
enter command: list measurements remote-messages day drintuit
    
```

Figure 6-8. Remote Messages Daily Traffic Screen

Table 6-5. Field Definitions: Remote Messages Daily Traffic screen

Field Name	Description/Procedure
Machine Name:	The name of the remote machine you entered on the command line.
Machine Type:	The type of remote machine, for example, calld, AUDIX, etc.
Date:	The date indicates the starting date for which traffic data were collected for the report. It is the date you entered on the command line, or the current date if you did not specify a date. If you enter a date previous to the current date, each day's record is presented as an additional page (screen). Press (NEXTPAGE) and (PREVPAGE) to "scroll" through each daily report record.
Ending Time:	The time indicates the time at which data collecting ended.

Continued on next page

Table 6-5. Field Definitions: Remote Messages Daily Traffic screen — Continued

Field Name	Description/Procedure
LOCAL ORIGINATION, Prime/Non-Prime	<p>This fields indicates whether message transmission came from the local AUDIX during a period specified as prime or non-prime time. The message transmission is further analyzed, as follows:</p> <ul style="list-style-type: none"> ■ Transfer Sessions – The number of message transfer sessions that occurred during the reporting period. For AMIS analog messages, each transmission or reception session is pegged as a transfer session. ■ Usage (seconds) – The total number of seconds for all message transfer sessions that occurred during the reporting period. AMIS analog messages are included in this total. ■ Average Usage – The average length, in seconds, of a message transfer session. AMIS analog messages are included in this total. ■ Messages Sent: The total number of messages sent from the local AUDIX to the remote AUDIX. AMIS analog messages are included in this total. ■ Messages Rejected – Displays the total number of messages rejected by the local AUDIX machines during the reporting period. AMIS analog messages are included in this total. For call delivery machines, if there is no positive confirmation, the message is recorded as rejected. ■ Status Sent – Displays the total number of status reports sent by the local AUDIX to the remote AUDIX for messages originated by the remote AUDIX. This number equals 0 for call delivery machines. ■ Status Received – Not applicable.
REMOTE ORIGINATION, Prime/Non-Prime	<p>The values in these fields indicate whether message transmission came from the remote AUDIX during a period specified as prime or non-prime time. The message transmission is further analyzed, as follows:</p> <ul style="list-style-type: none"> ■ Transfer Sessions – The number of message transfer sessions that occurred during the reporting period. For AMIS analog messages, each transmission or reception session is pegged as a transfer session. ■ Usage (seconds) – The total number of seconds for all message transfer sessions that occurred during the reporting period. AMIS analog messages are included in this total. ■ Average Usage – The average length, in seconds, of a message transfer session. AMIS analog messages are included in this total. ■ Messages Sent – The total number of messages sent from the remote AUDIX and received by the local AUDIX during the reporting period. AMIS analog messages are included in this total. ■ Messages Rejected – The total number of messages rejected by the local and remote AUDIX machines during the reporting period. AMIS analog messages are included in this number. For call delivery machines, if there is no positive confirmation, the message is recorded as rejected. ■ Status Sent – Not applicable. ■ Status Received – The total number of status reports received by the local AUDIX for messages that the local machine sent to the remote AUDIX. Not applicable for AMIS analog messages.

Continued on next page

Table 6-5. Field Definitions: Remote Messages Daily Traffic screen — Continued

Field Name	Description/Procedure
Headers Sent:	Not an applicable field for an AUDIX Release 3 or Release 4 machine.
Message Transmission Threshold Exceptions:	The value in this field indicates the number of times the local node exceeded its message transmission threshold. This field is not applicable for AMIS analog machines.
Session Failures	The value in this field indicates the number of unsuccessful call attempts from the local AUDIX to the remote AUDIX. AMIS analog session failures are included in this count.

3. Press **CANCEL** (F1) to return the cursor to the command line.
4. Enter an administrative command at the `enter command:` prompt or type **exit** to leave AUDIX Administration.

Remote Messages Monthly Traffic Report

The Remote Messages Monthly Traffic report gathers up to 13 months information about traffic load between a local AUDIX and a specified remote AUDIX machine.

To run a Remote Messages Monthly Traffic report, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 6-1 on page 6-3), select:

```
>AUDIX Administration
```

The system displays a blank administration screen.

2. At the command line, type either:

Full Command Version

list measurements remote-messages month *machine*

list measurements remote-messages month *machine mm/yy*

Short Command Version

li me re m *machine*

li me re m *machine mm/yy*

where ***machine*** is the name of the remote AUDIX machine for which you would like information, and ***mm/yy*** is the starting month up to 12 months previous to the current month that you would like as a starting point for the report. If no month is specified, the current month is used.

⇒ NOTE:

list can be preceded by **print** to print the contents of the screens.

The system displays the Remote Messages Monthly Traffic screen (Figure 6-9 on page 6-19). Table 6-6 on page 6-19 describes the fields on the screen.

```

drmid10          Active          Alarms: mWA          Logins: 8
list measurements remote-messages month drintuit          Page 1
REMOTE MESSAGES MONTHLY TRAFFIC

Machine Name : drintuit          Machine Type: audix
Date : 02/96                    Ending Date : 02/14/96

LOCAL ORIGINATION          REMOTE ORIGINATION
Prime   Non-Prime          Prime   Non-Prime
Transfer Sessions: 0        0        0        0
Usage (seconds) : 0        0        0        0
Average Usage   : 0        0        0        0
Messages Sent   : 0        0        0        0
Messages Rejected: 0       0        0        0
Status Sent     : 0        0
Status Received :          0        0

Headers Sent :

Message Transmission Threshold Exceptions: 0
Session Failures      Far End "No Answer": 0

Press [NextPage], [PreVPage] or [Cancel]
enter command: list measurements remote-messages month drintuit
    
```

Figure 6-9. Remote Messages Monthly Traffic Screen

Table 6-6. Field Definitions: Remote Messages Monthly Screen

Field Name	Description/Procedure
Machine Name:	This field contains the name of the remote machine you entered on the command line.
Machine Type:	This field indicates the type of remote machine, for example, calld, AUDIX, etc.
Date:	The date indicates the starting month for which traffic data were collected for the report. It is the month you entered on the command line, or the current date if you did not specify a month. If you enter a month previous to the current month, each month's record is presented as an additional page (screen). Press (NEXTPAGE) and (PREVPAGE) to "scroll" through each monthly report record.
Ending Time:	The time indicates the month at which data collecting ended.

Continued on next page

Table 6-6. Field Definitions: Remote Messages Monthly Screen — Continued

Field Name	Description/Procedure
LOCAL ORIGINATION, Prime/Non-Prime	<p>The values in these fields indicate whether message transmission came from the local AUDIX during a period specified as prime or non-prime time. The message transmission is further analyzed, as follows:</p> <ul style="list-style-type: none"> ■ Transfer Sessions – The number of message transfer sessions that occurred during the reporting period. For AMIS analog messages, each transmission or reception session is pegged as a transfer session. ■ Usage (seconds) – The total number of seconds for all message transfer sessions that occurred during the reporting period. AMIS analog messages are included in this total. ■ Average Usage – The average length, in seconds, of a message transfer session. AMIS analog messages are included in this total. ■ Messages Sent – The total number of messages sent from the local AUDIX to the remote AUDIX. AMIS analog messages are included in this total. ■ Messages Rejected – Displays the total number of messages rejected by the local AUDIX machines during the reporting period. AMIS analog messages are included in this total. For call delivery machines, if there is no positive confirmation, the message is recorded as rejected. ■ Status Sent – Displays the total number of status reports sent by the local AUDIX to the remote AUDIX for messages originated by the remote AUDIX. This number = 0 for call delivery machines. ■ Status Received: Not applicable.
REMOTE ORIGINATION, Prime/Non-Prime	<p>The values in these fields indicate whether message transmission came from the remote AUDIX during a period specified as prime or non-prime time. The message transmission is further analyzed, as follows:</p> <ul style="list-style-type: none"> ■ Transfer Sessions – The number of message transfer sessions that occurred during the reporting period. For AMIS analog messages, each transmission or reception session is pegged as a transfer session. ■ Usage (seconds) – The total number of seconds for all message transfer sessions that occurred during the reporting period. AMIS analog messages are included in this total. ■ Average Usage – The average length, in seconds, of a message transfer session. AMIS analog messages are included in this total. ■ Messages Sent – The total number of messages sent from the remote AUDIX and received by the local AUDIX during the reporting period. AMIS analog messages are included in this total. ■ Messages Rejected – The total number of messages rejected by the local and remote AUDIX machines during the reporting period. AMIS analog messages are included in this number. For call delivery machines, if there is no positive confirmation, the message is recorded as rejected. ■ Status Sent – Not applicable. ■ Status Received – The total number of status reports received by the local AUDIX for messages that the local machine sent to the remote AUDIX. Not applicable for AMIS analog messages.

Continued on next page

Table 6-6. Field Definitions: Remote Messages Monthly Screen — Continued

Field Name	Description/Procedure
Headers Sent:	Not applicable for an AUDIX Release 3 or Release 4 machine.
Message Transmission Threshold Exceptions:	The value in this field indicates the number of times the local node exceeded its message transmission threshold. This field is not applicable for AMIS analog machines.
Session Failures	The value in this field indicates the number of unsuccessful call attempts from the local AUDIX to the remote AUDIX. AMIS analog session failures are included in this count.

3. Press `CANCEL` (F1) to return the cursor to the command line.
4. Enter an administrative command at the `enter command:` prompt or type `exit` to leave AUDIX Administration.

Overview

This chapter provides troubleshooting procedures for digital networking DCP, RS-232, and TCP/IP connections. Troubleshooting procedures include:

- Performing a remote connection test for DCP, RS-232, and TCP/IP connections
- Testing the DCP and RS-232 connections for the local system
- Performing an ACCX board reset
- Performing an ACCX board trace
- Busying out and releasing channels
- Viewing TCP/IP statistics
- Testing TCP/IP software
- Testing TCP/IP connections to remote machines
- Testing the LAN board

Purpose

This chapter provides instructions for a system administrator, telecommunications analyst, or LAN administrator to troubleshoot problems with an INTUITY AUDIX digital network.

What To Do Before Calling the Remote Support Center

It is recommended that you perform the appropriate tests in this chapter before calling the remote support center.

Test Name	When to Perform
Remote connection	<ul style="list-style-type: none"> ■ When the local machine is having trouble connecting to a remote machine ■ When the local machine is having trouble delivering messages to or receiving messages from a remote machine
Send test message to remote users	To ensure that a remote machine can receive messages from the local machine
Receive test message from remote users	To ensure that the local machine can receive messages from a remote machine
Channel internal loop-around	DCP and RS-232 connections when a remote connection test fails or when you cannot exchange messages with remote users
Modem loop-around	RS-232 connections when a remote connection test fails or when you cannot exchange messages with remote users
Network loop-around	DCP and RS-232 connections when a remote connection test fails or when you cannot exchange messages with remote users
Networking board reset	Reset the ACCX board which may be needed after performing other network diagnostics or when instructed by a maintenance procedure
Networking board trace	When the above tests fail for no apparent reason
TCP/IP packet statistics	When there are problems with a TCP/IP connection
TCP/IP local software	When the local machine is having trouble communicating with remote machines
TCP/IP connection to a remote machine	When the local machine is having trouble communicating with a remote machine

Performing a Remote Connection Test

The remote connection test checks the transmission path from the local machine to the remote machine for DCP, RS-232, and TCP/IP connections. The test assumes that all components of the network, from the ACCX or LAN board to the remote machine administration, are operating and complete. If the remote connection test fails, proceed to "Testing the Network Connections for the Local System" on page 7-8. The following requirements are necessary to perform a remote connection test:

- You need the remote machine name
- The channel can be DCP, RS-232, or TCP/IP
- The channel must be equipped (see page 4-12)

To perform a remote connection test, perform the following tasks:

1. Start at the main menu specific to your version of Lucent INTUITY, either Release 3 or Release 4 (Figure 7-1)

Lucent INTUITY Administration menu for Release 3

```
INTUITY (TM) Administration
>AUDIX Administration
  Call Accounting System
  Customer/Services Administration
  Networking Administration
  Switch Administration
  Switch Interface Administration
  Upgrade
  Voice System Administration
```

Lucent INTUITY Main Menu for Release 4

```
INTUITY (TM) Main Menu
AUDIX Administration
Customer/Services Administration
Networking Administration
Switch Interface Administration
Upgrade
Voice System Administration
```

Figure 7-1. Lucent INTUITY Main Menu for Release 3 and Release 4

2. Select:

```
>Customer/Services Administration
>Diagnostics
> Networking Diagnostics
```

The system displays the Networking Diagnostics window (Figure 7-2).

Networking Diagnostics					
CHANNEL	TYPE	RATE	STATUS	MACHINE	ACTIVITY
1	DCP		DOWN		
2	DCP		DOWN		
3	RS-232 ASYNC		IDLE		
4	RS-232 ASYNC		IDLE		
5	TCP/IP		IDLE		
6	TCP/IP		IDLE		
7	TCP/IP		IDLE		
8	TCP/IP		IDLE		
9	TCP/IP		NOT EQUIPPED		
10	TCP/IP		NOT EQUIPPED		
11	TCP/IP		NOT EQUIPPED		
12	TCP/IP		NOT EQUIPPED		

Figure 7-2. Networking Diagnostics Window

- Press **CHG-KEYS** (F8).
The system displays the alternate set of function keys.
- Press **DIAGNOSE** (F4).
The system displays the Diagnostics menu (Figure 7-3).

Diagnostics
>Remote Connection Test
Channel Internal Loop Around Test
Modem Loop Around Test
Network Loop Around Test
Networking Board Reset
Networking Board Trace

Figure 7-3. Networking Diagnostics Menu

- Select **Remote Connection Test**.
The system displays the Remote Connection Test window (Figure 7-4).

Remote Connection Test
Machine Name: _____
Channel No. : _____

Figure 7-4. Remote Connection Test Window

6. Enter the *remote machine name*.

If you do not know the machine names, press **CHOICES** (F2) and select from the list of remote machine names.

7. If you would like to test a particular channel, enter the *number of the channel*.

If you are testing a dedicated RS-232 connection, enter the *number of the dedicated channel*.

8. Press **SAVE** (F3) to begin the test.

The system displays the message *working...* in the upper right-hand corner of the window while it attempts to connect with the remote machine. When the test completes, the system displays the Test Results window. Figure 7-5 shows a successful connection indicated by *OKAY*.

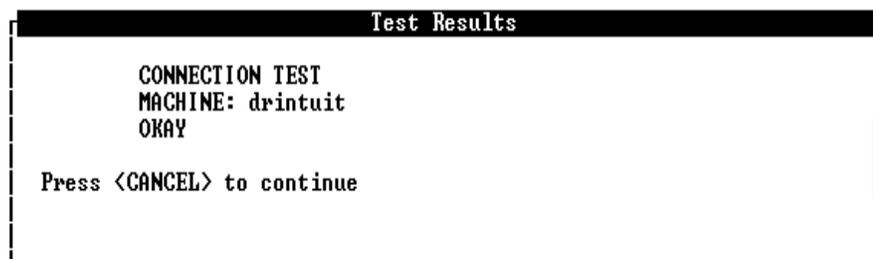


Figure 7-5. Test Results Window for a Remote Connection Test

9. Select one of the following options:
 - *Successful Test.* If the window contains a message stating that the test completed successfully, press **CANCEL** (F6). The system displays the Remote Connection Test window (Figure 7-4). Proceed to the next step.
 - *Failed Test.* If the window contains a message stating that the test failed, press **CANCEL** (F6) until the system displays the Networking Diagnostics window (Figure 7-2). Proceed to "Testing the Network Connections for the Local System" on page 7-8. The instructions in that section will help you determine the reason for the remote connection test failure.
10. Repeat step 6 through step 9 to test another remote machine connection.
11. When you finish testing the remote machine connections, press **CANCEL** (F6) repeatedly to return to the main menu specific to your release.

Sending a Test Message to Remote Users

This section provides instructions for sending messages to users on a remote machine to verify that users on that machine are receiving messages.

To record a message and address the message to remote users, perform the following tasks:

1. Dial the INTUITY AUDIX messaging extension. This is the extension users call to retrieve and send messages.
2. When prompted to enter an extension, use the telephone keypad to enter a local test user extension. Press **#**.
3. Enter the password for the local test user. Press **#**.
The system plays the INTUITY AUDIX activity menu.
4. Press **1** to record a message.
When you hear the tone, say the following phrase:
"This is a test message from <your name> Please call me to verify that you have received this message. My number is <your number>."
5. Press **#**.
The system plays:
"Enter extension and pound sign. When finished addressing, press pound."
6. Enter the address for a remote test user. Press **#**. The address includes the prefix, if any, and the extension of the remote test user.
Enter the addresses of other remote test users if desired, and press **#** after each address.
7. Press **#** to send the message or press **0** to hear a list of options.
The system schedules the delivery and returns you to the activity menu.
8. Hang up the phone.

Receiving a Test Message from Remote Users

Request that a remote machine administrator send a message to you or a test user to verify that you can receive messages from the remote machine. Retrieve the messages to verify that your local machine is administered correctly with the remote machine and receiving messages correctly.

To retrieve messages from the remote machine, perform the following tasks:

1. Dial the INTUITY AUDIX messaging extension. This is the extension users call to retrieve and send messages.
2. When prompted to enter an extension, use the telephone keypad to enter the local extension. Press **[#]**.
3. Enter the password for the local extension. Press **[#]**.

The system plays the user's name and a message telling you the number of messages in the mailbox, if any, followed by the activity menu.

4. Press **[2]** to retrieve messages.

The system plays the header for the first message. The header includes the name or extension of the sender and the date and time the message was sent.

5. Press **[0]** to listen to the message.

At the end of the message, the system plays:

"To respond or forward, press one. To delete, press star d. To skip, press pound."

6. Press **[*] [D]** to delete the message.
7. Repeat steps 5 and 6 for each message in the local mailbox. After you listen to each of the messages, the system plays the INTUITY AUDIX activity menu.
8. Hang up the phone.

Testing the Network Connections for the Local System

Use the instructions in this section to test each component of the digital network for DCP and RS-232 ports. Perform these tests when a remote connection test fails or when you cannot exchange messages with remote users. The following list shows you the network connection tests.

- Channel internal loop-around test
- Modem loop-around test (if applicable)
- Network loop-around test
- Networking board reset
- Networking board trace

Performing a Channel Internal Loop-Around Test

The channel internal loop-around test checks the operation of an individual channel on the ACCX board. Perform this test to make sure the board is operating correctly. If the board does not operate properly, the other tests in this section will fail. The following requirements are necessary to perform a channel internal loop-around test.

- The channel can be DCP or RS-232.
- The channel must be equipped.

To perform a channel internal loop-around test, perform the following tasks:

1. Starting from the Main Menu (Figure 7-1 on page 7-3), select:

```
> Customer/Services Administration
```

```
> Diagnostics
```

```
> Networking Diagnostics
```

The system displays the Networking Diagnostics window (Figure 7-2 on page 7-4).

2. Press **CHG-KEYS** (F8) and then **DIAGNOSE** (F4).

The system displays the Diagnostics menu (Figure 7-3 on page 7-4).

3. Select:

```
> Channel Internal Loop-Around Test
```

The system displays the Channel Internal Loop-Around Test window (Figure 7-6).



Figure 7-6. Channel Internal Loop-Around Test Window

4. Enter the *channel number that you would like to test*.

The system displays the message `working...` in the upper right-hand corner of the window while it completes the test. When the test completes, the system displays the Test Results window. Figure 7-7 shows a successful test indicated by `OKAY`.



Figure 7-7. Test Results Screen for a Channel Internal Loop-Around Test

5. Select one of the following options:
 - *Successful Test.* If the window contains a message stating that the test completed successfully, press `CANCEL` (F6). The system displays the Channel Internal Loop-Around Test window (Figure 7-6). Proceed to the next step.
 - *Failed Test.* If the window contains a message stating that the test failed, look at the Maintenance Log (select `Log Administration` from the Customer/Services Administration menu (Figure 7-1 on page 7-3), then select `Maintenance Log`). An alarm may have been generated depending on the type of failure.
6. Repeat step 4 and step 5 for each equipped channel on the ACCX board.
7. Press `CANCEL` (F6) repeatedly to return to the Main Menu.

Performing a Modem Loop-Around Test

Perform the modem loop-around test to make sure the ACCX board and the modem are communicating and that the modem is configured correctly.

⇒ NOTE:

This test does not function with all modems. See Table 2-4 on page 2-17 for a list of supported modems.

The modem loop-around test checks the connectivity between the ACCX board and the modem through an RS-232 channel. The test sends a signal from the ACCX board to the modem and back. The following are required to perform a modem loop-around test.

- The channel state must be busyout. Check the status of the channel on the Networking Diagnostics window. If the channel is not in a busyout state, refer to “Busying Out and Releasing Channels” below.
- The channel must be RS-232 with a modem.
- The channel must be equipped.

To perform a modem loop-around test, perform the following tasks:

1. Starting from the Main Menu (Figure 7-1 on page 7-3), select:

```
> Customer/Services Administration
> Diagnostics
> Networking Diagnostics
```

The system displays the Networking Diagnostics window (Figure 7-2).

2. Press **CHG-KEYS** (F8) and then **DIAGNOSE** (F4).

The system displays the Diagnostics menu (Figure 7-3).

3. Select:

```
> Modem Loop-Around Test
```

The system displays the Modem Loop-Around Test window (Figure 7-8 on page 7-11).

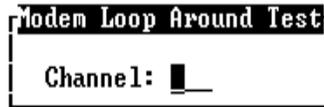


Figure 7-8. Modem Loop-Around Test Window

4. Enter the *channel number that you would like to test*. The channel must be RS-232 and have a modem connected.

The system displays the message `working...` in the upper right-hand corner of the window while it completes the test. When the test completes, the system displays the Test Results window. Figure 7-9 shows a failed test indicated by `FAILED: SYSTEM ERROR`.

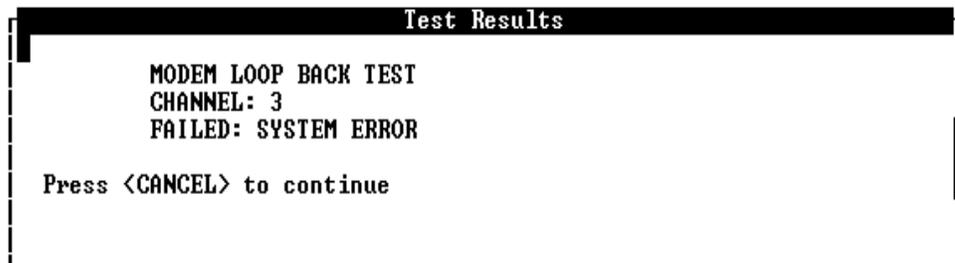


Figure 7-9. Test Results Window for a Modem Loop-Around Test

5. Select one of the following options:
 - *Successful Test*. If the window contains a message stating that the test completed successfully, press `(CANCEL)` (F6). The system displays the Modem Loop Around Test window (Figure 7-8). Proceed to the next step.
 - *Failed Test*. If the window contains a message stating that the test failed, look at the Alarm Log (select `Log Administration` from the Customer/Services Administration menu (Figure 7-1 on page 7-3), then select `Alarm Log`). You may need to do the following to correct the failure:
 - Verify the modem initialization string (see page 4-18).
 - Verify the modem cabling. The System Installation book for your platform contains more information on cabling.
 - Verify the modem front panel settings (see Appendix C, "Paradyne Comsphere Modem Settings for RS-232 Connections").

- Verify that you have the correct modem line. Verify the port location and extension of the modem line.
 - Verify that there is dial tone on the modem line by calling the modem extension.
6. Repeat step 4 and step 5 for another RS-232 channel that has a modem connected.
 7. When you finish testing the modems, press **CANCEL** (F6) repeatedly to return to the Main Menu.

Performing a Network Loop-Around Test

Perform the network loop-around test on DCP channels (56 Kbps robbed-bit or 64 Kbps) to check the data transmission path that connects the local INTUITY AUDIX system with the service office (SO) and the public network. When a channel is in loop-around mode, the channel cannot exchange information with remote machines.

⇒ NOTE:

Coordinate this test with your local SO.

Test Overview

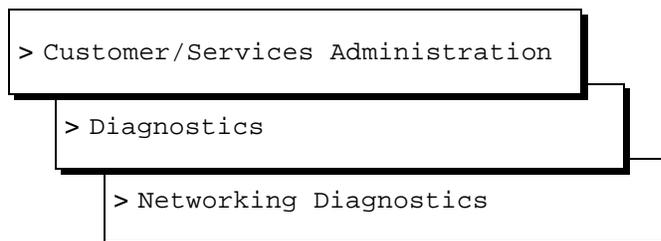
The test operates as follows:

- To perform the test, specify the channel number and data rate and start the channel in network loop-around mode.
- Notify the SO to send a message to the telephone number assigned to the channel you placed in the loop-around mode.
- The SO sends a message which loops through the INTUITY AUDIX digital network and returns to the SO.
- The SO checks the message to verify that the same information they sent was returned by the INTUITY AUDIX system.

Test Procedure

To perform a network loop-around test, perform the following tasks:

1. Starting from the Main Menu (Figure 7-1 on page 7-3), select:



The system displays the Networking Diagnostics window (Figure 7-2).

2. Press **CHG-KEYS** (F8) and then **DIAGNOSE** (F4).
The system displays the Diagnostics menu (Figure 7-3).
3. Select:

```
> Network Internal Loop-Around Test
```

The system displays the Network Loop-Around Test window (Figure 7-10).

```
Network Loop Around Test
> Start Test
  Stop Test
```

Figure 7-10. Network Loop-Around Test Window

Starting the Test

1. Select:

```
> Start Test
```

The system displays the Start Network Loop-Around Test window (Figure 7-11).

```
Start Network Loop Around Test
Speed: █
Channel: _____
```

Figure 7-11. Start Network Loop-Around Test Window

2. Enter **High** or **Low** in the *Speed* field.
You can select the values by pressing **CHOICES** (F2) and selecting an option from the menu.
 - High speed refers to 64 Kbps DCP.
 - Low speed refers to 56 Kbps DCP.
3. Enter the *channel number that you would like to test*.

4. Press **SAVE** (F3) to start the test and place the channel in loop-around mode.

The system displays the message `working...` in the upper right-hand corner of the window while it places the channel in loop-around mode. When the system has placed the channel in loop-around mode, it displays a Test Results window (Figure 7-12).

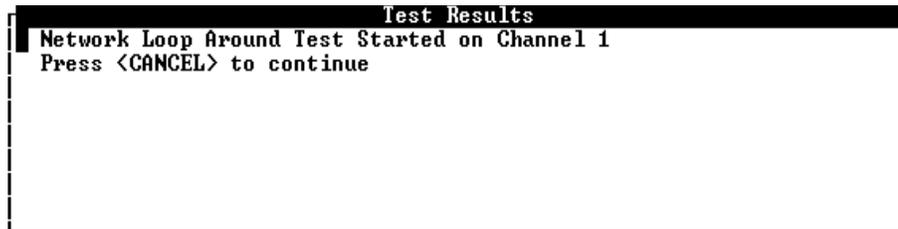


Figure 7-12. Start Test Results Window for a Network Loop-Around Test

5. Contact your local telephone service office and instruct them to send a message to the telephone number assigned to the channel you placed in the loop-around mode. If the test is successful, any data sent by the SO will pass through the INTUITY AUDIX channel and return to the SO.

Stopping the Test

1. When you are ready to stop the test, press **CANCEL** (F6) until you return to the Network Loop-Around Test window (Figure 7-10 on page 7-13).
2. Select:



The system displays the Stop Network Loop-Around Test window (Figure 7-13).

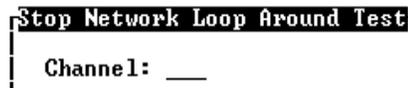


Figure 7-13. Stop Network Loop-Around Test Window

3. Enter the *channel number that you would like to stop testing*. This is the same channel number you entered in step 3.

The system displays the message `working...` in the upper right-hand corner of the window while it stops the test. When the system has removed the channel from loop-around mode, it displays the Test Results window (Figure 7-14).

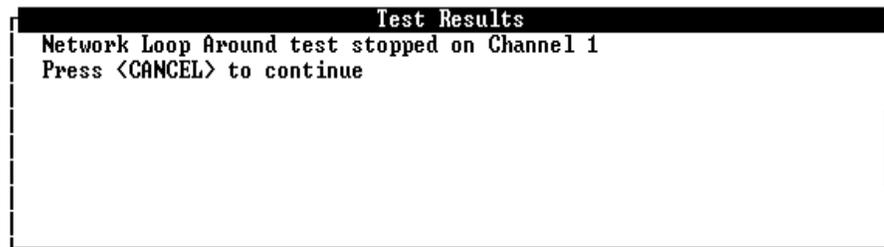


Figure 7-14. Stop Test Results Window for a Network Loop-Around Test

4. Press `CANCEL` (F6) until you return to the Network Loop-Around Test window.

Repeating the Test for Another Channel

1. Repeat the Start Test (step 1 through step 5 on page 7-13) for each channel you need to test.



NOTE:

You can place more than one channel into start test at one time.

Completing the Tests

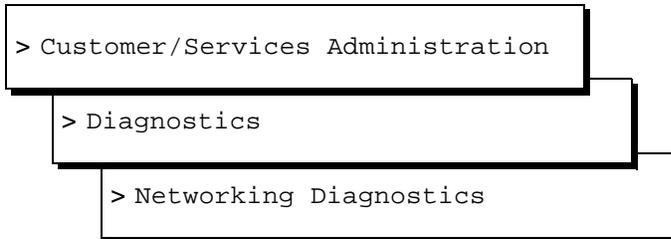
1. Stop testing all channels (see "Stopping the Test" on page 7-14).
2. When you finish performing network loop-around tests, press `CANCEL` (F6) repeatedly to return to the main menu specific to your release.

Performing a Networking Board Reset

This section provides instructions for resetting the ACCX board used for DCP and RS-232 networking. You may need to reset the board after performing other networking diagnostic tests. Also, the Maintenance book for your platform may instruct you to reset the board.

To reset the networking board, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 7-1 on page 7-3), select:



The system displays the Networking Diagnostics window (Figure 7-2 on page 7-4).

2. Press **[CHG-KEYS]** (F8) and then **[DIAGNOSE]** (F4).

The system displays the Diagnostics menu (Figure 7-3 on page 7-4).

3. Select:



The system displays the Networking Board Reset window (Figure 7-15).

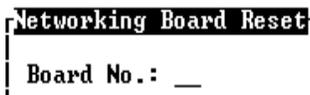


Figure 7-15. Networking Board Reset Window

4. Enter the *number of the ACCX board you need to reset.*

The system displays the message *working...* in the upper right-hand corner of the window while it resets the ACCX board. The process lasts several minutes. When the process completes, the system displays the results window (Figure 7-16).



Figure 7-16. Networking Card Reset Results Window

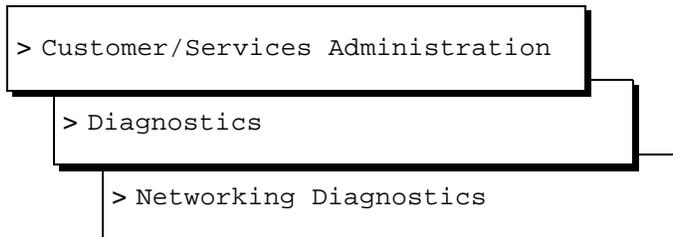
5. Press **CANCEL** (F6) to return to the Networking Board Reset window.
6. Repeat step 4 and step 5 for each ACCX board you need to reset.
7. When you finish the process, press **CANCEL** (F6) repeatedly to return to the main menu specific to your release.

Performing a Networking Board Trace

The networking board traces report on different types of ACCX networking board activities.

To run a networking board trace, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 7-1 on page 7-3), select:



The system displays the Networking Diagnostics window (Figure 7-2 on page 7-4).

2. Press **CHG-KEYS** (F8) and then **DIAGNOSE** (F4).

The system displays the Diagnostics menu (Figure 7-3 on page 7-4).

3. Select:

```
> Networking Board Trace
> Start Trace
```

The system displays the Start Networking Board Trace window (Figure 7-17).

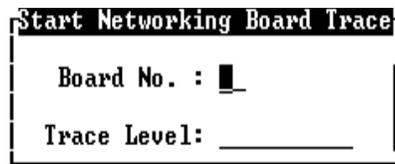


Figure 7-17. Start Networking Board Trace Window

Starting the Test

4. Enter the *number of the ACCX board you would like to do a trace on.*
5. Press **(CHOICES)** (F2) to display a list of trace levels (Figure 7-18). Note the trace level you would like (for example, **0x4000** for Link Control Traces).

Trace Levels	
0x0	Session Level Traces
0x1	Host/ACCX Interface Traces
0x2	SC Task Traces
0x4	MTA Task Traces
0x8	DSR Task Traces
0x10	S Channel L2 Traces
0x20	S Channel L2 Traces
0x40	S Channel L3 Traces
0x80	S Channel L3 Traces
0x100	I Channel L3 Traces
0x200	I Channel L3 Traces
0x400	I Channel L2 Traces
0x800	I Channel L2 Traces
0x1000	I Channel L1 Traces
0x2000	I Channel L1 Traces
0x4000	Link Control Traces

Figure 7-18. Trace Levels Window

6. Press **CANCEL** (F6).
7. Enter the *number of the trace level you would like to run* in the Trace Level field (for example, enter **0x4000** for Link Control Traces).
8. Press **SAVE** (F3) to run the trace.

The system displays the message `working...` in the upper right-hand corner of the window while it runs the trace. When the trace completes, the system displays the results window (Figure 7-19).



Figure 7-19. Networking Trace Results Window

9. Press **CANCEL** (F6) to return to the Start Networking Board Trace window.
10. Repeat step 5 through step 9 to run another trace on the same board.

Stopping the Test

1. When you are ready to stop the traces on a particular ACCX board, press **CANCEL** (F6) until you return to the Networking Board Trace window (Figure 7-18).
2. Select:



The system displays the Stop Networking Board Trace window (Figure 7-20).

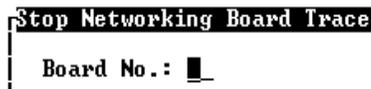


Figure 7-20. Stop Networking Board Trace Window

3. Enter the *number of the ACCX board that you would like to stop testing* in the `Board No.` field. This is the same board number you entered in step 4 on page 7-18.

The system displays the message `working...` in the upper right-hand corner of the window while it stops the test. When the system has stopped the test, it displays the Test Results window (Figure 7-21).



Figure 7-21. Stop Trace Results Window

4. When you finish the trace tests, press `CANCEL` (F6) repeatedly to return to the main menu specific to your release.

Busying Out and Releasing Channels

⇒ NOTE:

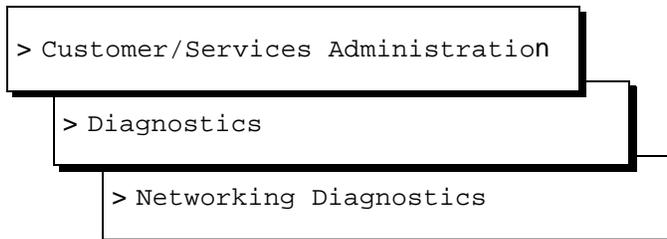
Do not perform the instructions in this section unless instructed by another procedure or your remote service organization.

Busying out a channel refers to the process of taking a channel out of service. Releasing a channel refers to the process of making the channel active again and changing the state from *busyout* to *idle*. Refer to the appropriate heading to perform the required action.

- "Busying Out Channels" (below)
- "Releasing Channels" on page 7-22

Busying Out Channels

1. Starting from the main menu specific to your release (Figure 7-1 on page 7-3), select:



The system displays the Networking Diagnostics window (Figure 7-2).

2. Press **CHG-KEYS** (F8) and then **BUSYOUT** (F2).

The system displays the Busyout Networking Channel window (Figure 7-22).



Figure 7-22. Busyout Networking Channel Window

3. Enter the *number of the channel you need to busyout*.

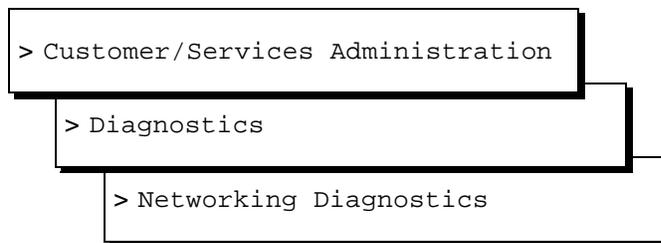
The system displays the message `working...` in the upper right-hand corner of the screen while it takes the channel out of service. When the channel has been busied out, the system updates the Networking Diagnostics window and displays `busied out` in the `Status` field for the channel you entered.

4. Press **CANCEL** (F6).
5. Repeat step 2 and step 3 for each channel you need to busy out.
6. When you finish, press **CANCEL** (F6) repeatedly to return to the main menu specific to your release.

Releasing Channels

To put channels back in service, perform the following tasks:

1. Starting from the main menu specific to your release (Figure 7-1 on page 7-3), select:



The system displays the Networking Diagnostics window (Figure 7-2).

2. Press **CHG-KEYS** (F8) and then **RELEASE** (F3).

The system displays the Release Networking Channel window (Figure 7-23).



Figure 7-23. Release Networking Channel Window

3. Enter the *number of the channel you need to release*.

The system displays the message `working...` in the upper right-hand corner of the window while it releases the channel. When the channel has been released, the system updates the Networking Diagnostics window and displays `idle` in the `Status` field for the channel you entered.

4. Repeat step 2 and step 3 for each channel you need to release.
5. When you finish releasing channels, press **CANCEL** (F6) repeatedly to return to the main menu specific to your release.

Performing TCP/IP Diagnostics

⚠ CAUTION:

TCP/IP networking momentarily goes down during a manual backup. This is not cause for alarm. The network comes back on its own. However, you may wish to perform manual backups during off-peak or out-of-business hours.

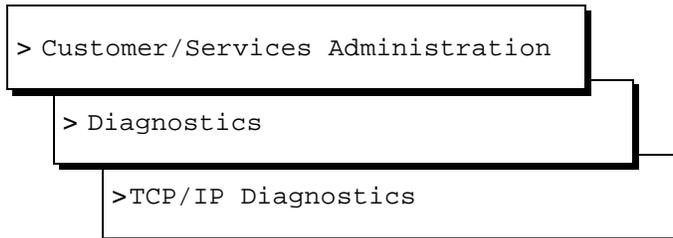
Use the TCP/IP diagnostics when you are having trouble sending messages to or receiving messages from a remote machine connected using TCP/IP. You can use TCP/IP diagnostics for:

- Viewing the statistics for the LAN card
- Testing the TCP/IP software on the INTUITY AUDIX system
- Testing the connection between the INTUITY AUDIX system and a remote machine

Viewing Packet Statistics

The Packet Statistics window displays data concerning traffic on the LAN card. Use this window to identify problems occurring with the LAN card and the network.

1. Starting from the main menu specific to your release (Figure 7-1 on page 7-3), select:



The system displays the TCP/IP Diagnostics window (Figure 7-24).



Figure 7-24. TCP/IP Diagnostics Window

2. Select:

```
> View Packet Statistics
```

The system displays the Packet Statistics window (Figure 7-25).

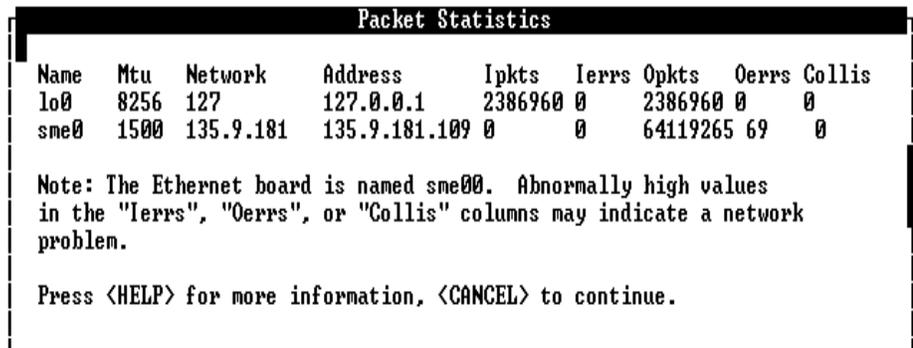


Figure 7-25. Packet Statistics Window

3. Examine the data for the line beginning with either sme0 or sme00 (this indicates the LAN card). If the LAN card is bad or there was a problem with the TCP/IP software when the Lucent INTUITY system was booted, the system will not display statistics for sme00 and you will not see the line on the window.

Table 7-1 describes the fields that may indicate problems on the LAN. If this window indicates problems, contact the LAN administrator.

Table 7-1. Packet Statistics Window Description of Possible Errors

Ierrs	<p>A non-zero value in the Ierrs column indicates damaged packets are being received. A value for this field greater than 10% of the packets received (Ipmts) indicates that the network is too busy and performance is slow. Users may perceive this as poor response time.</p> <p>Possible causes are a faulty device on the network or a bad cable connection. This fault can occur anywhere on the network and affects the whole network.</p>
-------	---

Continued on next page

Table 7-1. Packet Statistics Window Description of Possible Errors — Continued

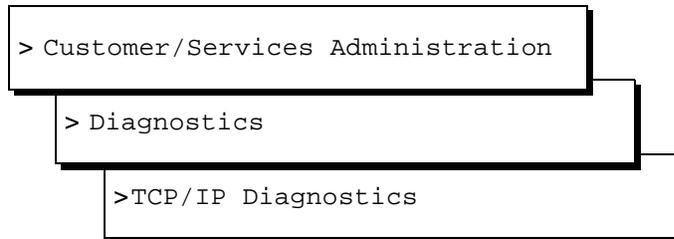
Oerrs	<p>A non-zero value in the <code>Oerrs</code> column indicates damaged packets are being sent. A value for this field greater than 10% of the packets sent (<code>Opkts</code>) indicates that the network is too busy and performance is slow. Users may perceive this as poor response time.</p> <p>Possible causes are a faulty device on the network or a bad cable connection. This fault can occur anywhere on the network and affects the whole network.</p>
Collis	<p>The <code>Collis</code> column indicates that the INTUITY AUDIX system attempted to transmit packets while the network was busy. This is a measure of network congestion. It is normal to see a small number of collisions (less than 10% of the packets sent [<code>Opkts</code>]) on a well-managed network.</p> <p>Users may complain of poor response time if collisions become greater than 30% of packets sent (<code>Opkts</code>). To correct this problem, you will have to reconfigure your LAN to have less traffic.</p>

4. When finished viewing these diagnostics, press **CANCEL** (F6) to return to the TCP/IP Diagnostics menu (Figure 7-24).
5. When you finish with diagnostics, press **CANCEL** (F6) repeatedly to return to the main menu specific to your release.

Testing the Lucent INTUITY System's TCP/IP Software

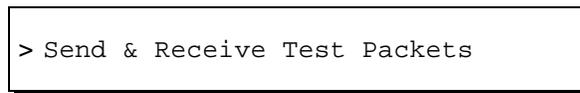
If the INTUITY AUDIX system is having trouble communicating with a remote machine, you may first want to ensure that the problem is not with the INTUITY AUDIX system's TCP/IP software. For this procedure, run the diagnostic on the INTUITY AUDIX system itself. This test does not involve the LAN card or the network.

1. Starting from the main menu specific to your release (Figure 7-1 on page 7-3), select:



The system displays the TCP/IP Diagnostics window (Figure 7-24).

2. Select:



The system displays the Send & Receive Test Packets From window (Figure 7-26).



Figure 7-26. Send & Receive Test Packets From Window

3. Enter the *Internet Protocol (IP) address of the Intuity AUDIX system.*

For this information, access the TCP/IP Administration window (Figure 4-4 on page 4-9).

The system displays the message *working...* in the upper right-hand corner of the screen. When the test is complete, the system displays the Test Packets Results window (Figure 7-27). This window shows the results of the INTUITY AUDIX system sending 10 test packets across the LAN and back to itself.

```

Test Packets Results
72 bytes from drmid10 (XXX.X.XXX.XXX ): icmp_seq=0. time=0. ms
72 bytes from drmid10 (XXX.X.XXX.XXX ): icmp_seq=1. time=0. ms
72 bytes from drmid10 (XXX.X.XXX.XXX ): icmp_seq=2. time=0. ms
72 bytes from drmid10 (XXX.X.XXX.XXX ): icmp_seq=3. time=0. ms
72 bytes from drmid10 (XXX.X.XXX.XXX ): icmp_seq=4. time=0. ms
72 bytes from drmid10 (XXX.X.XXX.XXX ): icmp_seq=5. time=0. ms
72 bytes from drmid10 (XXX.X.XXX.XXX ): icmp_seq=6. time=0. ms
72 bytes from drmid10 (XXX.X.XXX.XXX ): icmp_seq=7. time=0. ms
72 bytes from drmid10 (XXX.X.XXX.XXX ): icmp_seq=8. time=0. ms
72 bytes from drmid10 (XXX.X.XXX.XXX ): icmp_seq=9. time=0. ms

---- XXX.X.XXX.XXX PING Statistics----
10 packets transmitted, 10 packets received, 0% packet loss
round-trip (ms)  min/avg/max = 0/0/0

Note: High packet loss, long round-trip time, or packets received out
of order (icmp_seq) may indicate a network problem.

Press <HELP> for more information, <CANCEL> to continue.

```

Figure 7-27. Test Packets Results Window

4. Examine the `packet loss` field under `PING Statistics` displayed on the Test Packets Results window. The value for this field will be either 0% or 100% as described below.
 - If 0% packet loss is reported, the test is successful. This result indicates that the problem is not with the INTUITY AUDIX system's TCP/IP software; however, the problem may be with the LAN card or the network. To further isolate the problem, test the connection between the INTUITY AUDIX system and the remote machine. See "Testing the Connection Between the INTUITY AUDIX System and the Remote Machine" below for the procedure.
 - If 100% packet loss is reported, the test failed. There was some problem starting the TCP/IP software when the Lucent INTUITY system was booted.
 - a. Check the Packet Statistics window (Figure 7-25). It is likely that the `sme00` interface will not be shown. This could indicate problems with the TCP/IP software or a LAN board failure.
 - b. Check the TCP/IP Administration menu (Figure 4-4 on page 4-9). It will not display if the board or software were not installed properly when the system was booted.

- c. Reboot the system. Watch the console during the reboot. If there is a LAN board, the system displays the following message:

```
initializing SMC Ethernet LAN card at address  
xxx... done  
opening SMC Ethernet LAN card... done
```



NOTE:

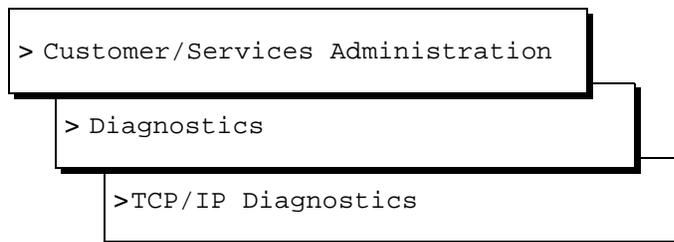
See the administration guide for your release for the reboot procedure.

- d. Repeat this test. If the test still fails, contact the remote services center.
5. When you finish this testing, press **CANCEL** (F6) repeatedly to return to the main menu specific to your release.

Testing the Connection between the INTUITY AUDIX System and a Remote Machine

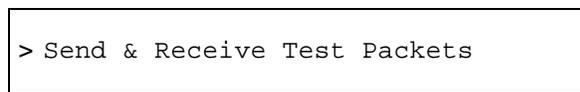
If you have determined that the INTUITY AUDIX TCP/IP software is functioning correctly (see the previous section), determine if the INTUITY AUDIX system and the remote machine can communicate.

1. Starting from the main menu specific to your release (Figure 7-1 on page 7-3), select:



The system displays the TCP/IP Diagnostics window (Figure 7-24).

2. Select:



The system displays the Send & Receive Test Packets From window (Figure 7-28).



Figure 7-28. Send & Receive Test Packets From Window

3. Enter the *Internet Protocol (IP) address of the remote machine.*

To obtain the IP address, access the Digital Network Machine Administration window for the remote machine (page 4-32).

The system displays the message `working...` in the upper right-hand corner of the screen. When the test is complete, the system displays the Test Packets Results window (Figure 7-27). This window shows the results of the INTUITY AUDIX system sending 10 test packets across the LAN to the remote machine.

4. Examine the Test Packets Results window. These statistics are described below:

- `icmp_seq`: The sequence identifier of the packet. The packets are numbered from 0 to 9 in the order that they were sent, and are displayed on the window in the order that they were returned. If one or two packets are returned out-of-sequence, the condition is acceptable to the INTUITY AUDIX system. However, if more than two packets are out-of-sequence (for example, 0, 2, 5, 3, 1...), inform the LAN administrator. Out-of-sequence packets may indicate network congestion or misrouting.
- `time`: The round-trip transmission time, in milliseconds (ms), of the packet. Round-trip delays greater than 10,000 ms may indicate a LAN problem. The users may perceive poor performance. You may need to reconfigure your LAN to provide better performance.

The round-trip delay is dependent on the distance traveled, the network congestion, and the network configuration.

- **packet loss:** The percentage of packets that were not returned during the test. The number of lost packets will vary from LAN to LAN. The percentage of loss depends upon the number of users, the number of machines, and the distance between machines on the LAN.
 - It is normal for some packets to be lost on a busy network. However, packet losses greater than 30% will result in poor user response time. If any packets are successfully transmitted, the network administration, LAN card, and LAN connection are likely working correctly. This is probably a problem caused by LAN congestion or improper routing.
 - A 100% packet loss indicates that the INTUITY AUDIX system has not established communication to the remote machine. The test will not report if packets are being sent to an incorrect or nonexistent machine.
5. If the test failed, take the following corrective action:
- a. Verify that you have used the correct IP address for the remote machine.
 - b. Verify that the remote machine is working.
 - c. If the remote machine is working, possible causes on the local machine are:
 - The LAN board is bad. Check the Packet Statistics window (Figure 7-25).
 - The network administration is not correct. Check the network administration. See "Adding or Changing TCP/IP" on page 4-9, " and "Administering Network Channels" on page 4-13.'
 - The LAN board is not connected properly to the LAN. See the Installation Guide appropriate to your platform for cabling information.
 - The physical connection to the LAN is not working properly. Contact the LAN administrator to check the link to the LAN.
 - d. Contact the remote services center if you cannot identify and fix the problem.
6. When you finish the tests, press **CANCEL** (F6) repeatedly to return to the main menu specific to your release.

Switch Administration



Overview

This appendix provides procedures for digital networking switch administration for Lucent Technologies System 75, DEFINITY Generic 1, and DEFINITY Generic 3 and for System 85 and DEFINITY Generic 2.

Purpose

This appendix provides the required and optional switch administration procedures for digital networking. Refer to the information you received from the design center when completing the switch administration.

System 75 and DEFINITY Generic 1 and Generic 3

Use the switch administration procedures in this section for System 75, DEFINITY Generic 1, and DEFINITY Generic 3 switches. Log in to the switch administration terminal. Refer to your switch administration documentation for login procedures.

Administering the DCP Digital Networking Ports

Use the instructions in this section to administer a System 75, DEFINITY G1, and DEFINITY G3 switch to operate with INTUITY™ AUDIX® digital networking.

Depending on the version of the switch you have, you may be able to use only one of the two I-Channels of each DCP line as explained below:

- System 75 R1V3, DEFINITY G1 R1V4, and DEFINITY G3i, G3s, or G3vs Version 1 can use only one I-Channel.
- DEFINITY G3i, G3s, and G3vs Version 2 can use both of the I-Channels. The option must be purchased, installed, and administered on the switch before Lucent INTUITY system administration is performed. Contact your sales representative for more information on the I-Channel option for digital networking. Check the System Parameters Customer Options screen on the switch to see if the Secondary Data Module feature is turned on. If it is on, two DCP networking ports can be assigned to the same physical switch port.

To administer the switch to work with DCP networking ports, you must add a data module for each DCP networking port and create a hunt group that contains each of the data module extensions. Use the following instructions to administer the switch.

1. At the switch administration terminal, enter **add data-module extension** and complete the Data Module screen for the port.
2. In the `Name` field (optional), enter a name that identifies the networking port.
3. Enter **pdm** in the `Type` field.
4. Enter the `Port` location of the TN754 connected to the DCP networking port. If there are two I channels available, two DCP networking ports will have the same port location.
5. If you have a DEFINITY G3i, G3s, G3vs, or G3r version 2 switch with the optional I-channel feature, you see the `Secondary Data Module` field. The DCP networking ports are assigned in pairs.
 - If this is the first DCP networking port for this location, enter **n** in the `Secondary Data Module` field.
 - If this is the second DCP networking port for this location, enter **y** in the `Secondary Data Module` field.

6. Save the information.
7. Repeat Steps 2 through 6 for each DCP networking port.

Administering a Hunt Group for DCP Networking Ports

If there are two or more DCP networking ports, it is recommended that they be placed in a switch Hunt Group.

To assign the DCP networking ports to a hunt group, use the following procedure:

1. To access the Hunt Group screen, enter **add hunt-group number** at the switch administration terminal, or enter **add hunt-group next** to assign the next available hunt group number. Page 1 of the screen displays.
2. In the `Group Extension` field, enter an unused extension number. This is the extension a remote system will dial to establish a networking connection with the local INTUITY AUDIX system. (The extension which is part of the dial string at the remote system.)
3. In the `Group Type` field, enter **ucd** (alternates when selecting digital networking ports).
4. In the `Group Name` field, enter a name that identifies the DCP digital networking ports.
5. In the `COR` field, enter a class of restriction (COR) number that reflects the desired restriction for the digital networking ports.
6. In the `Message Center` field, enter **none**
7. In the `ACD` field, enter **n**
8. In the `Queue` field, enter **n**
9. In the `Vector` field, enter **n**
10. Page to the `Group Member Assignments` of the Hunt Group screen.
11. Enter the Data Extension of the first networking port created in the previous section for Extension one, and enter the name identified on the Data Module screen for the networking port.
12. Enter the Data Extensions of the remaining DCP networking ports, and enter the name identified on the Data Module screen for each networking port.
13. Save the information.

Administering DCP Mode 1

Administration depends on whether you are using static (high-speed data only) or dynamic (voice and high-speed data) switched 56 access.

NOTE:

Any DEFINITY Generic 1 switches in a 56 Kbps network that includes a DEFINITY Generic 2 switch must be running at least Issue 7.2 software.

Static Access

For static (high-speed data only) 56-Kbps switched access, administer the switch as follows:

1. At the switch administration terminal, enter **add trunk-group**. Set the comm type to **DATA** and administer the switch for wink in/wink out.
2. Enter **change system-parameters features**. Set the off-premises tone detect to **25**.
3. Enter **change ds1 circuit pack**. Set the `signaling mode` field to robbed-bit and set either **ZCS** or **B8ZS** to match the central office.

Dynamic Access

For dynamic (voice and high-speed data) 56 Kbps switched access, the switch must be administered as follows:

1. Enter **add trunk-group**. Set the comm type to **RBAVD**, the baud rate (or bit rate) to **19.2**, and administer the switch so it matches the central office trunk type.
2. Enter **change system-parameters features**. Set the off-premises tone detect to **25**.
3. Enter **change ds1 circuit pack**. Set the `signaling mode` field to **robbed-bit** and set either **ZCS** or **B8ZS** to match the central office.

If network tests are needed, see the maintenance book for your MAP platform and release.

Administering DCP Mode 3

The DS1 circuit pack uses the Common Channel Signaling mode to provide 23 trunks for data transmission and one channel for signaling. The DS1 trunk group must be assigned for Alternate Voice/Data (AV/D).

See the switch documentation for administering DS1 and/or ISDN facilities, or refer to the information received from the design center. If network tests are needed, see the maintenance book for your MAP platform and release.

Administering RS-232

To administer the switch to work with RS-232 networking ports, you must administer all modems used for RS-232 networking and create a hunt group that contains each of the modem extensions. Use the following instructions to administer the switch.

Modem

For each modem used, administer a Station screen.

1. At the switch administration terminal, enter **add station extension** or **add station next** to use the next available extension. The Station screen displays.
2. In the `Type` field, enter **2500**
3. In the `Port` field, enter the port location of the TN746B port to which the modem connects.
4. In the `Name` field, enter a name that identifies the modem (such as `dignet modem1`).
5. In the `COR` and `COS` fields, enter a desired COR and/or COS for the modem.
6. In the `Tests` field, enter **y** to enable port maintenance tests.
7. In the `LWC Reception` field, enter **none**
8. In the `LWC Activation` field, enter **n**
9. In the `Coverage Msg Retrieval` field, enter **n**
10. In the `CDR Privacy` field, enter **n**
11. In the `Auto Answer` field, enter **none**
12. In the `Redirect Notification` field, enter **n**
13. In the `Data Restriction` field, enter **n**
14. In the `Per Button Ring Control` field, enter **n**
15. In the `Call Waiting Indication` field, enter **n** (Required).
16. In the `Bridged Call Alerting` field, enter **n**

17. In the `Att. Call Waiting Indication` field, enter **n**
18. In the `Off Premise Station` field, enter **n**
19. In the `Distinctive Audible Alert` field, enter **n**
20. In the `Switchhook Flash` field, enter **n**
21. In the `Message Waiting Indicator` field, leave it blank.
22. In the `Adjunct Supervision` field, enter **n**
23. Enter the `Site Data` if required.
24. Save the changes.
25. Repeat Steps 2 through 24 for each modem.

Hunt Group for Modem Ports

Set up the modems for the RS-232 networking ports in a hunt group. The Group Extension for each hunt group becomes part of the Dial String on the Digital Network Machine Administration window.

1. To access the Hunt Group screen, enter **add hunt-group number** at the switch administration terminal, or enter **add hunt-group next** to assign the next available hunt group number. Page 1 of the screen displays.
2. In the `Group Extension` field, enter an unused extension number (such as 40020). This is the extension a remote system will dial to reach the RS-232 networking ports. (This extension becomes part of the Dial String on the Digital Network Machine Administration window set up on the local system and is needed to reach these ports.)
3. In the `Group Type` field, enter **ucd** (alternates when selecting ports).
4. In the `Group Name` field, enter a name that identifies the ports (such as RS232 Ports).
5. In the `COR` field, enter a class of restriction (COR) number that reflects the desired restriction for the RS-232 networking ports.
6. In the `Message Center` field, enter **none**
7. In the `LWC Reception` field, enter **none**
8. In the `ACD` field, enter **n**
9. In the `Queue` field, enter **n**
10. In the `Vector` field, enter **n**
11. Page to the Group Member Assignments of the Hunt Group screen.
12. Enter the extension of the first modem for Extension one (such as 40021). The name displays that was entered on the Station screen.

13. Enter the extension of the second modem for Extension two (such as 40022). The name displays that was entered on the Station screen.
14. Save the changes.

Administering TCP/IP

TCP/IP does not require any switch administration.

System 85

Use the switch administration procedures in this section for System 85 switches. Log in to the switch administration terminal. Refer to your switch administration documentation for login procedures.

Administering the DCP Networking Ports

System 85 can use both I-channels of the DCP port. The DCP circuits are assigned as follows using the Maintenance and Administration Panel (MAAP).

1. Assign a class of service (COS) for the INTUITY AUDIX digital networking ports that has touch-tone dialing and data protection—permanent enabled (use Proc 010, Word 1 and Proc 010, Word 3).

Wd	1	2	3	4-10	11	12	13	14	15	PROC
1	cos	-	0	0	-	-	0	0	1	010

Wd	1	2-10	11	12	13	14	15	-	23	PROC
3	cos	0 ¹	0	0	1	0	0		2	010

1. Fields 2 through 10 may be assigned for toll fraud protection.
2. For remote networking configurations, if the INTUITY AUDIX networking extension is dialing AAR or ARS to reach a remote AUDIX system, make sure an appropriate FRL is assigned to the COS for the INTUITY AUDIX networking extensions (Proc 010, Word 3, Field 23).
2. The bearer capability of the INTUITY AUDIX digital networking ports should be assigned to their class of service using Proc 010, Word 4.

Wd	1	2	3	4	PROC
4			1		010

1. Value of this field differs depending on networking configuration.

3. Assign an extension number for each networking port (use Proc 000, Word 1). Port 1 should have a Direct Inward Dial (DID) extension if the INTUITY AUDIX system is to be accessed from a remote AUDIX system through the public network.

The extension numbers shown are only examples; use the extensions from the design center.

Wd	1	2-5	7	8	9	PROC
1	xxxx0	-	cos	-		000
1	xxxx1	-	cos	-		000
1	xxxx2	-	cos	-		000
1	xxxx3	-	cos	-		000
1	xxxx4	-	cos	-		000
1	xxxx5	-	cos	-		000

4. Assign the extensions to hunt to each other (use Proc 000, Word 2). Normally the extensions hunt in a circular pattern. Hunt sequences are determined by the design center.

This sequence is only an example; use the hunt sequence from the design center.

Wd	1	2	3	4	5	6	7	8	9	10	PROC
2	xxxx0	xxxx1	0	0	0	0	0	0	0	0	000
2	xxxx1	xxxx2	0	0	0	0	0	0	0	0	000
2	xxxx2	xxxx3	0	0	0	0	0	0	0	0	000

5. For each General Purpose Port (GPP) equipment location, assign the following characteristics (use Proc 051, Word 1). Unless specified, leave the field dashed or blank.

- a. Terminal Type = AP32 (Field 6 = 10)
- b. Originating Preference = Prime Appearance (Field 10 = 2)
- c. Terminating Preference = None (Field 11 = 0)
- d. Keyboard Dialing = active (Field 13 = 1)

Wd	Fields 1-5	6	7	8	9	10	11	12	13	14	PROC
1	circuit0	10	-	-	-	2	0	-	1	-	051
1	circuit1	10	-	-	-	2	0	-	1	-	051

6. For each GPP equipment location, assign two appearances with the following characteristics (Proc 052, Word 1):
 - a. Device Type = Basic Set (Field 6 = 0)
 - b. Member = 0 (first appearance), then 1 (second appearance) (Field 7 = 0 or 1)
 - c. Extension Number = extensions assigned above (Field 8)
 - d. Call Appearance Number on this Set = 1 (Field 9 = 1)
 - e. Line Type = Prime Line (Field 10 = 1)
 - f. Alert Type = alert (Field 11 = 1)
 - g. Home Terminal = home terminal (Field 12 = 1)
 - h. Originating Call Appearance Only = not originating only (Field 13 = 0)
 - i. SAC Group = not a SAC member (Field 14 = 0 on R2V4 or later systems)

Wd	Fields 1-5	6	7	8	9	10	11	12	13	14	PROC
1	circuit0	0	0	xxxx0	1	1	1	1	0	0	052
1	circuit0	0	1	xxxx1	1	1	1	1	0	0	052
1	circuit1	0	0	xxxx2	1	1	1	1	0	0	052
1	circuit1	0	1	xxxx3	1	1	1	1	0	0	052

7. Auxiliary tone pack. A System 85 must have at least one SN253C auxiliary tone pack in every module; this pack is administered using Proc 252, Word 2.
8. Tone detector pack (remote networking configurations). A System 85 requires an SN255 tone detector pack or an SN255B pack. Four tone detectors should be assigned on each SN255 board; the tone-detector trunk group is assigned in Proc 100, Word 1 as trunk type 100, and circuits are assigned to this trunk group in Proc 150.

Administering DCP Mode 1

The following translations need to be completed for a System 85 for static switched 56 Kbps (dynamic access is not supported for System 85 R2V3 or R2V4; System 85 R2V2 does not support 56 Kbps networking). System 85 is administered as follows using the Maintenance and Administration Panel (MAAP).

1. Using Procedure 010, Word 4, assign mode 1 data to the class of service associated with the INTUITY AUDIX digital networking ports (Field 3 = 1).

Wd	1	2	3	4	PROC
4			1		010

2. Using Procedure 100, Word 1, translate the trunk group (tgroup) as follows:
 - a. Assign a dial access code (DAC) in Fields 2 through 5. The dial string used by the INTUITY AUDIX digital networking ports must be routed via a dedicated (static) trunk group using this DAC.
 - b. Assign a DMI trunk type (Field 6 = 109). The DS1 facility used to transport the 56 Kbps call must employ robbed-bit signaling.

Wd	1	2-5	6	7	8	PROC
1	tgroup	dac	109	0	0	100

3. Using Procedure 101, set the following values:
 - a. Set Touch Tone In and Touch Tone Out to 1 (Fields 6 and 7 = 1).
 - b. Set the AV/D bit for the trunk group to 0 (Field 17 = 0).

Wd	1	2	3	4	5	6	7	8	-	16	17	PROC
1	tgroup					1	1				0	101

Administering DCP Mode 3

The DS1 circuit pack uses the Common Channel Signaling mode to provide 23 trunks for data transmission and one channel for signaling. The DS1 trunk group must be assigned for Alternate Voice/Data (AV/D) using the following MAAP procedures.

Local and Remote INTUITY AUDIX Configurations

1. Assign a bearer capability of mode 0 data to the class of service for the INTUITY AUDIX digital networking extensions (Proc 010, Word 4, Field 3 = 4).

Wd	1	2	3	4	PROC
4			4		010

2. Assign a trunk group and trunk type using Procedure 100, Word 1. Assign members to the trunk group using Procedure 116.

Remote INTUITY AUDIX Configurations

The trunk group used to transport the INTUITY AUDIX digital networking call must be DS1, and the DS1 pipe must employ 24th channel signaling.

1. Enter the trunk group number (tgroup) in Field 1.
2. Make sure Touch Tone In and Touch Tone Out are set to 1.

3. (Fields 6 and 7 = 1).
4. AV/D must be set to 1 (Field 17 = 1).

Wd	1	2	3	4	5	6	7	8		16	17	PROC
1	tgroup					1	1				1	101

Remote Configurations Using AAR or ARS

If the local INTUITY AUDIX DCP extensions dial Automatic Alternate Routing (AAR) or Automatic Route Selection (ARS) to reach a remote AUDIX system, make sure the Facilities Restriction Level (FRL) assigned to the INTUITY AUDIX digital networking extensions' Class of Service is of a sufficient value to get over the pattern and preference to allow calls from mode 0 data endpoints (Proc 309, Word 5, Field 10 = 1, or Proc 321, Word 5, Field 9 = 1).

Administering RS-232

Perform the following switch administration for the RS-232 networking ports.

1. Add an analog station for each modem using Proc 000 Word 1.
2. Set up hunting for all modems using Proc 000 Word 2.

Administering TCP/IP

TCP/IP does not require any switch administration.

DEFINITY Generic 2

This section describes how to administer INTUITY AUDIX digital networking on a DEFINITY Generic 2 switch using the enhanced mode of Manager II.

Some general notes on Generic 2 requirements include:

- Generic 2 can use both I-channels of the DCP port. Assign the DCP circuits as Dual Port Data.
- Auxiliary tone pack. A Generic 2 with traditional modules must have at least one SN253C auxiliary tone pack in every traditional module. Administer this pack using Proc 252, Word 2. No administration is required for the TN748C tone pack in a Generic 2 universal module.
- Tone detector pack (remote networking configurations). A Generic 2 with traditional modules requires an SN255 or SN255B tone detector pack. Assign four tone detectors on each SN255 board. Assign the tone-detector trunk group in Proc 100, Word 1 as trunk type 100, and assign circuits to this trunk group in Proc 150.

- The TN748C board in a Generic 2 universal module can use channels 4 and 8 for tone detection. You can assign up to two tone-detector circuits on each board and place the circuits in a tone-detector trunk group. The number of tone detector circuits needed depends on the data traffic characteristics of the switch.

Manager III and Manager IV Administration

DEFINITY Manager III and Manager IV are covered in their own documentation sets. Refer to the appropriate manual for more information on administering systems using Manager III or Manager IV:

- *DEFINITY Manager III Operations*, 585-222-701
- *DEFINITY Manager IV Facilities Management Operations*, 585-223-702
- *DEFINITY Manager IV Terminal Change Management Operations*, 585-223-701
- *DEFINITY Manager IV System Administration*, 585-223-700

Administering the DCP Networking Ports Using Manager II

Use the following procedure to administer networking ports on Generic 2 using Manager II:

1. Assign the extension numbers for the networking ports on the switch (Proc 000, Word 1). Use the extension numbers provided by the design center.
Use a class-of-service (Proc 010, Word 1 and Word 3) that has touch-tone dialing capability and data protection — permanent.
2. Assign all extensions to Bearer Capability Class-of-Service (BCCOS) 6. This allows the DCP port to communicate with either a digital or analog outside facility (Proc 014, Word 1 and Word 2).



NOTE:

The default BCCOS 0 through 8 should *not* be modified to support INTUITY AUDIX digital networking.

3. Assign the DCP equipment location as Dual Port Data (Proc 051, Word 1).
4. Repeat Step 3 for the next DCP equipment location.
5. Assign line appearances to the DCP equipment location. Assign the first extension to Device Type 0 (Field 6) Member 0 (Field 7).

6. Repeat Step 5, only use Device Type 0 Member 1 and assign a different extension to it.
7. Repeat Steps 5 and 6 for the next DCP equipment location. Assign two other extension numbers to Device Type 0 (Field 6) Members 0 and 1 (Field 7) for this equipment location.

If desired, you may display the extensions using Proc 052, Word 2.

Administering DCP Mode 1

The following Manager II translations need to be completed for a Generic 2 for static switched 56 Kbps networking.

1. Use Procedure 100, Word 1, to complete the trunk group translation. Enter the appropriate values supplied by the design center.



NOTE:

To administer members of the trunk group, use Procedure 116.



NOTE:

If you need to change the signaling type, use Procedure 100, Word 3.

2. Use Procedure 100, Word 2. Assign BCCOS 7 to the trunk group.



NOTE:

BCCOS 7 is the default and should not be modified. However, if BCCOS 7 has been modified at your site, use a custom BCCOS that has the default values of BCCOS 7 (one that uses robbed-bit signaling).

3. Use Procedure 101, Word 1, to complete the trunk group characteristics. Enter the appropriate values supplied by the design center.

Administering DCP Mode 3

This section describes the Manager II translations that must be completed on Generic 2 to implement DCP Mode 3 digital networking on INTUITY AUDIX systems.

Local and Remote INTUITY AUDIX Configurations

You should already have assigned BCCOS 6 to the AUDIX DCP extensions when you administered the DCP networking ports.

Remote INTUITY AUDIX Configurations

The trunk group used to transport the INTUITY AUDIX networking call must be DS1, and the DS1 pipe must employ 24th channel signaling.

Using Procedure 100, Word 2, assign BCCOS 3 to the DS1 trunk group to provide 64-Kbps clear-channel signaling.

⇒ NOTE:

If BCCOS 3 has been modified at your site, use a custom BCCOS that has the default values of BCCOS 3.

Remote Configurations Using AAR or ARS

If the local INTUITY AUDIX DCP extension is dialing AAR or ARS to reach a remote AUDIX system, the appropriate pattern and preference must indicate BCCOS 3 (Proc 309, Word 5, Field 6 = 3, or Proc 321, Word 5, Field 5 = 3).

Administering RS-232

Perform the following switch administration for the RS-232 networking ports.

1. Add an analog station for each modem using Proc 000 Word 1.
2. Set up hunting for all modems using Proc 000 Word 2.

Administering TCP/IP

TCP/IP does not require any switch administration.

Overview

Before you add to or make changes to your network, you must plan the process. This appendix provides worksheets and information to help you collect, plan, and record digital networking information.

INTUITY™ AUDIX® digital networking requires two levels of planning:

- Preplanning performed by the design center, the account team, and the customer
- Administration planning performed by the customer, the network administrator, and the account team

Purpose

This appendix provides an overview of the design process and worksheets to aid you with INTUITY AUDIX digital network planning. The worksheets presented in this appendix are an aid for interacting with the design center. Work with the design center to complete the network planning process.

Design Center Overview

All digital networks must be designed and technically assured by the design center. Installation and maintenance support of digital networks will be offered only to those customers/account teams who follow this design process.

To make additions or changes to your digital network, the design center must gather or receive information and requirements about each site. Some of the information gathered and provided by the design center includes:

- Information on installed INTUITY AUDIX systems, DEFINITY AUDIX R3.2 systems, and AUDIX R1V5 or later systems
- Information on switches
- Transmission issues concerning network access between networked systems for incoming and outgoing messages
- Traffic studies to determine if the proposed network is feasible with the proposed equipment and data rates including:
 - The percentage of messages that will be exchanged remotely
 - The number of local users
 - The average number of messages per-day, per-user
 - The average length of voice, fax, and e-mail messages
 - The percentages of voice, fax, e-mail, and call answer messages
 - The percentage of messages exchanged between each INTUITY AUDIX system, DEFINITY AUDIX system, or AUDIX R1 system and the length of the average messages
- Transmission scheduling issues
- Disk space requirements
- Trunking issues

The design center can assist with the initial testing of the network and perform troubleshooting with the assistance of the remote support center.

Planning with the Design Center

The procedure for planning with the design center for INTUITY AUDIX digital networking is as follows:

1. The Account Team completes the following and sends it to the design center:
 - E-1154, *Needs Assessment/Request for Design Support* from the *GBCS Design and Implementation Guide*
 - Worksheet A: *Determine Local and Remote Machine Information*
 - Worksheet B: *INTUITY AUDIX, AUDIX R1, DEFINITY AUDIX Network Planning*
(Contact the design center if you have questions.)
 - Worksheet C: *Planning Worksheet for INTUITY AUDIX TCP/IP Networking* (One per INTUITY AUDIX using TCP/IP for networking)
 - Network Map
2. The design center completes a 1495 response and sends it to the Account Team along with a request for any additional information.
3. The design center completes the Installation Specification and returns it as specified by the Account Team. The Installation Specification must be provided to the technician for cutover.
4. The design center provides a copy of the final Installation Specification to the appropriate remote support center for maintenance support purposes.

Network Map

Provide a network map. Include the following information:

- Identify the location of each node.
- Provide the switch and voice mail type and vintage at each node.
- Identify connecting facilities and the vendor between each node.
- Include whether the connection between systems is DCP Mode 1 (56 Kbps), DCP Mode 3 (64 Kbps), RS-232 (9600 or 19,200 bps), or TCP/IP for remote connections or direct connect.
- Identify the number of users at each node.
- Identify each AUDIX machine name as you intend to identify it in the digital networking administration.
- Will the node be DCS, SDN, or ISDN?
- Provide ATTOMS or DOSS configuration number for each node if networking does not exist (Account Team).

Worksheet A: Determine Local and Remote Machine Information

Use this worksheet to collect information about each machine in the network.

Date _____
Prepared By _____
Contact Telephone Number _____

To design a successful digital network, you must gather information for the local INTUITY AUDIX system and for all remote systems in the network. Use as many copies of the worksheet as your network requires. If you need to make more copies of the worksheet, remove the worksheet from the binder and use a photocopier.

Machine Name: The term refers to the name of the local and remote machines in the network. Include all machines with which you plan to exchange messages. For INTUITY AUDIX Release 4, use an alphanumeric name between 1 and 10 characters (case-sensitive, no spaces, hyphens and underscores allowed, cannot start with a number). For all other machines, use an alphanumeric name between 1 and 8 characters (lower case, no spaces, no special characters).

Machine Type: Enter *Lucent INTUITY*, *DEFINITY AUDIX*, or *AUDIX R1*. Include the release and version number. For example, AUDIX R1V8.

Machine Location: Enter either *local* or *remote* and include the physical location of the machine, such as the mailing address or the business address.

Switch Type: The term refers to the name of the switch. For example, DEFINITY Generic 3r Communications System.

Software Generic: The term refers to the release of the software on the switch. For example, G3rV1.

Installed Boards: Use the following information to list all boards already installed in the switch that are required for networking (see Chapter 3, "Types of Connections" for switch or customer requirements for DCP Mode 1, DCP Mode 3, and switched RS-232 using modems).

Worksheet B: INTUITY AUDIX, AUDIX R1, DEFINITY AUDIX Networking Planning

1. Type Digital___ Analog___ AMIS___ LAN___
Briefly Describe Type Selected _____
2. How many nodes? _____
3. Provide a network map showing how the nodes are connected.
 - a. Provide switch and voice mail type and vintage at each node.
 - b. Identify connecting facilities and vendor between each node.
 - c. Identify the number of users at each node.
 - d. Will node be DCS, SDN, or ISDN? _____
 - e. Provide ATTOMS or DOSS configuration number for each node if networking does not exist.
4. If the network supports DCS or ISDN, can you use 64 Kbps (clear) digital networking? Yes ___ No ___
5. If the network is SDN, can you use 56 Kbps digital connectivity? Yes ___ No ___
6. Who is the network provider? (Central Office) _____
7. Do you want to use 9.6 (RS-232) connectivity? Yes ___ No ___
8. Are any of the following in your network? (Show on map)
 - a. MUXs ___ DACs ___ Servers ___ Bridges ___
Controllers ___ Modems ___
 - b. If yes, describe type. _____

Be Advised of the Following:

1. The INTUITY AUDIX system will not support modem pooling.
2. INTUITY AUDIX, DEFINITY AUDIX, and/or AUDIX R1 systems may not work digitally in a network with multiplexers.
3. They also may not work with multiplexers or other central office equipment having echo suppression, bit inversion, or incomplete bandwidth (restricted).
4. Dynamic networks require all network paths used to be unrestricted, 64 Kbps data capable, or 56 Kbps data capable.
5. ISDN trunks must have B8zx ESF unrestricted 56 Kbps and/or 64 Kbps data capability.
6. Modems, depending on type, may have to be certified by Lucent Technologies.

Worksheet C: Planning Worksheet for INTUITY AUDIX TCP/IP Networking (One per INTUITY AUDIX using TCP/IP)

Machine Name _____ Switch Room Telephone # _____

Machine Password _____ AUDIX Remote Maintenance # _____

Address Ranges		
Prefix	Beginning Extension	Ending Extension
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Type of Lucent INTUITY? MAP _____ Software Version? _____

Ethernet (802.3) Card? _____

Lucent INTUITY ACCX Card in Place? _____ How Many? _____

How many network ports are turned on? _____

How many high? _____ 56K? _____ 64K? _____

How many low? _____ RS-232? _____ Other Type? _____

How many LAN? _____

LAN connection? (RJ-45) 10 Base-T (twisted pair with link integrity) _____

LAN connection twisted pair (no link integrity?) _____

LAN connection BNC? (10 Base-2, thin ethernet) _____

LAN connection AUI? (thick ethernet) _____

LAN manager? _____ Telephone Number _____

Existing LAN traffic 10 to 20% _____ or other explain? _____

IP Address _____ Existing? _____

Subnet Mask _____

Default Gateway Address _____

Switch Type 75/G1/G3i/G3r _____

Digital Network Planning Worksheets

The design center provides most of the planning worksheet information in their Installation Specification. Complete the following digital network planning worksheets as an aid for planning.

Worksheet E: Define the Networking Channel Configuration

Use this worksheet to define the networking channel configuration. The design center will include information to complete the networking channel configuration in the Installation Specification.

Date _____

Prepared By _____

Contact Telephone Number _____

ACCX or LAN Card ¹	Channel Number	Type (DCP, RS-232, or TCP/IP)	Is the Channel Activated? (yes/no)	Is the Channel Purchased? (yes/no)
1	1			
	2			
	3			
	4			
2	5			
	6			
	7			
	8			
3	9			
	10			
	11			
	12			

-
1. Identify whether ACCX or LAN card. There can be a maximum of 3 cards total for digital networking. Only one LAN card is allowed. If there is a LAN card, the type must be TCP/IP. For an ACCX card, the type can be DCP or RS-232.

Notes:

Worksheet F: RS-232 Channel Configuration

Use this worksheet to define the RS-232 channel configuration. The design center includes channel configurations in the Installation Specification.

Date _____

Prepared By _____

Contact Telephone Number _____

Channel Number	Sync Mode ¹	Data Rate(s) ²	Configuration ³	Modem Initialization String ⁴
1		1		
		2		
2		1		
		2		
3		1		
		2		
4		1		
		2		
5		1		
		2		
6		1		
		2		
7		1		
		2		
8		1		
		2		
9		1		
		2		
10		1		
		2		

Continued on next page

Channel Number	Sync Mode¹	Data Rate(s)²	Configuration³	Modem Initialization String⁴
11		1		
		2		
12		1		
		2		

-
1. Asynchronous (9600 or 19200)
 2. 9600 or 19200
 3. Switched or dedicated
 4. Provided by the design center

Worksheet G: Define Local Machine Administration

Use this worksheet to collect information for the local INTUITY AUDIX Digital Networking machine.

Date _____

Prepared By _____

Contact Telephone Number _____

Local Machine Administration	
Field	Your Entry
<p>Local Machine Name. The field displays the name of the local machine. A local machine is added and assigned the name <i>local</i> when the INTUITY AUDIX system is installed. When there is digital networking, each machine requires a unique name. You can change the local machine name by using the RENAME key. Use an alphanumeric name between 1 and 10 characters (case sensitive, hyphens and underscores allowed, cannot start with a number, no blank spaces).</p>	
<p>Connection Type. The term defines the network connection type used during loopback testing on the local machine. Select one of the following connection types:</p> <ul style="list-style-type: none"> ■ DCP Mode 1 — 56 Kbps ■ DCP Mode 3 — 64 Kbps ■ RS-232 Async — 9.6 or 19.2 Kbps ■ TCP/IP — connecting to a LAN or direct connect 	

Continued on next page

Local Machine Administration	
Field	Your Entry
<p>Dial String. This field is used only when this system calls itself for testing purposes. Valid entries are 0 to 65 alphanumeric characters including the following:</p> <ul style="list-style-type: none"> ■ Digits ■ Upper and lower case letters ■ Pound sign (#), asterisk (*), plus sign (+), percent sign (%), parentheses (), hyphen (-), spaces, 2-second pause (,) ■ ATDT (the attention code of the modem for RS-232) <p>Character strings that have special meaning within the INTUITY AUDIX system must be enclosed within double quotes. Valid special strings are:</p> <p>“W” — wait for another dial prompt “B” — replace with a BREAK character “CR” — replace with a carriage return “LF” — replace with a line feed</p> <p>Table 4-5 on page 4-23 provides a complete description of the dial string.</p>	
<p>Data Rate. Select the communication rate for the connection. The rate must match the value entered in the connection type field. For example, if you want to use DCP Mode 1, the data rate must be 56 Kbps. Use the following list to select a data rate:</p> <ul style="list-style-type: none"> ■ For DCP Mode 1, enter 56000 (56 Kbps) ■ For DCP Mode 3, enter 64000 (64 Kbps) ■ For RS-232 asynchronous, enter 9600 (9.6 Kbps) or 19200 (19.2 Kbps) ■ TCP/IP does not require a data rate entry 	
<p>Password. Select a five- to ten-character password for the local machine. The password allows remote machines to connect with the local machine.</p>	
<p>Channel. The field is used by the local machine during loopback tests. Do not enter any information in the field.</p>	

Worksheet H: Define Local Machine Profile

Use this worksheet to collect information for the local INTUITY AUDIX system. The design center will include a local Machine Profile screen in the Installation Specification.

Date _____
 Prepared By _____
 Contact Telephone Number _____

Local Machine Profile	
Field	Your Entry
Machine Name. Enter the local machine name from Worksheet G.	
Machine Type	local
Location	local
Voiced Name. The system sets this field to y when a user with announcement permission records a name for the local system.	display only
Extension Length. Enter the length of extensions on the local system.	
Voice ID. Display-only field.	display only
<i>Default Community.</i> The default community number to be used for the sending restrictions feature. The System Parameters Sending Restrictions screen specifies a matrix of sending restriction communities. See your administration book for your release for information on this screen.	
Prefix. Prefixes can be used on the local machine, but they limit the functionality and are not recommended.	
Start Ext. Starting extensions for the ranges of telephone numbers used on this local system.	
End Ext. Ending extensions for the ranges of telephone numbers used on this local system.	

Continued on next page

Local Machine Profile — Continued	
Field	Your Entry
Warning	display only
Send to Non-Administered Recipients. Enter y if the system will attempt to deliver messages to nonadministered remote recipients. Enter n if messages cannot be sent to nonadministered recipients.	
Updates In. Enter y if the local system will accept updated database information from the remote system (provided the Updates Out field on the remote system is set to y).	
Updates Out. Enter y if the local system will send updated database information to the remote system (provided the Updates In field on the remote system is set to y .)	
<p>Network Turnaround. Enter y if a network connection that originated from this local system is allowed to turn around after the local system has sent all of its network data to the remote system. The remote system may then return update information, messages, and status on the same connection. This feature reduces toll charges and increases the efficiency of the system in networks with more than 10 machines. The calling system pays the toll charges.</p> <p>Network Turnaround must be set to y on the remote Machine Profile screen for this feature to work between the local system and the remote system.</p>	

Worksheet I: Define the Remote Machine Administration

Use this worksheet to collect information for each remote INTUITY AUDIX system, DEFINITY AUDIX system, or AUDIX R1 system. You must administer each remote system on the local system. The design center will include a Digital Network Machine Administration screen in the Installation Specification for each remote system. Copy this worksheet and complete for each remote system.

Date _____

Prepared By _____

Contact Telephone Number _____

Digital Network Machine Administration	
Field	Your Entry
<p>Machine Name. Enter the name of the remote machine. For INTUITY AUDIX Release 4, use an alphanumeric name between 1 and 10 characters (case sensitive, hyphens and underscores allowed, cannot start with a number, no blank spaces). For other systems, use an alphanumeric name between 1 and 8 characters (lower case, no spaces, no special characters).</p>	
<p>Connection Type. Enter the connection type between the local machine and the remote machine. Valid entries are:</p> <ul style="list-style-type: none"> ■ DCP Mode 1 — 56 Kbps ■ DCP Mode 3 — 64 Kbps ■ RS-232 Async — 9.6 or 19.2 Kbps ■ TCP/IP — connecting to a LAN or direct connect 	
<p>Dial String. Enter the dial string needed to call the remote system. Valid entries are 0 to 65 alphanumeric characters including the following:</p> <ul style="list-style-type: none"> ■ Digits ■ Upper and lower case letters ■ Pound sign (#), asterisk (*), plus sign (+), percent sign (%), parentheses (), hyphen (-), spaces, 2-second pause (,) ■ ATDT (the attention code of the modem for RS-232) <p>Character strings that have special meaning within the INTUITY AUDIX system must be enclosed within double quotes. Valid special strings are:</p> <p>“W” — wait for another dial prompt “B” — replace with a BREAK character “CR” — replace with a carriage return “LF” — replace with a line feed</p> <p>Table 4-8 on page 4-32 provides a complete description of the dial string.</p>	

Continue on next page

Digital Network Machine Administration — Continued	
Field	Your Entry
<p>Message Transmission Schedule. <i>Start Time</i> – Enter the starting time for a message transmission period to the remote system (such as 00:01 for one minute after midnight).</p> <p><i>End Time</i> – Enter the ending time for a message transmission period to the remote system (such as 23:59 for one minute before midnight).</p> <p><i>Interval</i> – Enter the interval at which the local INTUITY AUDIX system will call this remote system (such as 00:05 for every 5 minutes). The INTUITY AUDIX system checks the queue at this interval (such as every 5 minutes) and calls the remote system if something is in the queue for this remote system.</p> <p>It is recommended that you set up different start times and intervals for each remote system so the local INTUITY AUDIX system is not trying to call all remote systems at the same time.</p>	<p>Start Time</p> <hr/> <p>End Time</p> <hr/> <p>Interval</p> <hr/>
<p>Data Rate. Select the communication rate for the connection. The rate must match the value entered in the connection type field. For example, if you want to use DCP Mode 1, the data rate must be 56 Kbps. Use the following list to select a data rate:</p> <ul style="list-style-type: none"> ■ For DCP Mode 1, enter 56000 (56 Kbps) ■ For DCP Mode 3, enter 64000 (64 Kbps) ■ For RS-232 asynchronous, enter 9600 (9.6 Kbps) or 19200 (19.2 Kbps) ■ TCP/IP does not require a data rate entry 	
<p>Password. Enter the password the remote system must use when establishing a networking connection to the local INTUITY AUDIX system.</p>	
<p>Channel. If you have a dedicated line to the remote system, enter the channel number you want the local system to use for that line.</p>	
<p>Machine Type. Enter the machine type of the remote machine. The selections are:</p> <ul style="list-style-type: none"> ■ AUDIX ■ INTUITY 1.0 or 2.0 ■ INTUITY 3.0 ■ INTUITY 4.0 or later ■ DEFINITY AUDIX 3.2 	
<p>Send Multimedia Messages. Enter yes if the remote machine will accept multimedia messages. INTUITY AUDIX Release 3 can accept fax messages. INTUITY AUDIX Release 4 can accept fax and e-mail messages. Other systems cannot accept multimedia messages.</p>	

Notes

Worksheet J: Define the Remote Machine Profile

Use this worksheet to collect information for each remote INTUITY AUDIX system, DEFINITY AUDIX system, or AUDIX R1 system. You must administer each remote system on the local system. The design center will include a remote Machine Profile screen in the Installation Specification for each remote system. Copy this worksheet and complete for each remote system.

Date _____
 Prepared By _____
 Contact Telephone Number _____

Remote Machine Profile	
Field	Your Entry
Machine Name. Enter the remote machine name from Worksheet I.	
Type. Enter the type: INTUITY, AUDIX, or DEFINITY AUDIX.	
Location	remote-digital
Voiced Name. The system sets this field to y when a user with announcement permission records a name for the remote system.	display only
Extension Length. Enter the length of extensions on the remote system.	
Voice ID. Display-only field.	display only
Default Community. The default community number to be used for the sending restrictions feature. The System Parameters Sending Restrictions screen specifies a matrix of sending restriction communities. See your administration book for your release for information on this screen.	
Prefix. Enter the prefix digits for the remote system. A user enters the prefix before the remote user's extension when addressing voice messages. To make the task simple for the user, use a short, descriptive prefix. The total length of the prefix and extensions must be < 25 characters. The prefix is used only by the INTUITY AUDIX system to identify users. It is not used for dialing out, so it does not need to match an area/office code.	

Continued on next page

Start Ext. Enter the starting extensions for the ranges of telephone numbers used on this remote system.	
End Ext. Enter the ending extensions for the ranges of telephone numbers used on this remote system.	
Warning	display only
Send to Non-Administered Recipients. Enter y if the INTUITY AUDIX system will attempt to deliver messages to nonadministered remote recipients. Enter n if messages cannot be sent to nonadministered recipients.	
Updates In? For now, leave this field set to n since this will simplify testing. After testing, set to y if this remote system will receive updates from the local machine. The local machine Updates Out field must be set to y .	
Updates Out? For now, leave this field set to n since this will simplify testing. After testing, set to y if this remote system will send updates to the local machine. The local machine Updates In field must be set to y .	
Network Turnaround. For initial administration, leave this field set to n since this will simplify testing. After testing, enable the feature if desired.	

Worksheet L: Administer DCP Networking Ports

Complete this worksheet for the DCP networking ports. This information is used to administer a Data Module screen on the Lucent Technologies switch for each networking port.

Date _____

Prepared By _____

Contact Telephone Number _____

Port	Data Extension	Name	Type	TN754 Port Location ¹	Secondary Data Module ²
1			pdm		
2			pdm		
3			pdm		
4			pdm		
5			pdm		
6			pdm		
7			pdm		
8			pdm		
9			pdm		
10			pdm		
11			pdm		
12			pdm		

-
1. Location on the switch of the TN754 connected to the DCP networking port. If there are two I channels available, two DCP networking ports will have the same port location.
 2. Enter **n** if this is the first DCP networking port for this location. Enter **y** if this is the second DCP networking port for this location.

Worksheet M: Assign a Hunt Group for the DCP Networking Ports

Complete the following information to define a hunt group on the Lucent Technologies switch for the DCP networking ports.

Date _____

Prepared By _____

Contact Telephone Number _____

Enter a hunt group number (or the next hunt group number will be assigned)	
Enter a hunt group extension (This is the extension a remote system will dial to establish a networking connection with the local INTUITY AUDIX system.)	
Group Type	ucd
Enter a hunt group name that identifies the DCP networking ports.	
Enter a class of restriction for the DCP networking ports.	
Message Center	none
ACD	n
Queue	n
Vector	n
Group Member Assignments (Enter the extensions of the DCP networking ports.)	Extension 1 _____ Extension 2 _____ Extension 3 _____ Extension 4 _____ Extension 5 _____ Extension 6 _____ Extension 7 _____ Extension 8 _____ Extension 9 _____ Extension 10 _____ Extension 11 _____ Extension 12 _____

Worksheet N: Administer RS-232 Modem Ports

Complete this worksheet for the modems used for RS-232 networking ports. This information is used to complete the Station screen on the Lucent Technologies switch.

Date _____

Prepared By _____

Contact Telephone Number _____

Port	Type	TN746B Port Location	Name	COR	COS
1	2500				
2	2500				
3	2500				
4	2500				
5	2500				
6	2500				
7	2500				
8	2500				
9	2500				
10	2500				
11	2500				
12	2500				

Additional Station screen settings for the RS-232 modems.

Tests	y
LWC Reception	n
LWC Activation	n
Coverage Msg Retrieval	n
CDR Privacy	n
Auto Answer	none
Redirect Notification	n
Data Restriction	n
Per Button Ring Control	n
Call Waiting Indication	n
Bridged Call Alerting	n
Att. Call Waiting Indication	n
Off Premises Station	n
Distinctive Audible Alert	n
Switchhook Flash	n
Message Waiting Indicator	leave blank
Adjunct Supervision	n

Worksheet O: Assign the Hunt Group for Modems

Complete this worksheet to define a hunt group on the Lucent Technologies switch for the RS-232 modems.

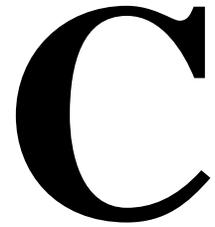
Date _____

Prepared By _____

Contact Telephone Number _____

Enter a hunt group number (or the next hunt group number will be assigned)	
Enter a hunt group extension. This is the extension a remote system will dial to reach the modem ports. (This extension becomes part of the Dial String on the remote Machine Profile screen set up on the local system and is needed to reach these ports.)	
Group Type	ucd
Enter a hunt group name that identifies RS-232 modems (such as AUDIX Modems).	
Enter a class of restriction for the modems.	
Message Center	none
LWC Reception	none
ACD	n
Queue	n
Vector	n
Group Member Assignments (Enter the extensions of the modems.)	Extension 1 _____ Extension 2 _____ Extension 3 _____ Extension 4 _____ Extension 5 _____ Extension 6 _____ Extension 7 _____ Extension 8 _____ Extension 9 _____ Extension 10 _____ Extension 11 _____ Extension 12 _____

Paradyne Comsphere Modem Settings for RS-232 Connections



Overview

This appendix provides Paradyne Comsphere modem front panel settings for RS-232 connections. RS-232 digital networking channels require a modem. Lucent Technologies ships and supports the Paradyne Comsphere 3810, 3820 or 3910 (non-United States) modem for RS-232 channels.

The modem connects to a standard analog port on the switch. All modem settings are controlled by the initialization string entered during the digital networking channel administration (see page 4-18). This initialization string is downloaded each and every time digital networking is stopped and started.

For instructions on installing the 3820 modem, see the system installation manual for your MAP platform and release.

Purpose

This appendix is for reference only. The modem initialization string is downloaded each time digital networking is stopped and started, and you should not need to set the modem from the front panel. You also can use the information in this appendix to check the modem settings if you are having trouble with a modem.

Configuring the Paradyne Comsphere 3820 Modem

The diagnostic control panel's (DCP) liquid crystal display (LCD) consists of two 16-character lines which display modem status, control functions, and configuration options. You may want to have the Comsphere modem documentation available.

⇒ NOTE:

These settings are for use with the Paradyne Comsphere 3820 modem.
These settings may behave differently on other types of modems.

Selecting the UNIX Dial Default Factory Configuration

The following procedure details the Comsphere 3820 front panel settings necessary to save the UNIX Dial default factory setting to the Active Saved mode. Perform these front panel settings directly on the modem.

⇒ NOTE:

Press **▶** to scroll forward and **◀** to scroll back.

1. Turn the modem off and then on.
2. On the diagnostic control panel (DCP), press **◀** or **▶** until you see `Configure`.
3. Press the function key directly under `Configure` to select the Configure menu.

The LCD displays `Ld EditArea frm.`

4. Press **▶** until you see `Factory`.
5. Press **F1** to display the factory preset configuration.

The LCD displays `Async Dial`.

6. Press **▶** until you see `UNIX Dial`.
7. Press the function key below `UNIX Dial` to select the UNIX Dial default factory setting.

The LCD displays the following lines:

```
Choose Function
Edit      Save
```

8. Press the function key directly under the `Save` option. The LCD displays the following lines:

```
Sav EditArea to
Active(Saved)
```

9. Press the function key directly under `Active(Saved)`. This saves the settings. The LCD displays `Command Complete`.
10. Press the double up arrow key to return to the top-level menu.

Setting the Async DTE Rate to the Required Speed on the 3820 Modem

Complete the following procedure to set the Async DTE rate to the desired speed, 19.2 Kbps or 9.6 Kbps.

1. Press `▶` on the DCP until you see `Configure`.
2. Press the function key directly under `Configure` to select the `Configure` menu.
The LCD displays `Ld EditArea frm`.
3. Press `▶` until you see `Active (Saved)`.
4. Press `F1` to select the `Active (Saved)` configuration.
The LCD displays the following lines:
`Choose Function`
`Edit Save`
5. Press `F1` (`Edit`) to edit the `Active (Saved)` configuration.
The LCD displays the following lines:
`Edit StrapGroup`
`DTE_Interface`
6. Press `F1` to edit the `DTE Interface`. The LCD displays the following lines:
`Async/Sync Mode`
`Nxt Async`
7. Press `F1` (`Nxt`) until you see `Async DTE Rate`.
8. Press `▶` until you see the speed you use for the networking port, either 19.2 Kbps or 9.6 Kbps.
9. Press `F2` to set the Async DTE Rate when the LCD displays the correct speed.
10. Proceed to the next section. *Do not* return to the top-level menu.

Setting the DTR Action and DSR Control to Standard RS-232

1. Press `F1` (`Nxt`) until you see `DTR Action`.
2. Press `▶` until you see `Stndrd_RS232`.
3. Press `F2` to set the DTR Action.

4. Press **(F1)** (Nxt) until you see DTR Control.
5. Press **(▶)** until you see Stndrd_RS232.
6. Press **(F2)** to set the DTR Control.
7. Proceed to the next section. *Do not* return to the top-level menu.

Setting the Error Control Mode to Buffer Mode

1. Press **(▲)**.
The LCD displays Edit StrapGroup on the display.
2. Press **(▶)** until you see V42/MNP/Buffer.
3. Press **(F1)** to edit V42/MNP/Buffer.
The LCD displays Err Control Mode.
4. Press **(▶)** until you see BufferMode.
5. Press **(F2)** to select BufferMode.
6. Press **(▲)**.
The LCD displays Edit StrapGroup.
7. Press **(▲)**.
The LCD displays the following lines:
Choose Function
Edit Save
8. Press **(F3)** (Save).
The LCD displays the following lines:
Sav EditArea to
Active(Saved)
9. Press **(F1)** to confirm the save request.
The LCD displays Command Complete.

Press the double up arrow key to return to the Top-Level menu.

Paradyne Comsphere 3910 Front Panel Settings

Table C-1 shows the front panel settings for the Paradyne Comsphere 3910 modems.

Table C-1. Paradyne Comsphere 3910 Modem Settings

(Bold Settings are Changes from Factory Settings)		
DTE_Interface	Setting	Notes
Async/Sync Mode	Async	
Async DTE Rate	19200 or 9600	AT command s41=20 AT command s41=3
Asyn #Data Bits	8	
Asyn Parity Bit	None	
Asyn #Stop Bits	1	
DTR Action	Stndrd_RS232	AT command &d2
DSR Control	WinkWhenDisc	AT command &s2
RTS Action	Ignore	
CTS Control	Forced_On	
RTS/CTS Delay	0 msec	
LSD Control	WinkWhenDisc	AT command &c2
TX Clock Source	Internal	
CT111_Rate Cntl	Disable	
DTE_Rate=VF	Disable	

DTE_Dialer	Setting	Notes
DTE Dialer Type	AT	
AT Escape Char	128 ASCII	AT command s2=128
Escape GuardTim	1 sec	
BreakForceEscap	Disable	
CommandCharEcho	Enable	
CarriageRtnChar	013 ASCII	
Backspace Char	008 ASCII	
Linefeed Char	010 ASCII	

DTE_Dialer	Setting	Notes
Result Codes	Enable	
ExtendResltCode	Enable	
ResultCodeForm	Words	
AT Cmnd Mode	Normal	

Line_Dialer	Setting	Notes
AutoAnswerRing#	1	AT command s0=1
Dialer Type	Tone	
DialTone Detect	Enable	
BusyTone Detect	Enable	
","Pause Time	2sec	
NoAnswer Timeout	45sec	
Fast Disconnect	Disable	
Long Space Disc	Disable	AT command y0
No Carrier Disc	2sec	
No Data Disc	Disable	
MakeBusyViaDTR	Disable	

Dial_Line	Setting	Notes
Modulation	V32bis/terbo	
Dial Line Rate	19200(V32t) or 9600(V32b)	AT command s41=20 AT command s41=3
Automode	Disable	AT command s76=1
Autorate	Disable	AT command s78=1
Dial TX Level	Permissv(-9)	
V22b Guard Tone	Disable	
Train Time	Long	
Asymmetric Rate	Enable	
Fall Fwd Delay	Disable	

V42/MNP/Buffer	Setting	Notes
Err Cntrl Mode	BufferMode	AT command \n0
EC Negotiat Bfr	Disable	
Flw Cntl of DTE	CTS_to_DTE	AT command \q3
Flw Cntl of Mdm	RTS to Mdm	
XON/XOFF Psthru	Disable	
Mdm/Mdm FlowCtl	Disable	
Break Buffr Ctl	Keep_Data	
Send Break Cntl	Data_First	
Tx Buff Disc Delay	10sec	
Rx Buff Disc Delay	Disable	
Max Frame Size	256	
Cellular Enhance	Disable	

Test	Setting	Notes
DTE RL (CT140)	Disable	
DTE LL (CT141)	Disable	
Test Timeout	Disable	
Rcv Remote Loop	Enable	
V54 Address	Disable	

Misc	Setting	Notes
StrapsWhenDisc	No_Change	
Speaker Control	OnUntilCarr	Some locations may prefer Off AT command m0
Speaker Volume	Medium	
Access frm Remt	Enable	
RemAccssPasswrđ	00000000	
Dir#1_Callback	Disable	
CellurRJ11 Adpt	Disable	

Security	Setting	Notes
NMS_Reporting	00	
Answer_Secur	No_Answ_Sec	
Originate_Secur	No_Orig_Sec	

Paradyne Comsphere 3810/3820 Front Panel Settings

Table C-2 shows the front panel settings for the Paradyne Comsphere 3810 and 3820 modems.

Table C-2. Paradyne Comsphere 3810/3820 Modem Settings

(**Bold** Settings are Changes from Factory Settings)

DTE_Interface	Setting	Notes
Async/Sync Mode	Async	
Async DTE Rate	19200 or 9600	AT command s41=20 AT command s41=3
Asyn #Data Bits	8	
Asyn Parity Bit	None	
Asyn #Stop Bits	1	
DTR Action	Stndrd_RS232	AT command &d2
DSR Control	WinkWhenDisc	AT command &s2
RTS Action	Ignore	
CTS Control	Forced_On	
RTS/CTS Delay	0 msec	
LSD Control	WinkWhenDisc	AT command &c2
CT111_Rate Cntl	Disable	
DTE_Rate=VF	Disable	

DTE_Dialer	Setting	Notes
DTE Dialer Type	AT	
AT Escape Char	128 ASCII	AT command s2=128
Escape GuardTim	1 sec	
BreakForceEscap	Disable	
CommandCharEcho	Enable	
CarriageRtnChar	013 ASCII	
Backspace Char	008 ASCII	
Linefeed Char	010 ASCII	
Result Codes	Enable	

DTE_Dialer	Setting	Notes
ExtendResltCode	Enable	
ResultCodeForm	Words	
AT Cmnd Mode	Normal	

Line_Dialer	Setting	Notes
AutoAnswerRing#	1	AT command s0=1 (Some countries require this to be set to another value. Check particular country modem regulations.)
Dialer Type	Tone	
DialTone Detect	Enable	
BusyTone Detect	Enable	
","Pause Time	2sec	
NoAnswer Timeout	45sec	
Fast Disconnect	Disable	
Line Crnt Disc	Enab(>8msec)	
Long Space Disc	Disable	AT command y=0
No Carrier Disc	2sec	
No Data Disc	Disable	
MakeBusyViaDTR	Disable	
MI/MIC Dialing	Disable	

Dial_Line	Setting	Notes
Dial Line Rate	19200(V32t) 9600(V32b)	AT command s41=20 AT command s41=3
Automode	Disable	AT command s76=1
Autorate	Disable	AT command s78=1
Dial TX Level	Permissv(-9)	
V22b Guard Tone	Disable	
V32bis Train	Long	
Fall Fwd Delay	Disable	

V42/MNP/Buffer	Setting	Notes
Err Cntrl Mode	BufferMode	AT command \n0
Flw Cntl of DTE	CTS_to_DTE	AT command \q3
Flw Cntl of Mdm	RTS to Mdm	AT command \q3
Mdm/Mdm FlowCtl	Disable	
Break Buffr Ctl	Keep_Data	
Send Break Cntl	Data_First	
TxBuff Disc Delay	10sec	
RxBuff Disc Delay	Disable	

Test	Setting	Notes
DTE RL (CT140)	Disable	
DTE LL (CT141)	Disable	
Test Timeout	Disable	
Rcv Remote Loop	Enable	
V54 Address	Disable	

Misc	Setting	Notes
StrapsWhenDisc	No_Change	
Speaker Control	OnUntilCarr	Some locations may prefer Off AT command m0
Speaker Volume	Medium	
Access frm Remt	Enable	
RemAccssPasswrđ	00000000	
Dir#1_Callback	Disable	
NetMngmtAddress	001	
NMS_Call_Msgs	CallCnct&Prg	
NMS DTR Alarm	Disable	
CellurRJ11 Adpt	Disable	

Security	Setting	Notes
NMS_Reporting	03	
Answer_Secur	No_Answ_Sec	
Originate_Secur	No_Orig_Sec	

Abbreviations

A

AAR

automatic alternate routing

AC

alternating current

ACA

automatic circuit assurance

ACD

automatic call distribution

ADAP

administration and data acquisition package

ADU

asynchronous data unit

ALT

assemble load and test

AMIS

Audio Messaging Interchange Specification

API

application programming interface

ARS

automatic route selection

ASCII

American Standard Code for Information Exchange

AUDIX

Audio Information Exchange

AWG

American wire gauge

B

BCS

Business Communications Systems

BIOS

basic input/output system

bit

binary digit

bps

bits per second

BRI

basic rate interface

BSC

binary synchronous communications

BTU

British thermal unit

C

CAS

call accounting system

CCA

call classification analysis

CDH

call data handler process

CDR

call detail recording

CED

called tone

CELP

code excited linear prediction

CICS

customer information control system

CMS

call management system

CNG

calling tone

CO

central office

COIN

central office implemented network

COM1

serial communications port 1

COM2

serial communications port 2

COR

class of restriction

COS

class of service

Abbreviations

CPU
central processing unit

CSI
called subscriber information

CTS
clear to send

D

DAC
dial access code

DBP
database processor

DC
direct current

DCE
data communications equipment

DCIU
data communications interface unit

DCP
digital communications protocol

DCS
distributed communications system

DID
direct inward dialing

DIP
data interface process

DMA
direct memory access

DNIS
dialed number identification service

DSP
digital signal processor

DSR
data set ready

DSU
data service unit

DTE
data terminal equipment

DTMF
dual tone multifrequency

DTR
data terminal ready

E

EIA
Electronic Industries Association

ESD
electrostatic discharge

ESS
electronic switching system

F

F key
function key

FIFO
first-in first-out

FNPA
foreign numbering plan area

FOOS
facility out of service

FRL
facilities restriction level

FX
foreign exchange

G

GOS
grade of service

H

Hz
hertz

I

I/O

input/output

IDI

isolating data interface

IMAPI

INTUITY messaging application programming interface

INADS

initialization and administration system

IRQ

interrupt request

ISDN

integrated services digital network

IVC6

integrated voice CELP card (6 channels)

K

Kbps

kilobits per second

Kbyte

kilobyte (1024 bytes)

kHz

kilohertz

L

LAN

local area network

LCD

liquid crystal display

LED

light-emitting diode

LIFO

last-in first-out

LWC

leave word calling

M

MAP

multi-application platform

MANOOS

manually out of service

Mbyte

megabyte (one million bytes)

MHz

megahertz

MMISC

Multimedia Messaging Implementation and Sales Center

modem

modulator/demodulator

MPDM

modular processor data module

ms

millisecond

MT

maintenance (INTUITY software component)

MTBF

mean time between failures

MWI

message-waiting indicator

MWL

message-waiting lamp (a type of MWI)

N

NPA

numbering plan area

NW

INTUITY AUDIX Digital Networking

Abbreviations

O

OA&M

operations, administration, and maintenance

OR&M

NEED DEFINITION

OS

operating system

OSI

open systems interconnection

P

PBX

private branch exchange

PC

power converter or personal computer

PDM

processor data module

PEC

price element code

PI

processor interface

PIB

processor interface board

POST

power-on self test

R

RAM

random-access memory

REN

ringer equivalence number

ROM

read-only memory

RTS

request to send

RTU

right to use

RUK

reusable upgrade kit

S

SAT

system access terminal

SCA

switch communications adapter

SCSI

small computer systems interface

SID

switch integration device

SIMM

single in-line memory module

SMDR

station message detail recording

SMSI

simplified message service interface

SW

switch integration (INTUITY software component)

T

TAC

trunk access code

TCP/IP

Transmission Control Protocol/Internet Program

TDD

telecommunications device for the deaf

TDM

time division multiplex

T/R

tip/ring

TRIP

tip/ring input process

Abbreviations

TSC

Technical Services Center

U

UCD

uniform call distribution

UCL

unrestricted call list

UPS

uninterruptable power supply

V

VM

INTUITY AUDIX Voice Messaging

VNI

virtual nodepoint identifier

VP

voice platform (INTUITY software component)

VROP

voice response output process

W

WAN

wide area network

WATS

wide area telephone service

WCR

world class routing

Glossary

5ESS Switch

A central office switch manufactured by Lucent that can be integrated with the Lucent INTUITY system.

A

accessed message

A message that was received and scanned (either the entire message or just the header).

ACD

See *automatic call distribution*.

activity menu

The list of options spoken to users when they first access a messaging system. Selecting an activity is the starting point for all user operations.

ADAP

See *administration and data acquisition package*.

address

INTUITY AUDIX user identification, containing the user's extension and machine, that indicates where the system needs to deliver a message. An address may include several users or mailing lists. Name or number addressing can be selected with the * A (Address) command.

adjunct

A separate system closely integrated with a switch, such as an Lucent INTUITY system or a call management system (CMS).

administration

The process of setting up a system (such as a switch or a messaging system) to function as desired. Options and defaults are normally set up (translated) by the system administrator or service personnel.

administration and data acquisition package (ADAP)

A software package that allows the system administrator to transfer system user, maintenance, or traffic data from an INTUITY AUDIX system to a personal computer (PC).

ADU

See *asynchronous data unit*.

alarm log

A list of alarms that represent all of the active or resolved problems on a Lucent INTUITY system. The alarm log is stored in a software file on disk and can be accessed either locally or remotely on a terminal connected to the system.

alarms

Hardware, software, or environmental problems that may affect system operation. Alarms are classified as *major*, *minor*, or *warning*.

alphanumeric

Consisting of alphabetic and numeric symbols or punctuation marks.

ALT

See *assemble, load, and test*.

American wire gauge (AWG)

A standard measuring gauge for nonferrous conductors.

AMIS

See *Audio Messaging Interchange Specification*.

AMIS prefix

A number added to the destination number to indicate that it is an AMIS analog networking number.

ampere (amp)

The unit of measurement of electric current. One volt of potential across one ohm causes a current flow of one amp.

analog networking

A method of transferring a message from one messaging system to another whereby the message is played back (voiced) during the transfer.

analog signal

In teleprocessing usage, a communications path that usually refers to a voice-grade telephone line.

announcement

A placeholder within the Lucent INTUITY system for playing fragments. Each event that may occur within AUDIX has one or more announcement numbers permanently assigned to it. Fragment numbers are then assigned to the announcement numbers.

announcement fragment

A numbered piece of spoken information that makes up a system message or prompt.

antistatic

A treatment for material to prevent the build-up of static electricity.

API

See *application programming interface*.

application

A computer software program.

application programming interface (API)

A set of formalized software calls and routines that an application program can reference to access underlying network services.

assemble, load, and test (ALT)

The Lucent factory process that preloads software, installs hardware, and tests the system prior to shipping.

asynchronous communication

A method of data transmission in which bits or characters are sent at irregular intervals and spaced by start and stop bits rather than time. See also *synchronous communication*.

asynchronous data unit (ADU)

An electronic communications device that can extend data transmission over asynchronous lines more than 50 feet in length. Recommended ADUs for use with the Lucent INTUITY system include Z3A1 or Z3A4.

asynchronous transmission

A form of serial communications where each transmitted character is bracketed with a start bit and one or two stop bits. The Lucent INTUITY system provides asynchronous EIA-232 capabilities for INTUITY AUDIX Digital Networking, if required.

attendant console

A special-purpose telephone with numerous lines and features usually located at the front desk of a business or other organization. The front desk attendant uses this telephone to answer and transfer calls.

Audio Messaging Interchange Specification (AMIS)

An analog networking protocol that allows users to exchange messages with any messaging system that also has AMIS Analog Networking capabilities. Messages can be exchanged with users on Lucent INTUITY systems as well as with users on remote messaging systems made by vendors other than Lucent.

Audio Information Exchange (AUDIX)

A complete messaging system accessed and operated by touch tone telephones and integrated with a switch.

audit

A software program that resolves filesystem incompatibilities and updates restored filesystems to a workable level of service. Audits are done automatically on a periodic basis, or can be performed on demand.

AUDIX

See *Audio Information Exchange*.

autodelete

An INTUITY AUDIX feature that allows users to designate that faxes be automatically deleted from their mailboxes after they are printed.

automated attendant

A Lucent INTUITY system feature that allows users to set up a main extension number with a menu of options that routes callers to an appropriate department at the touch of a button.

automatic call distribution (ACD)

The System 85, Generic 2, or Generic 3 call-distribution group of analog ports that connects Lucent INTUITY users and users to the system. See also *call-distribution group*.

automatic message scan

An INTUITY AUDIX feature that allows users to scan all message headers and messages at the touch of two buttons. With Lucent INTUITY Fax Messaging, this feature allows all new faxes to be bundled and transmitted over a single fax call delivery call. Also called *autoscan*.

autoprint

An INTUITY AUDIX feature that allows users to designate that faxes be automatically sent to a specified print destination.

autoscan

See *automatic message scan*.

AWG

See *American wire gauge*.

B

background testing

Testing that runs continuously when the system is not busy doing other tasks.

backplane

A centrally located device within a computer to which individual circuit cards are plugged for communication across an internal bus.

backup

A duplicate copy of files and directories saved on a removable medium such as floppy diskette or tape. The back-up filesystem can be copied back (restored) if the active version is damaged (corrupted) or lost.

basic input/output system (BIOS)

A system that contains the buffers for sending information from a program to the actual hardware device for which the information is intended.

baud

A unit of measurement that describes the speed of transferred information.

baud rate

Transmission signaling speed.

basic call transfer

The switch-hook flash method used to send the INTUITY AUDIX transfer command over analog voice ports.

basic rate access

See *basic rate interface*.

basic rate interface (BRI)

International standard protocol for connecting a station terminal to an integrated systems digital network (ISDN) switch. ISDN BRI supports two 64-Kbps information-bearer channels (B1 and B2), and one 16-Kbps call status and control (D) channel (a 2B + D format). Also called *basic rate access*.

binary digit (bit)

Two-number notation that uses the digits 0 and 1. Low-order bits are on the right (for example, 0001=1, 0010=2, and so forth). Four bits make a nybble; eight bits make a byte.

binary synchronous communications (BSC)

A character-oriented synchronous link protocol.

BIOS

See *basic input/output system*.

bit

See *binary digit*.

bits per second

The number of binary units of information (1s or 0s) that can be transmitted per second. *Mbps* refers to a million bits per second; *Kbps* refers to a thousand bits per second.

body

The part of a Lucent INTUITY voice mail that contains the actual spoken message. For a leave word calling (LWC) message, it is a standard system announcement.

boot

The operation to start a computer system by loading programs from disk to main memory (part of system initialization). Booting is typically accomplished by physically turning on or restarting the system. Also called *reboot*.

boot filesystem

The filesystem from which the system loads its initial programs.

bps

See *bits per second*.

BRI

See *basic rate interface*.

broadcast messaging

An INTUITY AUDIX feature that enables the system administrator and other designated users to send a message to all users automatically.

BSC

See *binary synchronous communications*.

buffer

A temporary storage area used to equalize or balance different operating speeds. A buffer can be used between a slow input device, such as a terminal keyboard, and the main computer, which operates at a very high speed.

bulletin board

An INTUITY AUDIX feature that allows a message to be played to callers who dial the bulletin board extension. Callers cannot leave a message since it is a listen-only service. Also called *information service*.

bundling

Combining several calls and handling them as a single call. See also *automatic message scan*.

bus

An electrical connection/cable allowing two or more wires, lines, or peripherals to be connected together.

busy-out/release

To remove a Lucent INTUITY device from service (make it appear busy or in use), and later restore it to service (release it). The Lucent INTUITY switch data link, voice ports, or networking ports may be busied out if they appear faulty or when maintenance tests are run.

byte

A unit of storage in the computer. On many systems, a byte is 8 bits (binary digits), the equivalent of one character of text.

C

call accounting system (CAS)

A software device that monitors and records information about a calling system.

call-answer

An INTUITY AUDIX feature that allows the system to answer a call and record a message when the user is unavailable. Callers can be redirected to the system through the call coverage or call forwarding switch features. INTUITY AUDIX users can record a personal greeting for these callers.

call-answer language choice

The capability of user mailboxes to accept messages in different languages. For the INTUITY AUDIX application, this capability exists when the multilingual feature is turned on.

callback number

In AMIS analog networking, the telephone number transmitted to the recipient machine to be used in returning messages that cannot be delivered.

call coverage

A switch feature that defines a preselected path for calls to follow if the first (or second) coverage points are not answered. The Lucent INTUITY system may be placed at the end of a coverage path to handle redirected calls through call coverage, send all calls, go to cover, etc.

call delivery

See *message delivery*.

call-distribution group

The set of analog port cards on the switch that connects switch users to the Lucent INTUITY system by distributing new calls to idle ports. This group (or split) is called automatic call distribution (ACD) on System 85, Generic 2, and Generic 3 and uniform call distribution (UCD) on System 75, Generic 1, and Generic 3. See also *automatic call distribution* and *uniform call distribution*.

call management system (CMS)

An inbound call distribution and management reporting package.

called tone (CED tone)

The distinctive tone generated by a fax endpoint when it answers a call (a constant 2100-Hz tone).

called subscriber information (CSI)

The identifier for the answering fax endpoint. This identifier is sent in the T.30 protocol and is generally the telephone number of the fax endpoint.

calling tone (CNG tone)

The distinctive tone generated by a fax endpoint when placing a call (a constant 1100-Hz tone that is on for 1/2 second, off for 3 seconds).

call vectoring

A System 85 R2V4, Generic 2, and Generic 3 feature that uses a vector (switch program) to allow a switch administrator to customize the behavior of calls sent to an automatic call distribution (ACD) group.

card cage

An area within the Lucent INTUITY hardware platform that contains and secures all of the standard and optional circuit cards used in the system.

cartridge tape drive

A high-capacity data storage/retrieval device that can be used to transfer large amounts of information onto high-density magnetic cartridge tape based on a predetermined format. This tape is to be removed from the system and stored as a backup.

CAS

See *call accounting system*.

CED tone

See *called tone*.

CELP

See *code excited linear prediction*.

central office (CO)

An office or location in which large telecommunication equipment such as telephone switches and network access facilities are maintained. In a CO, private customer lines are terminated and connected to the public network through common carriers.

central processing unit (CPU)

The component of the computer that manipulates data and processes instructions coming from software.

channel

A telecommunications transmission path for voice and/or data.

channel capacity

A measure of the maximum bit rate through a channel.

CICS

See *customer information control system*.

class of service (COS)

The standard set of INTUITY AUDIX features given to users when they are first administered (set up with a voice mailbox).

clear to send (CTS)

Located on Pin 5 of the 25-conductor RS-232 interface, CTS is used in the transfer of data between the computer and a serial device.

client

A computer that sends, receives and uses data, but that also shares a larger resource whose function is to do most data storage and processing. For Lucent INTUITY Message Manager, the user's PC running Message Manager is the client. See also *server*.

CMS

See *call management system*.

CNG tone

See *calling tone*.

CO

See *central office*.

code excited linear prediction (CELP)

An analog-to-digital voice coding scheme.

collocated

A Lucent INTUITY system installed in the same physical location as the host switch. See also *local installation*.

collocated adjunct

Two or more adjuncts that are serving the same switch (that is, each has voice port connections to the switch) or that are serving different switches but can be networked through a direct RS-232 connection due to their proximity.

comcode

A numbering system for telecommunications equipment used by Lucent. Each comcode is a nine-digit number that represents a specific piece of hardware, software, or documentation.

command

An instruction or request given by the user to the software to perform a particular function. An entire command consists of the command name and options. Also, one- or two-key touch tones that control a mailbox activity or function.

community

A group of telephone users administered with special send and receive messaging capabilities. A community is typically comprised of people who need full access to each other by telephone on a frequent basis. See also *default community*.

compound message

A message that combines a voice message and a fax message into one unit, which INTUITY AUDIX then handles as a single message.

configuration

The particular combination of hardware and software components selected for a system, including external connections, internal options, and peripheral equipment.

controller circuit card

A circuit card used on a computer system that controls its basic functionality and makes the system operational. These cards are used to control magnetic peripherals, video monitors, and basic system communications.

COS

See *class of service*.

coverage path

The sequence of alternate destinations to which a call to a user on an Lucent INTUITY system is automatically sent when it is not answered by the user. This sequence is set up on the switch, normally with the Lucent INTUITY system as the last or only destination.

CPU

See *central processing unit*.

cross connect

Distribution-system equipment used to terminate and administer communication circuits.

cross connection

The connection of one wire to another, usually by anchoring each wire to a connecting block and then placing a third wire between them so that an electrical connection is made.

CSI

See *called subscriber information*.

CTS

See *clear to send*.

D

DAC

See *dial access code*.

database

A structured set of files, records, or tables. Also, a collection of filesystems and files in disk memory that store the voice and nonvoice (program data) necessary for Lucent INTUITY system operation.

data communications equipment (DCE)

Standard type of data interface normally used to connect to data terminal equipment (DTE) devices. DCE devices include the data service unit (DSU), the isolating data interface (IDI), and the modular processor data module (MPDM).

data communications interface unit (DCIU)

A switch device that allows nonvoice (data) communication between a Lucent INTUITY system and a Lucent switch. The DCIU is a high-speed synchronous data link that communicates with the common control switch processor over a direct memory access (DMA) channel that reads data directly from FP memory.

data link

A term used to describe the communications link used for data transmission from a source to a destination, for example, a telephone line for data transmission.

data service unit (DSU)

A device used to access digital data channels. DATAPHONE II 2500 DSUs are synchronous data communications equipment (DCE) devices used for extended-local Lucent INTUITY system connections. The 2600 or 2700 series may also be used; these support diagnostic testing and the DATAPHONE II Service network system.

data set

Another term for a modem, although a data set usually includes the telephone. See also *modem*.

data terminal equipment (DTE)

Standard type of data interface normally used for the endpoints in a connection. Normally the Lucent INTUITY system, most terminals, and the switch data link are DTE devices.

data terminal ready (DTR)

A control signal sent from the data terminal equipment (DTE) to the data communications equipment (DCE) that indicates the DTE is on and ready to communicate.

DBP

See *data base processor*.

DCE

See *data communications equipment*.

DCIU

See *data communications interface unit*.

DCP

See *digital communications protocol*.

DCS

See *distributed communications system*.

debug

See *troubleshoot*.

dedicated line

A communications path that does not go through a switch. A dedicated (hard-wired) path can be formed with directly connected cables. MPDMs, DSUs, or other devices can also be used to extend the distance that signals can travel directly through the building wiring.

default

A value that is automatically supplied by the system if no other value is specified.

default community

A group of telephone users administered with restrictions to prevent them from sending messages to or receiving messages from other communities. If a system is administered to use communities, the default community is comprised of all the AUDIX users defined on that system.

default print number

The user-administered extension to which autoprinted faxes are redirected upon their receipt into the user's mailbox. This default print destination is also provided as a print option when the user is manually retrieving and printing faxes from the mailbox.

delivered message

A message that has been successfully transmitted to a recipient's incoming mailbox.

demand testing

Testing performed on request (usually by service personnel).

diagnostic testing

A program run for testing and determining faults in the system.

dial-ahead/dial-through

The act of interrupting or preceding INTUITY AUDIX system announcements by typing (buffering) touch tone commands in the order the system would normally prompt for them.

dial string

A series of numbers used to initiate a call to a remote AMIS machine. A dial string tells the switch what type of call is coming (local or long distance) and gives the switch time to obtain an outgoing port, if applicable

dialed number identification service (*DNIS_SVC)

An available channel service assignment on the Lucent INTUITY system. Assigning this service to a channel permits the Lucent INTUITY system to interpret information from the switch and operate the appropriate application for the incoming telephone call.

DID

See *direct inward dialing*.

digital

Discrete data or signals such as 0 and 1, as opposed to analog continuous signals.

digital communications protocol (DCP)

A 64-Kbps digital data transmission code with a 160-Kbps bipolar bit stream divided into two information (I) channels and one signaling (S) channel.

digital networking

A method of transferring messages between messaging systems in a digital format. See also *Intuity AUDIX Digital Networking*.

digital signal processor

A specialized digital microprocessor that performs calculations on digitized signals that were originally analog and then sends the results on.

DIP switch

See *dual in-line package switch*.

direct inward dialing

The ability for an outside caller to call an internal extension without having to pass through an operator or attendant.

direct memory access (DMA)

A quick method of moving data from a storage device directly to RAM, which speeds processing.

directory

1. An INTUITY AUDIX feature that allows you to hear a user's name and extension after pressing * at the activity menu.
2. A group of related files accessed by a common name in software.

display terminal

A data terminal with a screen and keyboard used for displaying Lucent INTUITY screens and performing maintenance or administration activities.

distributed communications system (DCS)

A network of two or more switches that uses logical and physical data links to provide full or partial feature transparency. Voice links are made using tie trunks.

distribution list

See *mailing list*.

DMA

See *direct memory access*.

DNIS

See *dialed number identification service*.

domain

An area where data processing resources are under common control. The AUDIX system is one domain and an e-mail system is another domain.

DSP

See *digital signal processor*.

DSU

See *data service unit*.

DTE

See *data terminal equipment*.

DTMF

See *dual tone multifrequency*.

dual in-line package (DIP) switch

A small switch, usually attached to a printed circuit card, in which there are only two settings: on or off (or 0 or 1). DIP switches are used to configure the card in a semipermanent way.

dual language greetings

The capability of INTUITY AUDIX users to create personal greetings in two different languages—one in a primary language and one in a secondary language. This capability exists when the multilingual feature is turned on and the prompts for user mailboxes can be in either of the two languages.

dual tone multifrequency (DTMF)

A way of signaling consisting of a pushbutton or touch tone dial that sends out a sound consisting of two discrete tones that can be picked up and interpreted by telephone switches.

E

EIA interface

A set of standards developed by the Electrical Industries Association (EIA) that specifies various electrical and mechanical characteristics for interfaces between electronic devices such as computers, terminals, and modems. Also known as *RS-232*.

electrostatic discharge (ESD)

Discharge of a static charge on a surface or body through a conductive path to ground. ESD can be damaging to integrated circuits.

electronic mail

See *e-mail*.

e-mail

The transfer of a wide variety of message types across a computer network (LAN or WAN). E-mail messages may be text messages containing only ASCII or may be complex multimedia messages containing embedded voice messages, software files, and images.

enabled/disabled

The state of a hardware device that indicates whether it is available for use by the Lucent INTUITY system. Devices must be equipped before they can be enabled (made active). See also *equipped/unequipped*.

endpoint

See *fax endpoint*.

enhanced call transfer

An INTUITY AUDIX feature that allows compatible switches to transmit messages digitally over the BX.25 (data) link. This feature is used for quick call transfers and requires a fully integrated digital switch. Callers can only transfer to other extensions in the switch dial plan.

enhanced serial data interface

A software- and hardware-controlled method used to store data on magnetic peripherals.

equipped/unequipped

The state of a networking channel that indicates whether Lucent INTUITY software has recognized it. Devices must be equipped before they can be enabled (made active). See also *enabled/disabled*.

error message

A message on the screen indicating that something is wrong and possibly suggesting how to correct it.

errors

Problems detected by the system during operation and recorded in the maintenance log. Errors can produce an alarm if they exceed a threshold.

escape from reply

The ability to quickly return to getting messages for a user who encounters a problem trying to respond to a message. To escape, the user presses **#**.

escape to attendant

An INTUITY AUDIX feature that allows users with the call answer feature to have a personal attendant or operator administered to pick up their unanswered calls. A system-wide extension could also be used to send callers to a live agent.

ESD

See *electrostatic discharge*.

event

An informational messages about the system's activities. For example, an event is logged when the system is rebooted. Events may or may not be related to errors and alarms.

F

facility out-of-service

State of operation during which the current channel is not receiving a dial tone and is not functioning.

facsimile

1. A digitized version of written, typed, or drawn material transmitted over telephone lines and printed out elsewhere. 2. Computer-generated text or graphics transmitted over computer networks. A computer-generated fax is typically printed to a fax machine but can remain stored electronically.

fax

See *facsimile*.

fax addressing prefix

Uniquely identifies a particular fax endpoint to the Lucent INTUITY system. Used by the system as a "template" to differentiate all call-delivery machines on the network from each other.

fax endpoint

Any device capable of receiving fax calls. Fax endpoints include fax machines, individual PC fax modems, fax ports on LAN fax servers, and ports on fax-enabled messaging systems.

fax print destination prefix

A dial string that the Lucent INTUITY system adds to the fax telephone number the user enters to print a fax. The system takes the full number (fax print destination prefix + fax telephone extension) and hunts through the machine translation numbers until it finds the specific fax endpoint.

field

An area on a screen, menu, or report where information can be typed or displayed.

FIFO

See *first-in/first-out*.

file

A collection of data treated as a basic unit of storage.

filename

Alphanumeric characters used to identify a particular file.

file redundancy

See *mirroring*.

file system

A collection of related files (programs or data) stored on disk that are required to initialize a Lucent INTUITY system.

first-in/first-out (FIFO)

A method of processing telephone calls or data in which the first call (or data) to be received is the first call (or data) to be processed.

F key

See *function key*.

FOOS

See *facility out-of-service*.

format

To set up a disk, floppy diskette, or tape with a predetermined arrangement of characters so that the system can read the information on it.

function

Individual steps or procedures within a mailbox activity.

function key (F key)

A key on a computer keyboard programmed to perform a defined function when pressed. The user interface for the Lucent INTUITY system defines keys F1 through F8.

G

Generic 1, 2, or 3

Lucent switch system software releases, designed for serving large communities of System 75 and System 85 users.

generic tape

A copy of the standard software and stand-alone tape utilities that is shipped with a new Lucent INTUITY system.

GOS

See *grade of service*.

grade of service (GOS)

A parameter that describes the delays in accessing a port on the Lucent INTUITY system. For example, if the GOS is P05, 95% of the callers hear the system answer and 5% hear ringing until a port becomes available to answer the call.

guaranteed fax

A feature of Lucent INTUITY FAX Messaging that temporarily stores faxes sent to a fax machine. In cases where the fax machine is busy or does not answer a call, the call is sent to an INTUITY AUDIX mailbox.

guest password

A feature that allows callers who are not INTUITY AUDIX users to leave messages on the system by dialing a user's extension and entering a system-wide guest password.

H

hard disk drive

A high-capacity data storage/retrieval device that is located inside a computer. A hard disk drive stores data on nonremovable high-density magnetic media based on a predetermined format for retrieval by the system at a later date.

hardware

The physical components of a computer system. The central processing unit, disks, tape, and floppy drives are all hardware.

header

Information that the system creates to identify a message. A message header includes the originator or recipient, type of message, creation time, and delivery time.

help

A command run by pressing **HELP** or **CTRL ?** on a Lucent INTUITY display terminal to show the options available at your current screen position. In the INTUITY AUDIX system, press *** H** on the telephone keypad to get a list of options. See also *on-line help*.

hertz (Hz)

A measurement of frequency in cycles per second. A hertz is 1 cycle per second.

host switch

The switch directly connected to the Lucent INTUITY system over the data link. Also, the physical link connecting a Lucent INTUITY system to a distributed communications system (DCS) network.

hunt group

A group of analog ports on a switch usually administered to search for available ports in a circular pattern.

Hz

See *hertz*.

I

I/O

Input/output.

IDI

See *isolating data interface*.

IMAPI

See *INTUITY messaging application programming interface*.

INADS

See *initialization and administration system*.

information service

See *bulletin board*.

initialization

The process of bringing a system to a predetermined operational state. The start-up procedure tests hardware; loads the boot filesystem programs; locates, mounts, and opens other required filesystems; and starts normal service.

initialization and administration system (INADS)

A computer-aided maintenance system used by remote technicians to track alarms.

initialize

To start up the system for the first time.

input

A signal fed into a circuit or channel.

integrated services digital network (ISDN)

A network that provides end-to-end digital connectivity to support a wide range of voice and data services.

integrated voice processing CELP (IVC6) card

A computer circuit card that supports both fax processing and voice processing capabilities. It provides two analog ports to support six analog channels. All telephone calls to and from the Lucent INTUITY system are processed through the IVC6 card.

interface

The device or software that forms the boundary between two devices or parts of a system, allowing them to work together. See also *user interface*.

internal e-mail

Software on a PC that provides messaging capability between users on the same AUDIX system, or to administered remote AUDIX systems and users. Users can create, send, and receive a message that contains multiple media types; specifically, voice, fax, text, or file attachments (software files, such as a word processing or spreadsheet file).

interrupt request (IRQ)

Within a PC, a signal sent from a device to the CPU to temporarily suspend normal processing and transfer control to an interrupt handling routine.

INTUITY AUDIX Digital Networking

A Lucent INTUITY feature that allows customers to link together up to 500 remote Lucent INTUITY machines for a total of up to 500,000 remote users. See also *digital networking*.

INTUITY Message Manager

A Windows-based software product that allows INTUITY AUDIX users to receive, store, and send their voice/FAX messages from a PC. The software also enables users to create and send multimedia messages that include voice, fax, file attachments, and text.

INTUITY messaging application programming interface (IMAPI)

A software function-call interface that allows INTUITY AUDIX to interact with Lucent INTUITY Message Manager.

I/O address

input/output address.

IRQ

See *interrupt request*.

ISDN

See *integrated services digital network*.

isolating data interface (IDI)

A synchronous, full duplex data device used for cable connections between a Lucent INTUITY GPSC-AT/E card and the switch data communications interface unit (DCIU).

IVC6

See *integrated voice processing CELP (IVC6) card*.

J

jumper

Pairs or sets of small prongs or pins on circuit cards and mother boards the placement of which determines the particular operation the computer selects. When two pins are covered, an electrical circuit is completed. When the jumper is uncovered, the connection is not made. The computer interprets these electrical connections as configuration information.

K

Kbps

Kilobits per second; one thousand bits per second.

Kbyte

Kilobytes per second; 1024 thousand bytes per second.

L

label

The name assigned to a disk device (either a removable tape cartridge or permanent drive) through software. Cartridge labels may have a generic name (such as 3:3) to show the software release, or a descriptive name if for back-up copies (such as back01). Disk drive labels usually indicate the disk position (such as disk00 or disk02).

LAN

See *local area network*.

last-in/first-out (LIFO)

A method of processing telephone calls or data in which the last call (or data) received is the first call (or data) to be processed.

LCD

See *liquid crystal display*.

leave word calling (LWC)

A switch feature that allows the calling party to leave a standard (nonvoice) message for the called party using a feature button or dial access code.

LED

See *light emitting diode*.

LIFO

See *last-in/first-out*.

light emitting diode (LED)

A light on the hardware platform that shows the status of operations.

liquid crystal display (LCD)

The 10-character alphanumeric display that shows the status of the system, including alarms.

load

The process of reading software from external storage (such as disk) and placing a copy in system memory.

local area network (LAN)

A network of PCs that communicate with each other and that normally share the resources of one or more servers. Operation of Lucent INTUITY Message Manager requires that the INTUITY AUDIX system and the users' PCs be on a LAN.

local AUDIX machine

The Lucent INTUITY system where a user's INTUITY AUDIX mailbox is located. All users on this home machine are called *local users*.

local installation

A switch, adjunct, or peripheral installed physically near the host switch or system. See also *collocated*.

local network

An INTUITY AUDIX Digital Network in which all Lucent INTUITY systems are connected to the same switch.

login

A unique code a user must enter to gain approved access to the Lucent INTUITY system. See also *password*.

login announcement

A feature enabling the system administrator and other designated users to create a mail message that is automatically played to all INTUITY AUDIX users every time they log in to the system.

Lotus Notes

Information management software for work groups that allows individuals to share and manipulate information over a local or wide area network

LWC

See *leave word calling*.

M

magnetic peripherals

Data storage devices that use magnetic media to store information. Such devices include hard disk drives, floppy disk drives, and cartridge tape drives.

mailbox

A portion of disk memory allotted to each Lucent INTUITY system user for creating and storing outgoing and incoming messages.

mailing list

A group of user addresses assigned a list ID# and public or private status. A mailing list may be used to simplify the sending of messages to several users.

maintenance

The process of identifying system errors and correcting them, or taking steps to prevent problems from occurring.

major alarm

An alarm detected by Lucent INTUITY software that affects at least one fourth of the INTUITY ports in service. Often a major alarm indicates that service is affected.

MANOOS

See *manually out-of-service*.

manually out-of-service

State of operation during which a unit has been intentionally taken out of service.

MAP

See *multi-application platform*.

mean time between failures

The average time a manufacturer estimates will elapse before a failure occurs in a component or system.

media type

The form a message takes. The media types supported by the Lucent INTUITY system are voice, text, file attachments, and fax.

megabyte

A unit of memory equal to 1,048,576 bytes (1024 x 1024). It is often rounded to 1 million.

memory

A device that stores logic states such that data can be accessed and retrieved. Memory may be temporary (such as system RAM) or permanent (such as disk).

menu

A list of options displayed on a computer terminal screen or spoken by a voice processing system. Users choose the option that reflects what action they want the system to take.

menu tree

The way in which nested automated attendants are set up.

message categories

Groups of messages in INTUITY AUDIX users' mailboxes. Categories include *new*, *unopened*, and *old* for the incoming mailbox and *delivered*, *accessed*, *undelivered*, *undeliverable* (not deliverable), and *file cabinet* for the outgoing mailbox.

message component

A media type included in a multimedia message. These types include voice, text, file attachments, and fax messages.

message delivery

An optional Lucent INTUITY feature that permits users to send messages to any touch tone telephone, as long as the telephone number is in the range of allowable numbers. This feature is an extension of the AMIS analog networking feature and is automatically available when the AMIS feature is activated.

Message Manager

See *INTUITY Message Manager*.

message-waiting indicator (MWI)

An indicator that alerts Lucent INTUITY users that they have received new mail messages. An MWI can be an LED or neon lamp, or an audio tone (stutter dial tone).

message waiting lamp (MWL)

See *message-waiting indicator*.

migration

An installation that moves data to the Lucent INTUITY system from another type of Lucent messaging system, for example, from AUDIX R1, DEFINITY AUDIX, or AUDIX Voice Power.

minor alarm

An alarm detected by maintenance software that affects less than one fourth of the Lucent INTUITY ports in service, but has exceeded error thresholds or may impact service.

mirroring

A Lucent INTUITY system feature that allows data from crucial filesystems to be continuously copied to back-up (mirror) filesystems while the system is running. If the system has some

problem where an original filesystem cannot be used, the backup filesystem is placed in service automatically.

mode code

A string of touch tones from a MERLIN LEGEND switch. A mode code may send the INTUITY AUDIX system information such as call type, calling party, called party, and on/off signals for message waiting indicators.

modem

A device that converts data from a form that is compatible with data processing equipment (digital) to a form compatible with transmission facilities (analog), and vice-versa.

modular

A term that describes equipment made of plug-in units that can be added together to make the system larger, improve its capabilities, or expand its size.

modular processor data module (MPDM)

A data device that converts RS-232C or RS-449 protocol signals to digital communications protocol (DCP) used by System 75/85, Generic1, and Generic 3 switches. MPDMs may connect the Lucent INTUITY system to a switch DCIU or SCI link or connect terminals to a switch port card.

MPDM

See *modular processor data module*.

MTBF

See *mean time between failures*.

multi-application platform (MAP)

The computer hardware platform used by the Lucent INTUITY system.

multilingual feature

A feature that allows announcement sets to be active simultaneously in more than one language on the system. Mailboxes can be administered so that users can hear prompts in the language of their choice.

MWI

See *message-waiting indicator*.

MWL

See *message waiting lamp*.

N

networking

See *INTUITY AUDIX Digital Networking*.

networking prefix

A set of digits that identifies a Lucent INTUITY machine.

night attendant

The automated attendant created on a MERLIN LEGEND switch that automatically becomes active during off-hours. The night attendant substitutes for one or more daytime attendants.

not deliverable message

A message that could not be delivered after a specified number of attempts. This usually means that the user's mailbox is full.

O

off-hook

See *switch hook*.

on-hook

See *switch hook*.

on-line help

A Lucent INTUITY system feature that provides information about user interface windows, screens, and menus by pressing a predetermined key. See also *help*.

open systems interconnection (OSI)

An internationally accepted framework of standards for communication between systems made by different vendors.

operating system (OS)

The set of software programs that runs the hardware and interprets software commands.

option

A choice selected from a menu, or an argument used in a command line to specify program output by modifying the execution of a command. When you do not specify any options, the command executes according to its default options.

OS

See *operating system*.

OSI

See *open systems interconnection*.

outcalling

A Lucent INTUITY system feature that allows the system to dial users' numbers to inform them they have new messages.

outgoing mailbox

A storage area on the Lucent INTUITY system where users can keep copies of messages for future reference or action.

P

parallel transmission

The transmission of several bits of data at the same time over different wires. Parallel transmission of data is usually faster than serial transmission.

password

1. A word or character string recognized automatically by the Lucent INTUITY system that allows a user access to his/her mailbox or a system administrator access to the system data base. 2. An alphanumeric string assigned to local and remote networked machines to identify the machines or the network. See also *login*.

password aging

An INTUITY AUDIX feature that allows administrators to set a length of time after which a user's AUDIX password or the administrator's system password expires. The user or administrator must then change the password.

PBX

See *private branch exchange*.

PC

See *power converter*.

PDM (processor data module)

See *modular processor data module (MPDM)*.

PEC

See *price element code*.

peripheral device

Equipment such as a printer or terminal that is external to the Lucent INTUITY cabinet but necessary for full operation and maintenance of the system. Also called a *peripheral*.

personal directory

An INTUITY AUDIX feature that allows each user to create a private list of customized names.

personal fax extension

See *secondary extension*.

pinouts

The signal description per pin number for a particular connector.

PMS

See *property management system*.

port

A connection or link between two devices that allows information to travel to a desired location. For example, a switch port connects to a Lucent INTUITY voice port to allow a caller to leave a message.

POST

See *power-on self test*.

power on self test (POST)

A set of diagnostics stored in ROM that tests components such as disk drives, keyboard, and memory each time the system is booted. If problems are identified, a message is sent to the screen.

priority call answer

An INTUITY AUDIX feature that allows users to designate a call answer message as a priority message. To make a message a priority message, the caller presses (2) after recording.

priority messaging

An INTUITY AUDIX feature that allows some users to send messages that are specially marked and preferentially presented to recipients. See also *priority outcalling*.

priority outcalling

An INTUITY AUDIX feature that works with the priority messaging feature by allowing the message recipient to elect to be notified by outcalling only when a priority message has been received. See also *priority messaging*.

private branch exchange (PBX)

An analog, digital, or electronic telephone switching system where data and voice transmissions are not confined to fixed communications paths, but are routed among available ports or channels. See also *switch*.

private mailing list

A list of addresses that only the Lucent INTUITY system user who owns it can access.

private messaging

A feature of INTUITY AUDIX that allows a user to send a message that cannot be forwarded by the recipient.

processor data module (PDM)

See *modular processor data module (MPDM)*.

processor interface (PI)

A System 75, Generic 1, Generic 3i, Generic 3s, and Generic 3vs switch data link. Also called *processor interface board (PIB)*.

programmed function key

See *function key*.

protocol

A set of conventions or rules governing the format and timing of message exchanges (signals) to control data movement and the detection and possible correction of errors.

public mailing list

A list of addresses that any INTUITY AUDIX user can use if that user knows the owner's list ID number and extension number. Only the owner can modify a public mailing list.

pulse-to-tone converter

A device connected to the switch that converts signals from a rotary pulses to touch tones. This device allows callers to use rotary telephones to access options in a Lucent INTUITY user's mailbox or in an automated attendant.

R

RAM

See *random access memory*.

random access memory (RAM)

The memory used in most computers to store the results of ongoing work and to provide space to store the operating system and applications that are actually running at any given moment.

read-only memory (ROM)

A form of computer memory that allows values to be stored only once; after the data is initially recorded, the computer can only read the contents. ROM is used to supply constant code elements such as bootstrap loaders, network addresses, and other more or less unvarying programs or instructions.

reboot

See *boot*.

remote access

Sending and receiving data to and from a computer or controlling a computer with terminals or PCs connected through communications (that is, telephone) links.

remote installation

A system, site, or piece of peripheral equipment that is installed in a different location from the host switch or system.

remote maintenance

The ability of Lucent personnel to interact with a remote computer through a telephone line or LAN connection to perform diagnostics and some system repairs. See also *remote service center*.

remote network

A network in which the systems are integrated with more than one switch.

remote service center

A Lucent or Lucent-certified organization that provides remote support to Lucent INTUITY customers. Depending upon the terms of the maintenance contract, your remote service center may be notified of all major and minor alarms and have the ability to remotely log in to your system and remedy problems. See also *remote maintenance*.

remote terminal

A terminal connected to a computer over a telephone line.

remote users

INTUITY AUDIX users whose mailboxes reside on a remote INTUITY AUDIX Digital Networking machine.

REN

See *ringer equivalence number*.

reply loop escape

An INTUITY AUDIX feature that allows a user the option of continuing to respond to a message after trying to reply to a nonuser message.

reply to sender

An INTUITY AUDIX feature that allows users to immediately place a call to the originator of an incoming message if that person is in the switch's dial plan.

request to send (RTS)

One of the control signals on an EIA-232 connector that places the modem in the originate mode so that it can begin to send.

restart

1. A Lucent INTUITY feature that allows INTUITY AUDIX users who have reached the system through the call answer feature to access their own mailboxes by entering the *R (Restart) command. This feature is especially useful for long-distance calls or for users who want to access the Lucent INTUITY system when all the ports are busy. 2. The reinitialization of certain software, for example, *restarting* the messaging system.

restore

The process of recovering lost or damaged files by retrieving them from available back-up tapes, floppy diskette, or another disk device.

retention time

The amount of time messages are saved on disk before being automatically deleted from a user's mailbox.

reusable upgrade kit (RUK)

A package shipped to the customer's site prior to an upgrade that contains materials the technician needs to complete the installation. This package includes an A/B switch box, a keyboard, a 25-foot coaxial cable, two T adapters, and terminations to a LAN circuit card. It remains the property of Lucent once the installation is finished.

right-to-use (RTU) fee

A charge to the customer to access certain functions or capacities that are otherwise restricted, for example, additional voice or networking ports or hours of speech storage. Lucent personnel can update RTU parameters either at the customer's site or remotely via a modem.

ringer equivalence number (REN)

A number required in the United States for registering your telephone equipment with a service provider.

ROM

See *read-only memory*.

RS-232

See *EIA interface*.

RTS

See *request to send*.

S

SCA

See *switch communications adapter*.

scan

To automatically play mail messages, headers, or both.

scheduled delivery time

A time and/or date that an INTUITY AUDIX user can assign to a message that tells the system when to deliver it. If a delivery time is omitted, the system sends the message immediately.

screen

That portion of the Lucent INTUITY user interface through which most administrative tasks are performed. Lucent INTUITY screens request user input in the form of a command from the `enter command:` prompt.

SCSI

See *small computer system interface*.

secondary extension

A second, fax-dedicated extension that directs incoming faxes directly into a user's mailbox without ringing the telephone. The secondary extension shares the same mailbox as the voice extension, but acts like a fax machine. Also called *personal fax extension*.

serial transmission

The transmission of one bit at a time over a single wire.

server

A computer that processes and stores data that is used by other smaller computers. For Lucent INTUITY Message Manager, INTUITY AUDIX is the server. See also *client*.

shielded cables

Cables that are protected from interference with metallic braid or foil.

SID

See *switch integration device*.

SIMM

See *single in-line memory module*.

simplified message service interface (SMSI)

Type of data link connection to an integrated 1A ESS or 5ESS switch in the Lucent INTUITY system.

single in-line memory module (SIMM)

A method of containing random access memory (RAM) chips on narrow strips that attach directly to sockets on the CPU circuit card. Multiple SIMMs are sometimes installed on a single CPU circuit card.

small computer systems interface (SCSI)

An interface standard defining the physical, logical, and electrical connections to computer system peripherals such as tape and disk drives.

SMSI

See *simplified message service interface*.

subscriber

A Lucent INTUITY user who has been assigned the ability to access the INTUITY AUDIX Voice Messaging system.

surge

A sudden rise and fall of voltage in an electrical circuit.

surge protector

A device that plugs into the telephone system and the commercial AC power outlet to protect the telephone system from damaging high-voltage surges.

SW

See *switch integration*.

switch

An automatic telephone exchange that allows the transmission of calls to and from the public telephone network. See also *private branch exchange (PBX)*.

switched access

A connection made from one endpoint to another through switch port cards. This allows the endpoint (such as a terminal) to be used for several applications.

switch hook

The device at the top of most telephones which is depressed when the handset is resting in the cradle (that is, when the telephone is *on hook*). This device is raised when the handset is picked up (that is, when the telephone is *off hook*).

switch-hook flash

A signaling technique in which the signal is originated by momentarily depressing the switch hook.

switch integration

Sharing of information between a messaging system and a switch to provide a seamless interface to callers and system users. A fully integrated INTUITY AUDIX system, for example, answers each incoming telephone call with information taken directly from the switch. Such information includes the number being called and the circumstances under which the call was sent to it, for example, covered from a busy or unanswered extension.

switch integration device (SID)

A combination of hardware and software that passes information from the switch to the Lucent INTUITY system thus allowing it to share information with non-Lucent switches. The operation of a SID is unique to the particular switch with which it interfaces.

switch network

Two or more interconnected switching systems.

synchronized mailbox

A mailbox that is paired with a corresponding mailbox in another domain and linked via software that keeps track of changes to either mailbox. When the contents of one mailbox change, the software replicates that change in the other mailbox.

synchronizer

The name given to the trusted server by the e-mail vendor, Lotus Notes.

synchronous communication

A method of data transmission in which bits or characters are sent at regular time intervals, rather than being spaced by start and stop bits. See also *asynchronous communication*.

synchronous transmission

A type of data transmission where the data characters and bits are exchanged at a fixed rate with the transmitter and receiver synchronized. This allows greater efficiency and supports more powerful protocols.

system configuration

See *configuration*.

T

T.30

The standard for Group III fax machines that covers the protocol used to manage a fax session and negotiate the capabilities supported by each fax endpoint.

tape cartridge

One or more spare removable cartridges required to back up system information.

tape drive

The physical unit that holds, reads, and writes to magnetic tape.

TCP/IP

See *transmission control protocol/internet program*.

TDD

See *telecommunications device for the deaf*.

TDM

See *time division multiplexing*.

telecommunications device for the deaf (TDD)

A device with a keyboard and display unit that connects to or substitutes for a telephone. The TDD allows a deaf or hearing-impaired person to communicate over the telephone lines with other people who have TDDs. It also allows a deaf person to communicate with the INTUITY AUDIX system.

terminal

See *display terminal*.

terminal type

A number indicating the type of terminal from which a user is logging in to the Lucent INTUITY system. Terminal type is the last required entry before gaining access to the Lucent INTUITY display screens.

terminating resistor

A grounding resistor placed at the end of a bus, line, or cable to prevent signals from being reflected or echoed.

time division multiplexing (TDM)

A method of serving multiple channels simultaneously over a common transmission path by assigning the transmission path sequentially to the channels, with each assignment being for a discrete time interval.

tip/ring

A term used to denote the analog telecommunications interface.

tone generator

A device acoustically coupled to a rotary telephone used to produce touch tone sounds.

touch tone unique

In places where telephones have letters accompanying the numbers on the telephone keypad, touch tone unique refers to combinations of letters that renders each combination unique as entered on the keypad, for example, *Doe,JaneA* and *Doe,JaneZ* to distinguish between two Jane Does.

traffic

The flow of attempts, calls, and messages across a telecommunications network.

translations

Software assignments that tell a system what to expect on a certain voice port or the data link, or how to handle incoming data. Translations customize the Lucent INTUITY system and switch features for users.

transmission control protocol/internet protocol (TCP/IP)

A suite of protocols that allow disparate hosts to connect over a network. Transmission control protocol (TCP) organizes data on both ends of a connection and ensures that the data that arrives matches that which was sent. Internet protocol (IP) ensures that a message passes through all the necessary routers to the proper destination.

T/R

See *tip/ring*.

troubleshooting

The process of locating and correcting errors in computer programs (also called *debugging*) or systems.

trusted server

A server that uses IMAPI to access an INTUITY AUDIX mailbox on behalf of a user and is empowered to do everything to a user message that INTUITY AUDIX can do.

U

UCD

See *uniform call distribution*.

Undelete

An INTUITY AUDIX feature that allows users to restore the last message deleted by pressing *U.

undelivered message

A message that has not yet been sent to an INTUITY AUDIX user's incoming mailbox. The message resides in the sender's outgoing mailbox and may be modified or redirected by the sender.

Unequipped

See *equipped/unequipped*.

unfinished message

A message that was recorded but not approved or addressed, usually as the result of an interrupted INTUITY AUDIX session. Also called *working message*.

uniform call distribution (UCD)

The type of call-distribution group (or hunt group) of analog port cards on some switches that connects users to the INTUITY AUDIX system. System 75, Generic 1, Generic 3, and some central office switches use UCD groups. See also *call-distribution group*.

uninterruptable power supply (UPS)

An auxiliary power unit that provides continuous power in cases where commercial power is lost.

UNIX operating system

A multi-user, multi-tasking computer operating system.

upgrade

An installation that moves a Lucent INTUITY system to a newer release.

untouched message

An INTUITY AUDIX feature that allows a user to keep a message in its current category by using the *H (Hold) command. If the message is in the new category, message-waiting indication remains active (for example, the message-waiting lamp remains lit).

UPS

See *uninterruptable power supply*.

U. S. 123

An alternate announcement set in U. S. English whose prompts use numbers, not letters, to identify telephone keypad presses. For example, a prompt might say, "Press star three," instead of, "Press star D."

user interface

The devices by which users access their mailboxes, manage mailing lists, administer personal greetings, and use other messaging capabilities. Types of user interfaces include a touch tone telephone keypad and a PC equipped with Lucent INTUITY Message Manager.

user population

A combination of different types of users on which Lucent INTUITY configuration guidelines are based.

V

vector

A customized program in the switch for processing incoming calls.

voice link

The Lucent INTUITY analog connection(s) to a call-distribution group (or hunt group) of analog ports on the switch.

voice mail

See *voice message*.

voice mailbox

See *mailbox*.

voice message

Digitized information stored by the Lucent INTUITY system on disk memory. Also called *voice mail*.

voice port

The IVC6 port that provides the interface between the Lucent INTUITY system and the analog ports on the switch.

voice terminal

A telephone used for spoken communications with the Lucent INTUITY system. A touch tone telephone with a message-waiting indicator is recommended for INTUITY AUDIX users.

voicing

1. Speaking a message into the Lucent INTUITY system during recording. 2. Having the system play back a message or prompt to a user.

volt

The unit of electromotive force required to produce a current of 1 ampere through a resistance of 1 ohm.

W

WAN

See *wide area network*.

watt

The unit of electrical power required to maintain a current of 1 amp under the pressure of 1 volt.

wide area network (WAN)

A data network typically extending a local area network (LAN) over telephone lines to link with LANS in other buildings and/or geographic locations.

window

That portion of the Lucent INTUITY user interface through which you can view system information or status.

Index

Numerics

10Base-2, 2-13
10Base-T, 2-13
4ESS, 3-5
56 Kbps networking, 3-3
 dynamic, 3-6
 static, 3-5
 switch requirements, 3-6
5ESS switch, 1-8, 3-11
64 Kbps networking, 3-9
 switch requirements, 3-12

A

ACCUNET, 3-4
ACCX card, 2-5, 2-6, 2-7, 2-8
 breakout box, 2-8, 2-10
 breakout cable, 2-8, 2-10
 connectivity diagram, 2-18
 described, 2-8
 dip switch settings, 2-10
 number supported, 2-8
 resetting, 7-16
 slot positions, 2-9
 testing, 7-8
address ranges
 description, 1-11
 listing, 4-49
administered remote users
 defined, 5-2
administration
 initial, 4-3
Administration Log, 1-16
Aliases, 2-23
Allow Automatic Full Updates field, 4-29, 5-7
AMIS, 1-2
 operation description, 1-3
ASCII, 4-19
AUDIX Communications Controller for Lucent Intuity, see
 ACCX card
AUDIX R1
 considerations for networking, 2-22
 network card, 2-22
 networking considerations, 2-22
 R1V3, 1-2
automatic deletion of non-administered remote users, 5-16
AYC22, also see ACCX card

B

Backups and their effect on TCP/IP networking, 7-23
break character, 4-25, 4-33, B-16, B-20
Broadcast Message, 2-23
Busy out channel
 defined, 7-21
busy out channel
 procedure, 7-21

C

Call Waiting Indication field, A-5
CELP voice messaging encoding, 2-21, 2-22
central office, 1-8
Centrex, 3-11
Channel
 field, 4-25, 4-34
 planning, B-16, B-21
Channel internal loop-around test, 7-8
channels
 busyout, 7-21
 release, 7-22
colocated, 3-9, 3-15
 requirements, 3-12
Complete Updates, 2-23, 5-3
Configuration field, 4-19
Connection Type
 considerations for choosing, 3-27
 description, 1-11
 field, 4-23, 4-32
 planning, B-15, B-20
connectivity, 2-18, 2-19
conventions
 used in this book, xiv
Creating a New Message for a Third Person, 2-23

D

Data Module screen, 2-20
Data Rate
 assigning multiple, 4-19
 field, 4-19, 4-25, 4-34
 planning, B-16, B-21
Dataphone Digital Service, 3-5
DCP, 1-5, 2-3
 channel administration, 4-16
 networking ports
 administration, A-2, A-7
 pairing of channels, 4-15
 switches, 3-3, 3-9
DCP Channel Configuration Window, 4-16
DCP Mode 1, 2-3

- dynamic access, A-4
- Generic 2 administration, A-13
- static access, A-4
- System 75 and DEFINITY administration, A-4
- DCP Mode 3, 2-3
 - colocated requirements, 3-12
 - described, 3-9
 - Generic 2 administration, A-13
 - interlocation requirements, 3-13
 - switch administration, 3-13
 - System 75 and DEFINITY administration, A-5
- DCS, 1-9
- dedicated connection, 1-8
- Default Community
 - field, 4-27, 4-37
 - planning, B-17, B-23
- Default Gateway IP Address field, 4-10
- DEFINITY AUDIX R3.2, 1-2
 - considerations for networking, 2-21
- DEFINITY Communications System, 1-5
- DEFINITY Generic 1, 2-3
 - DCP Mode 1 requirements, 3-7
 - DCP Mode 3 requirements, 3-13
 - networking administration, A-2
 - RS-232 requirements, 3-18
- DEFINITY Generic 2, 2-3
 - DCP Mode 1 requirements, 3-7
 - DCP Mode 3 requirements, 3-13
 - networking administration, A-11
 - RS-232 requirements, 3-18
- DEFINITY Generic 3, 2-3
 - DCP Mode 1 requirements, 3-7
 - DCP Mode 3 requirements, 3-13
 - networking administration, A-2
 - RS-232 requirements, 3-18
- deleting remote users, 5-21
- design center, 3-2
 - process, B-2
 - request for support, B-3
- Dial String, 1-11
 - definition, 1-11
 - field
 - remote machine, 4-33
 - guidelines, 4-24, 4-33
 - planning, 4-24, B-16, B-20
- Digital Communication Protocol
 - see DCP
- Digital networking
 - introduction to, 1-1
- digital networking
 - description, 1-2
 - enhances AUDIX Messaging, 1-4
 - feature overview, 1-14
 - maximum capacities, 1-5
 - operation, 1-2
 - types, 1-8
 - central office networking, 1-8
 - DCS network, 1-9

- local networking, 1-8
- mixed networking, 1-8
- remote networking, 1-8
- Directory, 2-23
- document
 - audience, xi
 - purpose, xi
- DS1
 - circuit packs, 3-13
 - facilities, 3-13
 - interface, 3-3, 3-6
- Dynamic 56 Kbps networking, 3-6

E

- E-1154, B-3
- EIA
 - RS-232, 1-5, 2-3
- ELA, 2-30
- Electronic Industries Association
 - see EIA
- e-mail, 1-2
 - considerations for networking, 2-21, 2-25
 - message delivery, 2-25
 - messages, 1-4
 - remote updates, 2-30
 - synchronization with voice mailboxes, 2-28
 - trusted server, 2-28
- End Ext
 - field, 4-28, 4-38
 - planning, B-17, B-24
- enhanced list administration, 2-30
- equipped
 - administration, 4-17, 4-18, 4-21
- ethernet
 - 10Base-T, 2-13
 - card, 2-12
 - thick, 2-13
 - thin, 2-13
 - twisted pair (no link integrity), 2-13
- Ethernet Board Configuration window, 4-11
- Extension Length, 1-11
 - field, 4-27, 4-37
 - planning, B-17, B-23

F

- fax, 1-2
 - considerations for networking, 2-21, 2-24
 - message delivery, 2-25
 - messages, 1-4
- Feature Options screen, 4-5
- forward messages
 - description, 1-4

Forwarding Messages with Comments, 2-23

G

G3r
colocated, 3-12
Glossary, GL-1

H

Help
improving the documentation, xxii
Help see *Troubleshooting*
How to comment on this book, xxii
hunt group
administering DCP networking ports, A-3
administering RS-232 networking ports, A-6
networking ports, 2-20
Hunt Group screen, A-3, A-6

I

I-Channel
System 75, DEFINITY Generic 1 and 3, A-2
System 85, A-7
Incoming Calls Unanswered field, 6-6, 6-11
initialization string
for 3820 modem, 4-19
for 3830 modem, 4-19
installation specification, B-3
Integrated Services Digital Network
see ISDN, 3-9
intended audiences, xi
interlocation requirements, 3-13
Intuity AUDIX
considerations for networking
Release 1, 2-21
Release 2, 2-21
Release 3, 2-21
digital networking
introduction to, xii
Release 3, 1-2
Release 4, 1-2
IP Address field, 4-10
ISDN, 3-9, 3-13
circuit packs, 3-13

L

LAN card, 2-5, 2-6, 2-7, 2-8
attachments to the network, 2-13
connectivity diagram, 2-19
described, 2-12
jumper settings, 2-13
number supported, 2-13
listing address ranges, 4-49
listing remote extensions, 4-51
local area network, see LAN, 3-20
local machine
changing, 4-22
definition, 1-6
renaming, 4-44
updating, 4-22, 4-26
Local Machine Name
planning, B-15
Location field, 4-27, 4-37
Login Announcement, 2-23
Lucent Intuity Message Manager, 2-6, 4-9
considerations for networking, 2-24

M

machine
definition, 1-6
local
definition, 1-6
maximum number supported, 2-3
remote
definition, 1-6
Machine Name, 1-10
deleting, 4-47
planning, B-20
remote
field description, 4-32
renaming, 4-44, 4-46
machine names
within the network, 2-28
Machine Profile screen
local machine, 4-26
remote machine, 4-35
Machine Type, 1-10
field, 4-27, 4-34, 4-37
planning, B-21
machines
viewing screens, 4-53
Mailing Lists, 1-4, 2-23
Manual backups and their effect on TCP/IP
networking, 7-23
MAP, 2-5
MAP/100, slot location of LAN interface card, 2-13
MAP/40, slot location of LAN interface card, 2-13

MAP/5, slot location of LAN interface card, 2-13
 Maximum Simultaneous Channels field, 6-6, 6-11
 memory addresses
 ACCX card, 2-10
 message components, 2-2
 Message Transmission Limit Exceptions field, 6-6, 6-11
 Message Transmission Schedule
 field, 4-34
 planning, B-21
 Message Transmission Threshold Exceptions field, 6-6,
 6-11
 Message Transmission Times, 2-23
 message-exchange features, 1-4
 modem
 administration, 2-20
 front panel settings, C-1
 initialization string
 administration, 4-19
 Modem loop-around test, 7-10
 modems
 Paradyne Comsphere
 3820, C-1
 3910, C-1
 supported, 2-17

N

name addressing
 description, 1-4
 nameback, 1-7
 description, 1-4
 network board trace, 7-17
 Network Channel Number field, 6-7
 Network Channel Peg Count field, 6-7
 Network Channel Type field, 6-7
 Network Channel Usage field, 6-7
 network channels
 administering, 4-13
 Network connection tests
 local system, 7-8
 network connections, 1-5
 DCP, 1-5
 network controller
 Generic 1 or Generic 3, 3-13
 System 75, 3-13
 network interface types, 4-11
 network loop-around test
 starting, 7-13
 stopping, 7-14
 network map, B-4
 network turnaround, 1-14, 5-3
 described, 5-3
 planning, B-18, B-24
 Network Turnaround field, 4-30, 4-40, 5-8, 5-11
 networking
 definition, 1-2

 mixed connection types, 3-23
 Networking board trace, 7-17
 Networking Channel Administration Window, 4-14
 networking reports, 6-1
 New Name
 administration, 4-46
 nonadministered remote users
 defined, 5-2

P

Packet loss, 7-27
 packet loss, 7-30
 Packet statistics
 viewing, 7-23
 Paradyne Comsphere
 3810/3820
 front panel settings, C-9
 3810plus/3820plus/3910
 front panel settings, C-5
 3820, 2-17
 3830, 2-17
 3910, 2-17
 partial updates, 2-23, 5-3
 Password
 compliance guidelines, 1-5
 description, 1-5
 field, 4-25, 4-34
 planning, B-16, B-21
 planning
 with the design center, B-3
 worksheets, B-1
 point-of-presence switch, 3-7
 port capacity, 2-5, 2-6
 ports
 number purchased, 4-7
 Prefix
 definition, 1-11
 field, 4-27, 4-38
 planning, B-17, B-23
 Priority Messages, 2-24
 Private Messages, 2-24
 Problems see *Troubleshooting*

R

recording names
 remote users, 5-22
 release channel
 defined, 7-21
 procedure, 7-22
 Remote connection test
 description, 7-3
 Remote Deliveries Rescheduled field, 6-6, 6-11

- remote extensions
 - listing, 4-51
- Remote Extensions List
 - viewing, 5-14
- remote machine
 - adding, 4-31
 - changing, 4-41
 - definition, 1-6
 - deleting, 4-47
 - reading a deleted machine, 4-48
- Remote support center
 - before calling, 7-2
- remote support center, B-3
- Remote Undeliverable Messages field, 6-6, 6-11
- remote updates, 1-4, 1-14, 4-4, 5-3
 - complete updates, 2-23, 5-3
 - described, 5-2
 - e-mail, 2-30
 - partial updates, 2-23, 5-3
 - setting up for local system, 5-5
 - setting up for remote system, 5-8
- Remote users
 - receiving a test message, 7-7
 - sending a test message, 7-6
- remote users
 - administered number of, 4-8
 - administering, 5-1
 - administering manually, 5-18
 - changing data, 5-20
 - deleting, 5-21
 - recording names, 5-22
 - viewing usage dates, 5-14
- renaming machines, 4-44
- Reply to Sender, 2-24
- Request for Design Support, B-3
- requirements
 - DCP mode 1, 3-6
 - DCP mode 3, 3-12
- resetting the ACCX card, 7-16
- resources
 - related, xxi
- retries
 - after a failure, 1-15
- Return Call to Sender, 2-24
- right-to-use, 4-13
- RNX, 3-7
- RS-232, 1-5, 2-3
 - channel administration, 4-17, 4-18
 - channel configuration worksheet, B-13
 - connection type
 - described, 3-15
 - Generic 2 administration, A-14
 - modems supported, 2-17
 - networking administration, 4-17
 - requirements, 3-17
 - switch requirements, 3-18
 - System 75 and DEFINITY administration, A-5
 - System 85 administration, A-11

- RS-232 Channel Configuration Window, 4-18

S

- Scheduling, 1-15
- screens
 - Address Ranges, 4-50
 - Administration Log, 5-13
 - Blank AUDIX Voice Messaging, 5-6
 - Busyout Networking Channel, 7-21
 - Channel Internal Loop-Around Test, 7-9
 - DCP Channel Configuration, 4-16
 - Diagnostics Menu, 7-4
 - Digital Network Machine Administration, 4-32, 4-41
 - Feature Daily Traffic, 5-12, 5-13
 - Hourly Traffic Time, 6-8
 - List Machines, 4-54
 - List Remote Extensions, 4-52, 5-15
 - Local Machine Administration, 4-56
 - Local Machine Profile, 4-26
 - Machine Profile, 4-26
 - local machine, 4-26, 5-6
 - page two, 5-7, 5-10
 - remote machine, 4-36, 4-43, 5-9
 - Modem Loop-Around Test, 7-11
 - Network Channel Configuration, 4-17, 4-22
 - Network Load Daily Traffic, 6-5
 - Network Load Hourly Traffic, 6-10
 - Network Loop-Around Test, 7-13
 - Networking Channel Configuration Menu, 4-16, 4-18, 4-21
 - Networking Channel List, 4-14
 - Networking Diagnostics, 7-4
 - Release Networking Channel, 7-22
 - Remote Connection Test, 7-4
 - Remote Machine Administration Menu, 4-55, 4-57
 - Remote Machines List, 4-55
 - Remote Messages Daily Traffic, 6-15
 - Remote Messages Monthly Traffic, 6-19
 - Remote Subscriber, 5-18
 - Remote Update Request, 5-12
 - Rename Digital Machine, 4-46
 - Rename Local Machine, 4-44
 - RS-232 Channel Configuration, 4-18
 - Start Network Loop-Around Test, 7-13
 - Stop Network Loop-Around Test, 7-14, 7-19
 - System Parameters Features, 5-16
 - TCP Channel Configuration, 4-21
 - Test Packet Results, 7-27
 - Trace Levels, 7-18
- SDDN, 1-5, 2-4, 3-5
- SDN, 3-5
- Send Multimedia Messages
 - field, 4-35
 - planning, B-21
- send times, 1-11

- Send to Non-Administered Recipients
 - field, 4-39, 5-10
 - planning, B-18, B-24
- sending a test message to a remote user, 7-6
- Sending restrictions
 - subscriber, 5-19
- service office, 7-14
- service office, network loop-around test, 7-12
- SN222, 3-18
- SN228, 3-18
- SN228B, 3-18
- SN253, 3-13
- SN255B, 3-13
- SN255C, 3-13
- SN261B, 3-13
- SN261C, 3-13
- Software Defined Data Network, 3-5
- Software Defined Network, 3-4, 3-5
- stacking, 1-8
- Start Ext
 - field, 4-28, 4-38
 - planning, B-17, B-24
- Static 56 Kbps networking, 3-5
- Station screen, A-5
- statistics
 - gathering, 6-1
- sub-band voice messaging encoding, 2-22
- Subscriber administration
 - community ID, 5-19
 - sending restriction, 5-19
- Subscriber vs. user, terms defined, xiv
- Suggestions for improving book?, xxii
- switch
 - administration, 2-20, 4-3
 - DCP hunt group, A-3
 - DCP Mode 1
 - Generic 2 administration, A-13
 - System 75 and DEFINITY G1 and G3 administration, A-4
 - DCP Mode 3
 - Generic 2 administration, A-13
 - System 75 and DEFINITY G1 and G3 administration, A-5
 - DCP networking ports, A-2, A-7
 - Hunt Group screen, A-3
 - requirements, 2-20
 - DCP mode 1, 3-6
 - DCP mode 3, 3-12
 - RS-232
 - Generic 2 administration, A-14
 - System 75 and DEFINITY G1 and G3 administration, A-5
 - System 85 administration, A-11
 - RS-232 hunt group, A-6
- Switched, 4-19
- Switched Digital Service, 3-5
- switches

- 5ESS, 1-8, 3-11
- DCP, 3-3, 3-9
- DEFINITY Communication Systems
 - Generic 1, 2-3
 - Generic 2, 2-3
 - Generic 3, 2-3
- DEFINITY G1 R1V4, 2-5
- DEFINITY G3i V1, 2-5
- DEFINITY G3i V2, 2-6
- DEFINITY G3s V1, 2-5
- DEFINITY G3s V2, 2-6
- DEFINITY G3vs V1, 2-5
- DEFINITY G3vs V2, 2-6
- System 75, 2-3
- System 75 R1V3, 2-5
- System 85, 2-3
- Sync Mode
 - administration, 4-18
- System 75, 1-5
 - DCP Mode 1 requirements, 3-7
 - DCP Mode 3 requirements, 3-13
 - networking administration, A-2
 - RS-232 requirements, 3-18
- System 85, 1-5
 - DCP Mode 1 requirements, 3-7
 - DCP Mode 3 requirements, 3-13
 - networking administration, A-7
 - RS-232 requirements, 3-18
- system capacities, 2-6

T

- T1 carrier, 3-9, 3-13
- TCP Channel Configuration Window, 4-21
- TCP/IP, 1-5, 2-4
 - administering, 4-9
 - advantages, 3-20
 - channel administration, 4-20
 - configuring channels, 4-20
 - described, 3-20
 - diagnostics, 7-23
 - direct connect, 3-21
 - in menus, 4-7
 - network down, 7-23
 - networking administration, 4-9, 4-13, 4-16
 - over a LAN, 3-21
 - over a wide area network, 3-22
 - packet loss, 7-27, 7-30
 - planning, B-8
 - requirements, 3-22
 - test connection to remote machine, 7-28
 - test packet results, 7-27
 - test packets described, 7-29
 - throughput, 3-20
- Testing
 - channel internal loop-around, 7-8

- modem-loop around, 7-10
- network connections
 - local system, 7-8
- networking board trace, 7-17
- remote connection test, 7-3
 - TCP/IP connection to remote machine, 7-28
- tests
 - network looparound, 3-24
- thick ethernet, 2-13
- thin ethernet, 2-13
- TN2182, 3-7, 3-13
- TN464, 3-13
 - switch circuit pack, 3-6
- TN539B network card, 2-22
- TN722, 3-13
 - switch circuit pack, 3-6
- TN727, 3-13
- TN742, 3-18
- TN746B, 3-18
- TN748B, 3-13
- TN748C, 3-7, 3-13
- TN748D, 3-13
- TN754, 3-12
- TN756, 3-13
- TN767, 3-13
 - switch circuit pack, 3-6
- TN768, 3-7, 3-13
- TN777, 3-13
- TN780, 3-7, 3-13
- tone clocks, 3-7, 3-13
- tone detector, 3-7, 3-13
- Total Message Transmission Limit Exceptions field, 6-6, 6-11
- Total Message Transmission Threshold Exceptions field, 6-6, 6-11
- traffic
 - monitoring, 6-2
- traffic reports
 - network load daily, 6-3
 - network load hourly, 6-8
 - remote messages daily, 6-14
 - remote messages monthly, 6-18
- transcoding, 2-22
- Transfers, 2-24
- Troubleshooting, 7-6, 7-17
 - ACCX board reset, 7-16
 - ACCX board trace, 7-17
 - before you call the remote support center, 7-2
 - busyingout/releasing channels, 7-21
 - improving the documentation, xxii
 - modem loop-around test, 7-10
 - overview, 7-1
 - receiving a test message from a remote user, 7-7
 - resetting networking board, 7-16
 - TCP/IP, 7-23
 - TCP/IP networking down, 7-23
 - testing remote connection, 7-3
 - testing the channel loop-around, 7-8

- testing the network connection, 7-8
- trunk subgroup, 3-5
- trusted server, 2-6, 2-28, 4-9
- twisted pair
 - no link integrity, 2-13

U

- UDP
 - see Uniform Dial Plan
- Uniform Dial Plan, 1-9
- UNIX Machine Name field, 4-10
- Updates In
 - field, 4-30, 4-39, 5-7, 5-10
 - planning, B-18, B-24
- Updates Out
 - field, 4-30, 4-40, 5-8, 5-11
 - planning, B-18, B-24
- Usage Date field, 5-14
- user
 - local, 1-6
 - maximum number supported, 1-5
 - remote
 - administered, 1-6, 1-7
 - non-administered, 1-6
 - non-verified non-administered, 1-7
 - no-profile non-administered, 1-7
 - verified non-administered, 1-8

V

- verified nonadministered remote users
 - defined, 5-2
- viewing machine information, 4-53
- Voice ID field, 4-27, 4-37
- voice messaging encoding
 - between systems, 2-23
 - described, 2-22
- voice quality, 1-4
- voiceback, 1-7
- Voiced Name field, 4-27, 4-37, 5-20

W

- Wait, 4-25, 4-33, B-16, B-20
- Warnings field, 4-28, 4-38
- wide area network, 3-20
- worksheets
 - AUDIX networking planning, B-7
 - DCP networking ports, B-26
 - hunt group

- DCP networking ports, B-27
- RS-232 modems, B-30
- local and remote machine information, B-5
- local machine profile, B-17
- networking channel configuration, B-11
- personnel, B-10
- remote machine profile, B-19, B-23
- remote user information, B-25
- RS-232 channel configuration, B-13
- RS-232 modem ports, B-28
- TCP/IP planning, B-8