DEFINITY® AUDIX® System
Digital Networking

Contents

About This Document

Purpose

This document, *DEFINITY AUDIX System Digital Networking*, 585-300-534, provides a technical description of DEFINITY® AUDIX® digital networking and provides instructions for planning, installing, administering, and using DEFINITY AUDIX digital networking. Information is both descriptive and procedural.

Intended Audience

The primary audience for this document includes customer telecommunications managers and administrators, installers, provisioning project managers, software specialists, software associates, design specialists, and sales personnel. Account teams and customer telecommunications managers should use this document during the planning process. Customer telecommunications managers, administrators, and installation associates should use the document during the installation and administration processes. The other primary audience members should use the document for planning, administration, and maintenance purposes.

How This Document Is Organized

This document is organized into the following chapters:

- *About This Document*

  This preface describes the document's purpose, intended audiences, organization, conventions, trademarks and service marks, and related resources. This preface also explains how to make comments about the document.

- *Chapter 1, "Introduction to Digital Networking"*

  This chapter provides an introduction to the basics of DEFINITY AUDIX digital networking.

- *Chapter 2, "DEFINITY AUDIX Digital Networking Considerations"*

  This chapter provides a technical overview of DEFINITY AUDIX digital networking.

- *Chapter 3, "DCP Mode 3 — 64 Kbps"*

  This chapter provides a technical description and requirements for DCP Mode 3.

- *Chapter 4, "DCP Mode 2 — 9600 or 19,200 bps"*

  This chapter provides a technical description and requirements for DCP Mode 2.

- *Chapter 5, "DCP Mode 1 — 56 Kbps"*

  This chapter provides a technical description and requirements for DCP Mode 1.

- *Chapter 6, "Mixtures of High-Speed and Low-Speed Networks"*

  This chapter describes high-speed and low-speed networking on the same DEFINITY AUDIX system.

- *Chapter 7, "Digital Network Planning"*

  This chapter describes the process and provides worksheets for digital network planning.

- *Chapter 8, "Hardware Installation for DCP Mode 2"*

  This chapter provides hardware installation instructions for DCP Mode 2 hardware, and provides modem and data module settings.

- *Chapter 9, "Initial Network Administration and Acceptance Tests"*

  This chapter provides a task-by-task procedure for digital network administration and testing.

■ *Chapter 10, "Ongoing Administration"*

After you initially administer DEFINITY AUDIX digital networking and perform acceptance tests, you will need to perform ongoing administration tasks. This chapter contains procedures for updating machine and subscriber information.

■ *Chapter 11, "Networking Reports"*

The DEFINITY AUDIX system gathers information on system status and makes the information available in reports. This chapter describes how to access the reports and provides information on interpreting the reports.

■ *Appendix A, "Considerations for Non-United States"*

This appendix provides information on modem type approval by country and on design, implementation, and support for countries other than the United States.

A list of Abbreviations, Glossary, and Index also are provided.

Conventions Used

The following conventions were used in this document:

■ Rounded boxes represent keyboard keys that you press.

For example, an instruction to press the enter key is shown as

Press (ENTER).

■ Rounded boxes also represent phone pad keys that you press.

For example, an instruction to press zero on the phone pad is shown as

Press (0).

■ The word "enter" means to type a value and press (ENTER).

For example, an instruction to type y and press (ENTER) is shown as

Enter y and press (ENTER).

■ Two or three keys that you press at the same time (that is, you hold down the first key while pressing the second and/or third key) are shown as rounded boxes next to each other. For example, an instruction to press and hold (ALT) while typing the letter d is shown as

Press (ALT) (D)

■ Commands and text you type or enter appear in bold.

■ Values, instructions, and prompts that you see on the screen appear as follows: Press any key to continue.

■ Variables that the system supplies or that you must supply appear in *italics*.

For example, an error message including one of your filenames appears as:

```
The file filename is formatted incorrectly
```

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The following trademarked products may be mentioned in this document:

Trademarks	Origin
AUDIX®	registered trademark of Lucent Technologies
Comsphere®	registered trademark of Paradyne Corporation
DEFINITY®	registered trademark of Lucent Technologies
Intuity™	trademark of Lucent Technologies
Sportster®	registered trademark of 3Com Corporation
U.S. Robotics®	registered trademark of 3Com Corporation

Related Documentation

For a list of documents related to the DEFINITY AUDIX System, see the Lucent Technologies Product Publications Catalog website at www.lucent.com/enterprise/documentation.

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Introduction to Digital Networking

<div style="text-align: right; font-size: 3em;">**1**</div>

This chapter provides an introduction to the basics of DEFINITY AUDIX digital networking and describes some of the digital networking features. The DEFINITY AUDIX system provides two types of networking, digital networking and AUDIO Message Interchange Specification (AMIS) analog networking. Digital networking provides DEFINITY AUDIX subscribers with the ability to exchange voice messages with subscribers on other DEFINITY AUDIX systems, Intuity™ AUDIX systems, and AUDIX R1V5 or later systems (collectively called AUDIX systems). AMIS analog networking provides DEFINITY AUDIX subscribers with the ability to exchange messages with users of any voice messaging systems that have AMIS, including non-Lucent Technologies systems that use the AMIS standard.

The information in this document is intended for users of DEFINITY AUDIX digital networking. However, this chapter explains AMIS analog networking and compares AMIS with digital networking. Read the information in this chapter to understand the networking capabilities offered by the DEFINITY AUDIX system.

What Is Networking?

Loosely defined, networking is the transferring of voice messages between voice messaging subscribers located on different systems. For the DEFINITY AUDIX system, there are two types of networking:

- Digital networking
- AMIS analog networking

Digital networking is defined as the transfer of a digital file from one voice mailbox to another voice mailbox on a different system (DEFINITY AUDIX system, Intuity AUDIX system, or AUDIX R1 system). A voice message is nothing more than a digital computer file. The message is digitally recorded and stored, then transferred across communication lines. Just as two networked computer users can send files to each other, two AUDIX users can record voice messages and send the messages to each other.

Digital Networking Operation

Digital networking operates in the following manner:

1. A local subscriber records a message and addresses the message to a remote subscriber using a location prefix and the subscriber's extension.

2. DEFINITY AUDIX digital networking dials the number of the remote subscriber's system to which the message was addressed.

3. The remote system answers the call, and the local system sends the message.

4. The remote subscriber listens to the message and hears a message header that includes the originating system name, the originating subscriber name, the time sent, etc.

5. The subscriber who sent the message receives notification that the message was received and opened.

6. The remote subscriber can use the AUDIX voice messaging features to return a message to the originating subscriber, store the message, forward the message, etc.

A system administrator or installation technician must administer remote system information on the local system. For subscriber information, DEFINITY AUDIX digital networking provides the ability to share database information with remote DEFINITY AUDIX, Intuity AUDIX, and AUDIX R1 systems.

AMIS Analog Networking Operation

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

AMIS operates in the following manner:

1. A local subscriber records a message and addresses the message to a remote AMIS subscriber.

2. The AMIS system dials the number of the subscriber's system to which the message was addressed.

3. The remote AMIS system answers the call, exchanges protocols with the local system, and allows the local AMIS system to play, not transfer, the message.

4. As the local system plays the message, the remote AMIS system records the message in the subscriber's mailbox (indicated by the extension used when addressing the message).

5. The remote subscriber can listen to the message.

For more information on AMIS analog networking, refer to *AMIS Analog Networking*, 585-300-512. The document contains a complete description of AMIS for DEFINITY AUDIX systems, Intuity AUDIX systems, and AUDIX R1 systems, including planning and administration procedures.

Why You Should Use Networking

Networking enhances your DEFINITY AUDIX system in many ways:

■ If you have business offices in more than one geographic location, whether in the same building or in different cities, networking allows you to exchange voice messages with all locations as if they were one.

■ If you exceed the capacity of one AUDIX system at your location, you can network a DEFINITY AUDIX system with Intuity or AUDIX R1 systems so subscribers can exchange messages as if they were on the same system.

■ Message exchange features include:

— Name addressing — allows a subscriber to address a message by entering a subscriber's name.

— Name back — if a name is recorded for the remote subscriber, the system plays the recorded name when a subscriber addresses a message to the remote subscriber or when the subscriber receives a message from the remote subscriber.

— Ability to forward messages to one subscriber or a group of subscribers, respond to messages, and create group mailing lists. You cannot share mailing lists across the network.

■ The quality of a voice message sent between DEFINITY AUDIX systems and between DEFINITY AUDIX systems and Intuity AUDIX systems when using digital networking is the same as when the message was recorded, due to advanced CELP-based voice messaging encoding technology, no matter how many times you forward the message.

AUDIX R1 uses the sub-band voice messaging encoding algorithm. (CELP voice messaging encoding is a higher quality than sub-band.) Messages between DEFINITY AUDIX systems and AUDIX R1 systems are in sub-band format.

■ System administration for remote subscribers is simple and efficient with the automatic update feature for subscriber databases.

- If your business operates in different time zones, you can send or receive messages any time of the day or night.

- The DEFINITY AUDIX system can network (AMIS and digital) to a maximum of 100 DEFINITY AUDIX, Intuity AUDIX, or AUDIX R1 remote systems with a maximum of 100,000 local and remote subscribers.

- Passwords and unique identifiers for each system provide security to the network. DEFINITY AUDIX digital networking uses a digital protocol to exchange voice messages with other systems which also enhances system security.

- AMIS analog networking allows you to communicate with other voice messaging products that do not have the digital networking feature.

- All a digital networking subscriber needs to know to exchange voice messages with remote subscribers is the machine prefix and remote subscriber extension or, by using the name addressing feature, just the subscriber's name.

Networking Terminology

Before you proceed with this document, you need to know several terms related to DEFINITY AUDIX digital networking. Read the terms and their explanations in this section to help you understand the technology.

Local and Remote Machines

Machine is a term used for AUDIX systems or other AMIS voice mail systems. For DEFINITY AUDIX digital networking, there are two types of machines, local and remote. Your machine is both a local and a remote machine. To you, your machine is local because you are administered as a subscriber on the machine. All other machines in the network appear as remote machines to you. To someone at another location, however, their machine is the local machine and your machine is the remote. Use the following explanation as you continue with this document:

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

- A remote machine is any machine connected through the network with which your local machine exchanges voice messages.

Remote machines do not have to be situated in different geographical locations. If you have a large subscriber population at a single site, you may require more than one AUDIX machine to handle the capacity at that site. These multiple machines are networked together to provide messaging capabilities to all of the subscribers. The remote machine usually is placed physically close to the local machine.

As you plan and implement your network strategy with the other network administrators, remember that your machine is both local and remote. All machines connected through a digital network require specific information for the network to operate properly, such as machine names, passwords, dial plans, and extension ranges.

Subscriber Types

To understand DEFINITY AUDIX digital networking, you need to know the different types of subscribers. Networking actually has three sets of subscribers: local subscribers, non-administered remote subscribers, and administered remote subscribers. Local subscribers are the DEFINITY AUDIX users with voice mailboxes on your local machine. Non-administered and administered remote subscribers are the users on remote machines.

Local Subscribers

Local subscribers are the DEFINITY AUDIX users with voice mailboxes on your local machine. Administer the local subscribers as described in *DEFINITY AUDIX System Administration* (585-300-507). You do not have to change local subscriber administration for networking. To other machines in the network, though, the local subscribers on your machine are remote subscribers. Coordinate all subscriber administration processes with the other network administrators. Chapter 7, "Digital Network Planning", helps you and the other network administrators collect all the information needed to properly administer all subscribers.

Non-Administered Remote Subscribers

The term *non-administered remote subscriber* describes subscribers on remote machines in the network with whom local subscribers may be able to exchange voice messages. There are three types of non-administered remote subscribers, as described below.

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

Non-verified non-administered remote subscriber	A remote non-administered subscriber who does not have a profile on the local machine, but has had a message addressed to them. The local DEFINITY AUDIX system checks the database to determine if the address for the non-verified subscriber is valid on any administered remote machines. If the local machine determines that the address is valid, the system attempts to send the message. When the message is received by the remote machine and delivered to the subscriber, the local system creates a verified non-administered subscriber profile. A subscriber remains a non-verified remote subscriber only until the message is sent or returned.
Verified non-administered remote subscriber	A non-administered remote subscriber that has exchanged voice messages with the local machine. After the local machine successfully sends or receives voice messages, the system creates a profile for the non-administered subscriber. The profile contains the remote subscriber's extension and machine name, but does not contain a recording of the remote subscriber's name or the remote machine name. Name addressing and voice name-back does not work with for this type of remote subscriber.

Examples later in this chapter show you how the three types of non-administered remote subscribers work with the network.

Administered Remote Subscribers

The term *administered remote subscribers* describes any remote subscriber that has an administered profile on the local machine. The profile contains the following information:

- The remote subscriber's extension
- The remote subscriber's name
- The remote subscriber's machine name
- A recording of the remote subscriber's name (optional)
- A recording of the remote subscriber's machine name (optional)

Since the local machine knows the remote subscriber's name and has a recording of the name, the machine supports name addressing for administered remote subscribers. When a subscriber addresses a message to an administered remote subscriber, the person hears the name of the remote subscriber, if recorded. If the name has not been recorded, the person hears the remote subscriber's machine name, if the machine name has been recorded. If neither are recorded, the person hears the extension played by the DEFINITY AUDIX system. Examples later in this chapter show you how administered remote subscribers operate with the network.

Digital Networking Application Types

DEFINITY AUDIX digital networking provides different types of data connections between other DEFINITY AUDIX systems, Intuity AUDIX systems, and AUDIX R1 systems. The following list introduces you to some of the possible networking strategies available to the DEFINITY AUDIX system. The design center, International Technical Assistance Center (ITAC), or Centers of Excellence (COE) can help you determine and design the best networking strategy for your business.

Local Networking	A local network consists of one DEFINITY AUDIX system embedded in the same switch to which one or more Intuity or AUDIX R1 systems is attached. The networked AUDIX systems appear as one large voice processing system for most features.
Remote Networking	Remote systems are usually located in different geographic locations, share or have unique dial plans, and may use several different types of data connectivity.
Mixed Networking	A mixed network consists of a combination of local and remote networking or remote networking and may include any combination of DEFINITY AUDIX, Intuity AUDIX, and/or AUDIX R1 systems.
DEFINITY AUDIX Digital Networking with a DCS Network	One or more AUDIX systems connected to one or more switches in a Distributed Communications System (DCS) network. The networked multiple systems give the appearance of one large (local) AUDIX system. The DCS network can have a DEFINITY AUDIX system networked with Intuity AUDIX and/or AUDIX R1 systems on a single switch that serves the network or multiple systems on multiple switches. All AUDIX systems integrated with different switches must use the same Uniform Dial Plan (UDP).

DEFINITY AUDIX digital networking and DCS networking are two different features and may be implemented separately. A DEFINITY AUDIX system that serves other switches in a DCS network also can be networked with other DEFINITY AUDIX, Intuity AUDIX, and AUDIX R1 systems.

Data Connection Types

DEFINITY AUDIX digital networking provides different types of network connections using the Digital Communications Protocol (DCP). Data connections serve both local networking and remote networking, depending on your system configuration. The following table briefly describes the different types of network connections and terms associated with the connections. These network connections are described in detail in later chapters.

DCP Mode 1   An Lucent Technologies proprietary Digital Communications Protocol (DCP) connection using a data rate of 56 Kbps. DCP Mode 1 uses a DS1 facility on the switch or a dedicated facility on a T1 carrier.

DCP Mode 2   DCP Mode 2 is an asynchronous, low-speed (9600 or 19,200 bps) connection. DCP Mode 2 uses a modem/data module or modem/Asynchronous Data Unit (ADU) arrangement and connects over analog or voice-grade data lines.

DCP Mode 3   A DCP connection using a data rate of 64 Kbps. DCP Mode 3 uses a DS1 or ISDN facility on the switch or a dedicated facility on a T1 carrier.

The 19.2 Kbps data rate only operates on private networks, not the public network. If you do not have a private network 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, use one of the other types of data connections.

The type of data connection you use depends on the facilities at your site and how you plan to connect with remote sites. You do not have to use the same type of data connection for each AUDIX system to which the DEFINITY AUDIX system is networking.

Example of a Basic Network

The best way to understand DEFINITY AUDIX digital networking is to look at some examples. The following example shows a basic network which contains three machines, one local and two remote. In the example, the local DEFINITY AUDIX digital networking system is located in Denver, Colorado, and the remote systems are located in Columbus, Ohio, (AUDIX R1) and Lincroft, New Jersey, (Intuity).
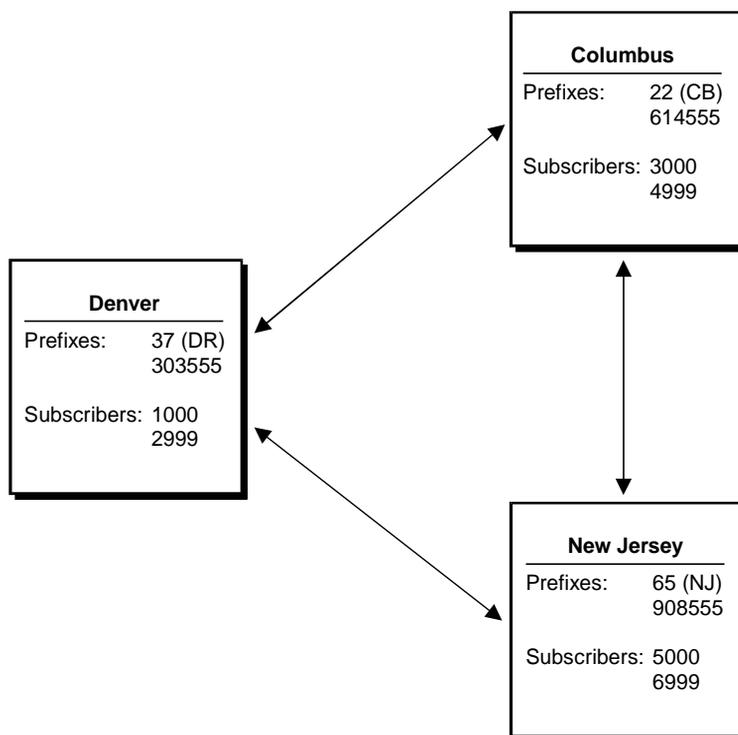
Figure 1-**1. Three**-**Machine Basic Network Example**

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	The name given to the local and remote machines. Each machine has a unique name. The machine name is used when initiating communications and increases the security of the system.
Machine Type	Either audix for DEFINITY AUDIX or Intuity AUDIX or r1aud for AUDIX R1
Location	The location is local or remote.
Extension Length	The extension length of the remote machine.

Prefix

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

For example, for a machine named "Denver," the prefix could be "DR." To address mail to a remote subscriber on the Denver machine, local subscribers enter "DR" (touch-tones 3 and 7) on the touch-tone keypad and then the remote subscriber's extension. For extension 2600 in Denver, the local subscriber enters ⊡3 ⊡7 ⊡2 ⊡6 ⊡0 ⊡0.

Each remote machine can have a maximum of 10 prefixes if you wanted to use more than one prefix. For example, if you wanted to be able to address voice messages by using a more familiar prefix, such as an area code or exchange, you could set up multiple prefixes. In the Denver example, you could set up 303, the area code, and 555, the exchange, as prefixes. By setting up multiple prefixes, local subscribers can use complete telephone numbers to address voice messages.

Address Range

The prefix, the starting (or lowest) extension, and the ending (or highest) extension assigned to a remote subscriber. When a local subscriber records a message and enters the address, DEFINITY AUDIX digital networking checks the address with the database address ranges to determine which machine may contain the subscriber. A maximum of 16 machines may share an address range. Remember, an address range does not always uniquely identify a machine.

Dial String

The telephone number of the remote machine used to initiate calls to a remote machine.

Data Rate

The data rate of the networking connection between two AUDIX systems.

Message
Transmission
Schedule

The range of times and intervals when the local machine attempts to deliver voice messages to remote machines.

The following table contains the information entered for each machine in the three-machine example.

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

Machine Name	DR	CB	NJ
Machine Type	DEFINITY AUDIX	AUDIX R1	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	24hrs/day every 5 minutes	24hrs/day every 5 minutes	24hrs/day every 5 minutes
Subscribers	1500	4000	6000

Sending a Message to an Administered Remote Subscriber

Once the network administration is finished, subscribers can exchange voice mail. The following example uses a local subscriber at extension 2000 on machine DR who wants to send a message to the administered remote subscriber at extension 6000 in New Jersey. All the user needs to do is enter the remote subscriber's address. DEFINITY AUDIX digital networking performs the processes described in the example in a matter of seconds. The user does not know that any of the processes are occurring.

1. The local subscriber records a message and addresses the message to an administered remote subscriber at extension "656000" ("NJ6000").

2. The local machine checks to see if "656000" is a local subscriber 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 subscriber database on the local machine for any information on a subscriber at address "656000." The local machine discovers information on an administered remote subscriber for the address and speaks the name, if recorded, of the remote subscriber.

5. The local machine schedules and delivers the message during the next valid send time.

Sending a Message to a Non-Administered Remote Subscriber

DEFINITY AUDIX digital networking easily handles the process of sending voice mail to no-profile, non-administered remote subscribers 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 subscriber.

1. The local subscriber in Denver records a message and addresses the message to a remote subscriber at "223500" ("CB3500"). The local machine has never exchanged voice messages with a remote subscriber at "223500." At this point, the remote subscriber is considered a no-profile, non-administered remote subscriber.

2. The local machine checks to see if "223500" is a local subscriber 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 subscriber is considered a non-verified, non-administered remote subscriber. A profile has been created in the database for the remote subscriber.

4. Using the address and the information obtained in the previous step, the local machine checks the remote subscriber database on the local machine for any information on a subscriber 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. CB accepts and delivers the message to the subscriber at extension 3500.

7. After successfully sending the message, the local machine creates a record for the remote subscriber that contains that remote subscriber's extension and machine name. At this point, the remote subscriber is considered a verified, non-administered remote subscriber.

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

Digital Networking Feature Overview

You should be familiar with the following digital networking features:

- Remote Updates

- Network Turnaround

- Scheduling

- Retry Strategies

- Administration Log

Remote Updates

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

During a complete update, all subscriber information is exchanged between systems. For example, 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 subscribers to the network. Complete updates may involve many thousands of users and require heavy system resources. Additionally, the local DEFINITY AUDIX system can automatically schedule a non-prime-time complete update from a remote system if the local system finds discrepancies between databases.

Partial updates occur on a regular basis, such as weekly or nightly, to add or change information for subscribers. Partial updates would occur, for example, when a new subscriber is added to a remote or local system. If all systems in the network are administered to allow partial updates, any time a subscriber is added to, deleted from, or changed on a system, that system will notify each system in the network of the change.

Refer to Chapter 10, "Ongoing Administration", for complete information on the Remote Updates feature.

Network Turnaround

The network turnaround feature allows one system to call another and exchange voice messages, send updated subscriber information, and request updated subscriber 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. It is generally recommended that you use network turnaround.

Scheduling

Messages are delivered to a remote system on a schedule set up on the local system for each remote system. The schedule includes the start and end time during the day when messages will be transmitted to the remote system and the interval for transmitting messages. The minimum interval is every five minutes.

If the connection to the remote system fails or processing requests fail, the system drops the call and retries again, depending on the failure reason. The number of retries depends on the following:

- Request type

- Failure reason

- Rescheduling count (System Parameters Features screen)

If the request is for a test (Test Machine screen), the local DEFINITY AUDIX system only tries once to make the connection.

If the request is not for a test and the failure reason is one of the following,

- Receive busy tone

- Receive intercept tone (while dialing the port)

- Receive reorder tone

- Dialing timeout

- Receive disconnect from the far end while dialing or processing

the local DEFINITY AUDIX system retries three more times with a one-minute interval between each call. If the fourth attempt (or the first if this is a test call) still fails, then a DEFINITY AUDIX audit (which takes place within at most the next eight minutes) reschedules all requests to the remote system for subsequent transmission based on the transmission schedule for that system (remote Machine Profile screen).

Administration Request

If the Update Out field on the remote Machine Profile screen is set to yes, and there is a change to send to remote system, the local DEFINITY AUDIX system retries over and over until the remote system gets the update or the Update Out field is set to no.

Voice Mail Request

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

Status Request

The DEFINITY AUDIX system retries over and over again.

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 DEFINITY AUDIX administration screen status line when it logs administration errors. Use **display administration log** to display administration errors. The DEFINITY AUDIX system administrator should check the administration log each morning. You can correct subscriber problems identified on the administration log using regular administrative procedures (such as notifying a subscriber of an undeliverable message).

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

DEFINITY AUDIX Digital Networking Considerations

2

DEFINITY AUDIX digital networking allows local DEFINITY AUDIX subscribers to exchange voice messages with other DEFINITY AUDIX systems, INTUITY AUDIX systems, and AUDIX R1 systems (AUDIX systems). These systems can be located on the same site or spread out over several locations in the same or different cities and countries.

A DEFINITY AUDIX system may connect with a maximum of up to 100 other voice mail systems (digital networking and AMIS) and support a maximum of 100,000 local subscribers and administered and nonadministered remote subscribers.

However, the total number of networked systems and local and remote subscribers depends on several factors, such as:

- The number of networking ports

- The amount of available storage for remote subscriber data

- The speed of data transport between systems

"Disk Sizing for Local and Remote Subscribers" describes how the size of the hard disk determines the number of possible local and remote subscribers.

In addition, regardless of disk size, a DEFINITY AUDIX with one digital networking port with low-speed connectivity should be limited to a network with 10 other voice mail systems and will support only 100 local or 10,000 remote subscribers.

Number of Networking Ports

DEFINITY AUDIX Release 3.2 supports a maximum of 2 digital networking channels. DEFINITY AUDIX Release 4.0 supports 1 digital networking channel.

The DEFINITY AUDIX system works by emulating a switch station port circuit pack. In all switches, the DEFINITY AUDIX system can emulate a TN754, 8-port digital station circuit pack. In G3V2, and later switch releases, the DEFINITY AUDIX system can emulate a TN2181, 16-port digital station circuit pack. The DEFINITY ProLogix switch can support either the TN754 or TN2181 emulation. The TN754 and TN2181 are the only circuit pack emulations that can be used with digital networking. TN746 emulation is not an option with digital networking. For a complete description of circuit pack emulations for the DEFINITY AUDIX System, see *Switch Administration for the DEFINITY AUDIX System,* 585-300-509, or *Installation and Switch Administration for the DEFINITY AUDIX System Release 4.0,* 555-300-122.

Table 2-1 summarizes the DEFINITY AUDIX network and voice port capacity by DEFINITY AUDIX circuit-pack type, and circuit pack emulation when a system has digital networking.

Table 2-1.   **Voice Port Limits with Digital Networking by Circuit Pack Emulation**

Switch Circuit Pack Emulation	Maximum Number of Ports with Digital Networking					
	TN566B MFB		TN567 MFB		TN568	
	Voice	Network	Voice	Network	Voice	Network
TN2181 (16 Port DCP)	10	2	16	2	8	1
TN754 (8 Port DCP)	8	2	8	2	8	1

Disk Sizing for Local and Remote Subscribers

The number of local and remote subscribers supported by the DEFINITY AUDIX system depends, among other considerations, on the disk size. Remote subscribers include both digitally networked and AMIS analog subscribers. The number of hours of voice storage that needs to be purchased depends on the number of voiced names, messages, and greetings. Either a 40-hour disk or a 100-hour disk is provided with a Release 3.2. Release 4.0 provides only a 100-hour disk. The following table describes the maximum number of local and remote subscribers by disk size. The number of networking ports and the speed of data transport may decrease these numbers.

Table 2-2.   Maximum Local and Remote Subscribers by Disk Size

	15-Hour Disk	**40-Hour Disk**	**100-Hour Disk**
Maximum Local Subscribers	1000 or 500	2000 or 1200	2000
Maximum Remote Subscribers	8000 or 12000	10,000 or 16,000	100,000

15-Hour Disk Combinations

For the 15-hour disk, two combinations are given. There can be either 1000 local and 8000 remote subscribers or 500 local and 12,000 remote subscribers or some other valid combination. Use the following equation to determine what can be supported on the 15-hour disk:

$$(\text{LOCAL\_SUBS} * 7.5) + \text{REMOTE\_SUBS} \leq 16{,}000$$

40-Hour Disk Combinations

For the 40-hour disk, two combinations are given. There can be either 2000 local and 10,000 remote subscribers or 1200 local and 16,000 remote subscribers or some other valid combination. Use the following equation to determine what can be supported on the 40-hour disk:

$$(\text{LOCAL\_SUBS} * 7.5) + \text{REMOTE\_SUBS} \leq 25{,}000$$

Limitations on the 100-Hour Disk Drive

Although the 100-hour disk drive will accommodate up to 100,000 local and remote subscribers, the automatic weekly names backup can handle a maximum of approximately 60,000 remote subscribers. If there are more than 60,000 remote subscribers, then only the local subscriber names will be backed up during the weekly names backup. However, a demand backup of the local and remote subscriber names remains possible up to a total of about 90,000 remote subscribers. No customer backup of the remote subscribers' voiced names is possible if there are more than 90,000 remote subscribers.

Digital Networking Configurations

DEFINITY AUDIX digital networking is an optional feature that provides users with the ability to exchange voice messages with users on other DEFINITY AUDIX systems, Intuity AUDIX systems, and AUDIX R1 systems. The remote system may be colocated with or geographically distant from the local DEFINITY AUDIX system. DEFINITY AUDIX digital networking uses the proprietary AUDIX digital protocol to exchange voice messages, subscriber profiles, and message status information with other AUDIX systems. Digital networking is much more secure than AMIS analog networking.

DEFINITY AUDIX digital networking provides both high-speed and low-speed connectivity. The type of data connection you use depends on the facilities at your site and how you plan to connect with remote sites. High-speed connectivity is preferred if you have high-speed facilities between locations or heavy traffic between sites or communities of interest.

High-Speed Connectivity

DEFINITY AUDIX digital networking provides two high-speed network connection types.

DCP Mode 1	A Lucent Technologies proprietary Digital Communications Protocol (DCP) connection using a data rate of 56 Kbps. DCP Mode 1 uses a DS1 facility on the switch or a dedicated facility on a T1 carrier.
DCP Mode 3	A DCP connection using a data rate of 64 Kbps. DCP Mode 3 uses a DS1 or ISDN facility on the switch or a dedicated facility on a T1 carrier.

See Chapter 3, "DCP Mode 3 — 64 Kbps" and Chapter 5, "DCP Mode 1 — 56 Kbps" for a complete description and network configuration examples.

Low-Speed Connectivity

DEFINITY AUDIX digital networking provides one low-speed network connection type. DCP Mode 2 is an asynchronous, low-speed (9600 or 19,200 bps) connection. See Chapter 4, "DCP Mode 2 — 9600 or 19,200 bps", for a description of Mode 2 and network configuration examples.

DCP Mode 2 uses one of the following types of modem/data module arrangements:

■ DCP port, 7400A data module (connects to a TN754 circuit pack), modem, and analog port as shown in the following figure.
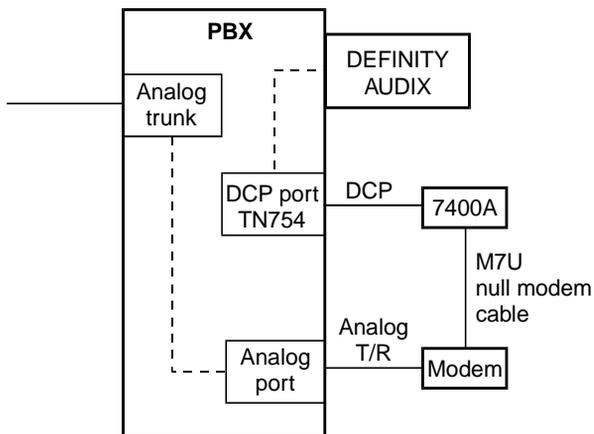
Figure 2-1.   Mode 2 DCP Port with 7400A Data Module

- Electronic Industries Association (EIA) port (connects to a TN726 circuit pack), asynchronous data unit (ADU), modem, and analog port as shown in the following figure.
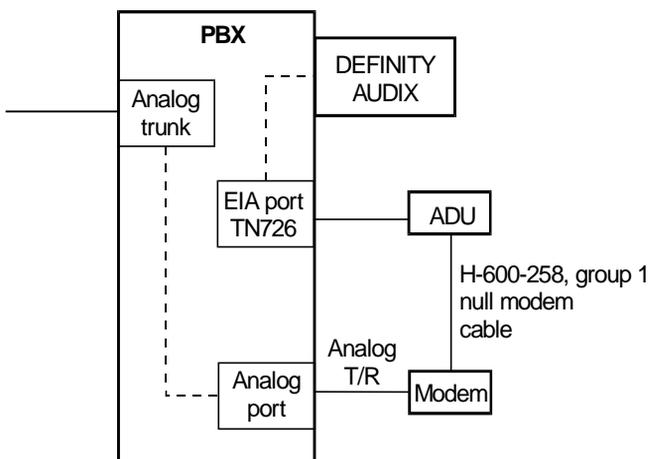
Figure 2-2.   Mode 2 with EIA Port and ADU

Multistage Dialing

DCP Mode 2 modem/data module arrangements use multistage dialing. Multistage dialing permits a DEFINITY AUDIX digital networking port to place a call to another DEFINITY AUDIX system in three stages.

1. Call a DCP-to-modem conversion resource.

2. Initiate a second call off premises over analog facilities to a remote modem.

3. Establish the final connection to the remote digital networking port.

All systems that network at low speed with a DEFINITY AUDIX system must have multistage dialing capability. The DEFINITY AUDIX system, Intuity AUDIX system, and AUDIX R1V5 and later systems (TN539B network card required) have multistage dialing. (AUDIX R1V8 is recommended when networking a DEFINITY AUDIX system with a non-U.S. AUDIX R1 system.) Chapter 4, "DCP Mode 2 — 9600 or 19,200 bps", describes multistage dialing in more detail.

Modem Compatibility

Modem compatibility may be a problem especially when networking with older AUDIX R1 systems that use modem pooling. (AUDIX R1V8 is recommended when networking a DEFINITY AUDIX system with a non-U.S. AUDIX R1 system.) See Chapter 4, "DCP Mode 2 — 9600 or 19,200 bps", for more information on modem compatibility.

Mixed High-Speed and Low-Speed Connectivity

The DEFINITY AUDIX system can support all three types of networking connections. The connection types (DCP Mode 1, DCP Mode 2, and DCP Mode 3) are dynamic and can change on a call-by-call basis to different systems for each networking port. For example, you could have a low-speed connection between the DEFINITY AUDIX system and a geographically remote system and a high-speed connection to a system in the same building (a low-speed connection always needs additional hardware as described above in *Low-Speed Connectivity*). See Chapter 6, "Mixtures of High-Speed and Low-Speed Networks", for a description and configuration examples.

Control Link and Display Set Integrations

To provide digital networking, the DEFINITY AUDIX system must emulate a digital station port circuit pack (TN754 or TN2181) on the switch. Either Control Link (CL) or Display Set (DS) switch integration can be used with the digital port emulation.

How the Digital Networking Ports Work

The DEFINITY AUDIX networking ports emulate the operation of a Digital Terminal Data Module (DTDM) which can be attached to a 7405D digital telephone. The networking ports appear to be DTDMs to the switch and use the second, previously unused, DCP I-channel. Therefore, digital networking does not contend for the same physical ports used for voice.

Digital Port Emulation

The DEFINITY AUDIX system interacts with the switch by emulating a TN754 or TN2181 digital station port circuit pack. The TN754 circuit pack provides 8 ports on the switch for digital telephones. The TN2181 circuit pack provides 16 ports on the switch for digital telephones. (The DEFINITY AUDIX system also can emulate an analog station port circuit pack, but digital port emulation must be used for digital networking.)

Voice Port Administration Overview

To administer a DEFINITY AUDIX voice port on the switch, you administer a digital station. If the switch software recognizes the DEFINITY AUDIX system as an AUDIX (native mode), you administer the station screen as one of the following:

- ADX8D (8 port; G3V4 or later)
- ADX16D (16 port; G3V4 or later)
- ADXDP (8 port; G3V1 Issue 16.2 or greater and G3V2 and G3V3)
- AUDIX (8 port; G3V1 prior to Issue 16.2 and G3i-Global Issue 1E40.03 or greater)

DEFINITY AUDIX Release 4.0 will only be recognized as native in DEFINITY switch software release 7.1 and later.

If the switch software only recognizes the DEFINITY AUDIX system as a TN754 or a TN2181, you administer the station screen as a 7405D station (alias).

Installation and Switch Administration for the DEFINITY AUDIX System Release 4.0, 555-300-122 or *Switch Administration for the DEFINITY AUDIX System*, 585-300-509, describes this administration in detail.

Networking Port Administration Overview

To administer a networking port, you administer the data module screen for a voice port. To administer one networking port, you administer the data module screen for voice port one. With Release 3.2 you can administer a second networking port. To administer a second networking port, you administer the data module screen for voice port two. Chapter 9, "Initial Network Administration and Acceptance Tests", provides a procedure for administering networking ports. If you have two networking ports, place them in a switch hunt group and make certain that the group extension is within a Direct Inward Dial (DID) range. If using DCP Mode 2, you may want to set up additional hunt groups — one for each pair of data module ports, one for each pair of ADU ports, and one for each pair of modem ports (refer to Chapter 4, "DCP Mode 2 — 9600 or 19,200 bps", for more information).

➡ NOTE:
In areas where DID or Direct Inward/Outward Dial (DIOD) is not available, you may have to dedicate a trunk to this application with one or two members.

Features/Functionality Not Supported

DEFINITY AUDIX digital networking does not support the following:

- *Direct* RS-232 networking (DCP Mode 2 with a modem/data module arrangement provides indirect RS-232 support.)

- Text Services Interface

- Call Detail Recording

- Receiving a fax from an Intuity AUDIX system

Considerations for Intersystem Networks

The DEFINITY AUDIX system can network with other DEFINITY AUDIX systems, Intuity AUDIX systems, and AUDIX R1 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 an Intuity AUDIX system or an AUDIX R1 system.

Intuity AUDIX System

Intuity AUDIX systems that have fax capability cannot send faxes over a network to a DEFINITY AUDIX system since the DEFINITY AUDIX system does not support fax messaging.

The Intuity AUDIX system and the DEFINITY AUDIX system both use the CELP voice messaging encoding algorithm, so the voice quality of messages sent between the two systems is not degraded.

AUDIX R1 System

The DEFINITY 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 a higher quality than sub-band. Because AUDIX R1 uses only sub-band, outgoing messages transmitted from a DEFINITY AUDIX system to an AUDIX R1 system will be transcoded (converted) from CELP to sub-band format as the message is being sent to the remote system, so the voice quality of the message will be sub-band quality on the AUDIX R1 system.

Incoming messages from an AUDIX R1 system will be stored in the sub-band format in which they are received. A message received from an AUDIX R1 system will be lower voice quality than other messages received on a DEFINITY AUDIX system.

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

DCP Mode 3 — 64 Kbps

3

This chapter describes Digital Communications Protocol (DCP) Mode 3. DCP Mode 3 is a high-speed, 64 Kbps connection. Use this type of network connection when the systems to be networked are co-located (serving the same switch) or when they are in different locations. (Two DEFINITY AUDIX systems cannot serve the same switch, but a DEFINITY AUDIX system can serve the same G3r switch as an Intuity AUDIX system or an AUDIX R1 system.)

The example in this chapter shows two DEFINITY AUDIX systems using a DCP Mode 3 connection. See Chapter 6 for a description of networks that combine DCP modes.

> **NOTE:**
> It is recommended that 64 Kbps connections be used to achieve maximum data throughput whenever 64 Kbps connectivity is available between two systems.

Considerations

If a customer is considering using DCP Mode 3 connections in their DEFINITY AUDIX network, keep the following in mind:

- Local or remote networking configurations are supported.

- The DEFINITY AUDIX system can network with other DEFINITY AUDIX systems, Intuity AUDIX systems, and AUDIX R1 systems via this method.

- Transmission in this type of network is full-duplex, synchronous, at 64 Kbps.

- For co-located systems, communication between the DEFINITY AUDIX system and the Intuity AUDIX system or AUDIX R1 system is from one switch DCP port to another.

- For remote configurations, the customer needs access to 64 Kbps public or private telephone network facilities; these should normally be a T1 carrier with DS1 services or Integrated Services Digital Network Primary Rate Interface (ISDN PRI). The customer needs a DS1 or ISDN interface on the switch to connect to these network facilities.

- T1 to E1 conversions are done by the long distance carrier.

General Information

The following figure, *DCP Mode 3 Network for Multiple Locations*, shows an arrangement where two DEFINITY AUDIX systems are networked via 64 Kbps services.
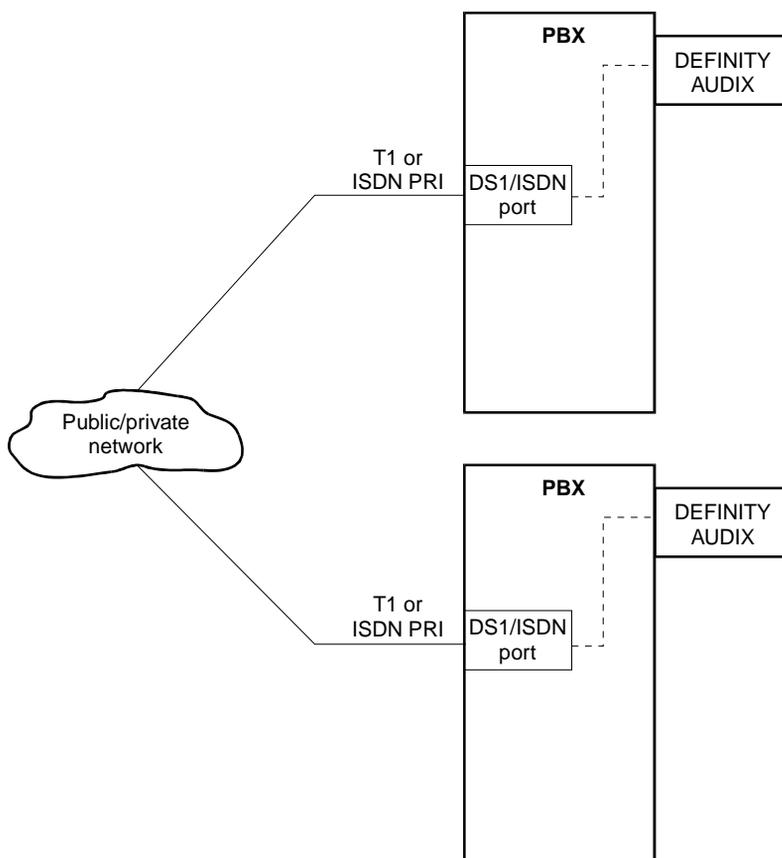
Figure 3-1.   DCP Mode 3 Network for Two DEFINITY AUDIX Systems

DEFINITY AUDIX Requirements for DCP Mode 3

Each DEFINITY AUDIX system must be running R3.2 or later software.

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 DEFINITY AUDIX system can be co-located on the same G3r switch with an Intuity AUDIX system and/or an AUDIX R1 system.

Co-located Requirements

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

Interlocation Requirements

For remote configurations, the customer needs access to 64 Kbps public or private telephone network facilities; these should normally be a T1 carrier (DS1 Interface set for Alternate Voice/Data) or ISDN PRI. The customer needs a DS1 or ISDN interface on the switch to connect to these network facilities.

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) — required in all carriers of a System 75, but not all carriers of a Generic 1 or Generic 3. (Do not use the TN748B, TN748D vintage 1, or the TN756.)

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

- TN786 and TN741 tone clocks must be used.

- TN727 Network Controller (System 75) or TN777 Network Controller (Generic 1 and Generic 3) is required.

- Circuit packs for DS1 and/or ISDN such as TN722 (DS1 on G1), TN767 (DS1 on G1, G3i, and G3r), or TN454 (DS1 or ISDN).

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.

Data Rates for DCP Mode 3

This arrangement operates at speeds of 64 Kbps.

The following figure shows Page 1 of the remote Machine Profile screen for calling a remote system using a data rate of 64 Kbps.

```
dac         Active    Alarms: M wA  Thresholds: none              Logins: 1
change machine dab                                               Page 1 of 2
                           MACHINE PROFILE

Machine Name: dab           Machine Type: audix        Location: remote

  Voiced Name? n        Extension Length: 5
    Voice ID: 3         Default Community: 1

ADDRESS RANGES
   Prefix                 Start Ext.   End Ext.      Warnings
 1: █                     00000        99999
 2:
 3:
 4:
 5:
 6:
 7:
 8:
 9:
10:


enter command: change machine dab
1Cancel    2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 3-2.   Machine Profile Screen for Remote System 64 Kbps Call, page 1

The following figure shows Page 2 of the remote Machine Profile screen for calling a remote system using a data rate of 64 Kbps.

```
dac          Active    Alarms: M wA  Thresholds: none                    Logins: 1
change machine dab                                                      Page 2 of 2
                              MACHINE PROFILE

NETWORK CONNECTION PARAMETERS
 Dial String: 14020
Modem String: █

Data Rate: 64000        Password:

Message Transmission Schedule (hh:mm)
  1.  Start: 00:00      End: 23:59      Interval: 00:05
  2.  Start:    :       End:    :       Interval:    :
  3.  Start:    :       End:    :       Interval:    :

Send to Non-Administered Recipients? y

Log Connect Events? y

Network Turnaround? n

Updates In? y  Out? y


enter command: change machine dab
 1 Cancel   2 Refresh  3 Enter    4 ClearFld 5 Help     6 Choices  7 NextPage 8 PrevPage
```

Figure 3-3.   Machine Profile Screen for Remote System 64 Kbps Call, page 2

DCP Mode 2 — 9600 or 19,200 bps

<div style="text-align: right; font-size: large;">**4**</div>

This chapter describes Digital Communications Protocol (DCP) Mode 2. DCP Mode 2 is an asynchronous, low-speed (9600 or 19,200 bps) connection. Use this type of network connection only when the systems to be networked are in different locations and require some type of interlocation facility to communicate. The DEFINITY AUDIX system always uses a modem/data module arrangement for a DCP Mode 2 connection. This chapter presents supported DCP Mode 2 configurations. High-speed (DCP Mode 1/ DCP Mode 3) connectivity is the preferred connection type if high-speed facilities are available between locations.

Considerations

If a customer is considering using DCP Mode 2 connections in their DEFINITY AUDIX network, keep the following in mind:

- Only *remote* networking configurations are supported.

- The DEFINITY AUDIX system can network with other DEFINITY AUDIX systems, Intuity AUDIX systems, and AUDIX R1V5 and later systems via this method.

- With only one networking port, low-speed connectivity limits the system to 10 networking nodes, and 100 local or 10,000 remote subscribers.

- When networking with an AUDIX R1 system, see *AUDIX Networking*, 585-300-903, for information on connections and modem pooling at the AUDIX R1 system.

DCP Mode 2 Connections

The following figure shows two DEFINITY AUDIX systems with a DCP Mode 2 digital networking connection.
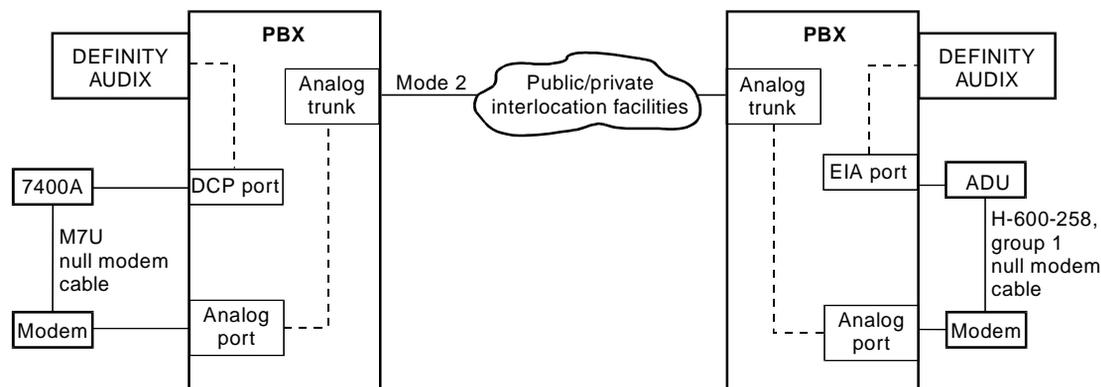
Figure 4-1.   DCP Mode 2 Connection (Modem/Data Module Arrangement)

The switch ports shown in the above drawing need the following circuit packs:

- EIA port – TN726

- DCP port – TN754

- Analog port – TN742 or TN746B

The following figure shows a DCP Mode 2 connection to public/private interlocation facilities with the following network connections:

   A. through a switch modem pool to an AUDIX R1 system

   B. through a single modem to an AUDIX R1 or an Intuity AUDIX system
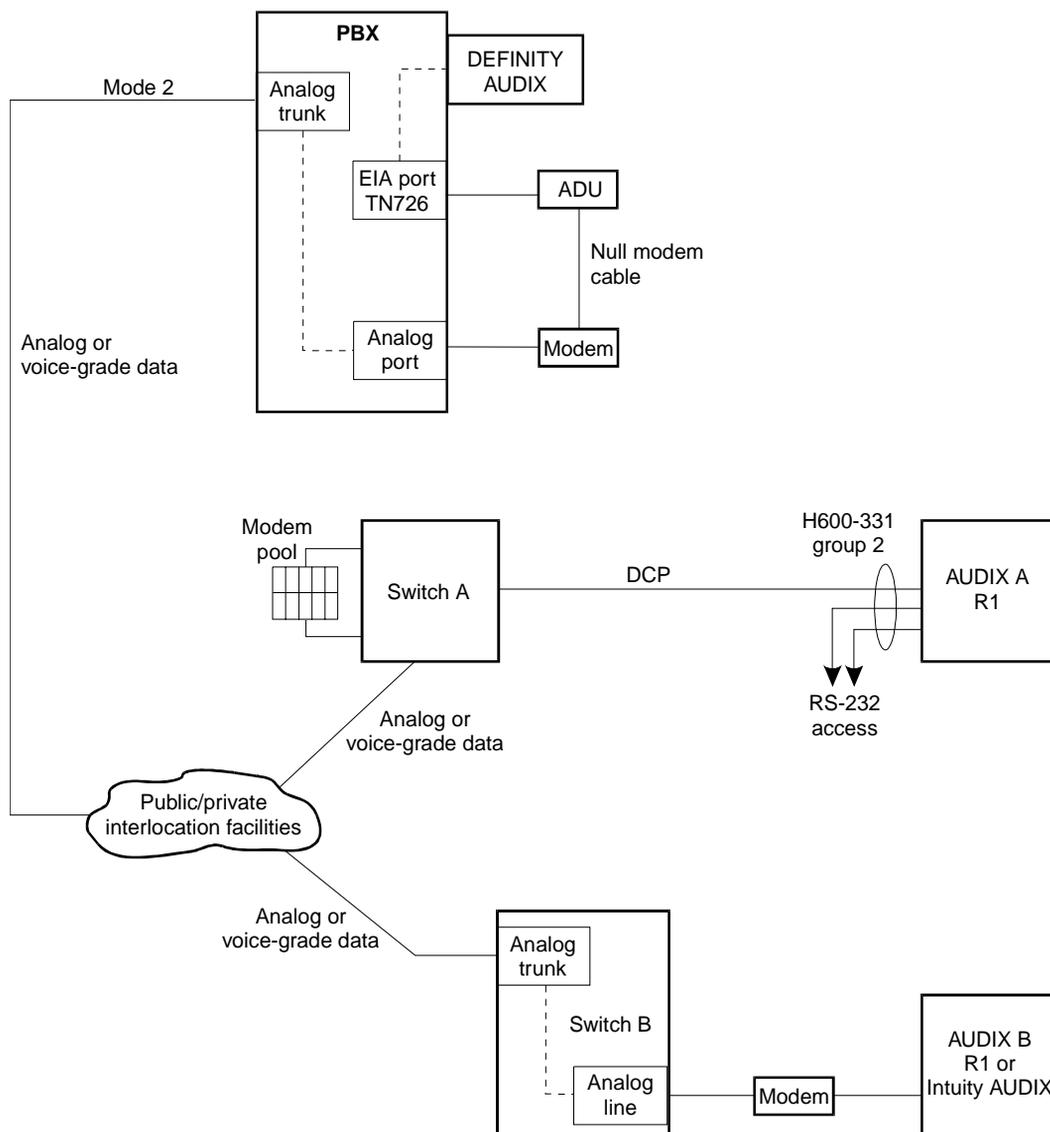
Figure 4-2.   DCP Mode 2 Connection to AUDIX R1 and Intuity AUDIX

DEFINITY AUDIX Modem/Data Module Arrangements

DEFINITY AUDIX DCP Mode 2 uses one of the following types of modem/data module arrangements (this arrangement is different than AUDIX R1 stand-alone modem pooling):

■ DCP port (TN754), 7400A data module, modem, and analog port as shown in the following figure.
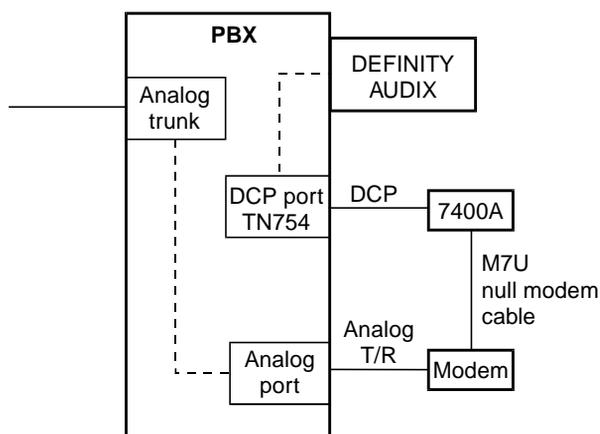
Figure 4-3. DCP Port and 7400A Data Module with Modem

In the above figure, the 7400A is attached to a Paradyne® Comsphere® modem using a null modem cable.

■ Electronic Industries Association (EIA) port, asynchronous data unit (ADU), modem, and analog port as shown in the following figure.
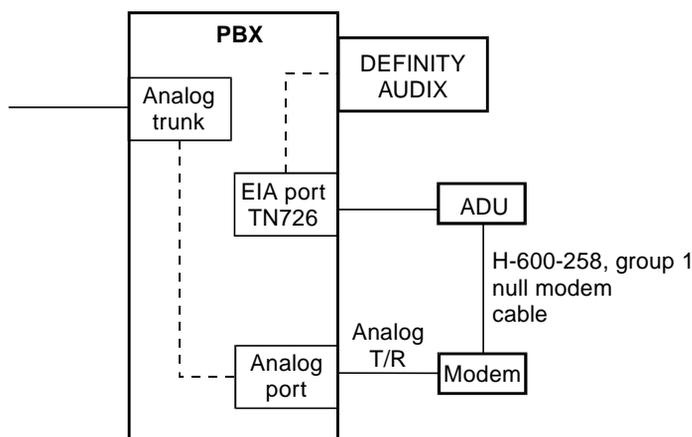

Figure 4-4.   EIA Port and ADU with Modem

In the above figure, the ADU is attached to a Paradyne Comsphere modem using a null modem cable.

DCP Mode 2 Hardware

The following hardware can be used in a modem/data module arrangement for DEFINITY AUDIX digital networking:

■ Paradyne Comsphere 3820 or 3820plus (dialup/leased line 2-wire/4-wire modem) (preferred for U.S.)

■ Paradyne Comsphere 3810 or 3810plus (dialup/leased line 4-wire modem)

■ Paradyne Comsphere 3910 (some non-US markets)

■ 7400A Data Module (connects to a DCP port [TN754]) and a 7400A power supply

■ Null-modem cable (M7U) (3 feet) for 7400A

■ ADU (connects to an EIA port [TN726]) (manufacture date October 1994 or later) and an ADU power supply

■ Null-modem cable (H-600-258, Group 1) (12 inches) for ADU

■ 103A jack (2 for each modem/data module arrangement)

■ D8W cord (14 feet)

Refer to Figure 8-1, 7400A Data Module in a DCP Mode 2 Modem/Data Module Arrangement, and Figure 8-2, ADU in a DCP Mode 2 Modem/Data Module Arrangement for connectivity diagrams.

In selecting modems or data modules for modem pooling, it is important to note that once a specific model is chosen for use on one end of the connection, only certain models will work on the other end of the connection. Combinations that have been tested are listed in the following table.

Table 4-1.   Connection Compatibility

Definity AUDIX 3.2 Networking	AUDIX R1/INTUITY
7400A/ADU with Comsphere Modems	Direct Connect RS232 with Comsphere Modems (AUDIX R1 and Intuity AUDIX)
	Combined Modem Pool with 7400A/2296 (AUDIX R1)
	Combined Modem Pool with 7400A/Comsphere Modems (AUDIX R1)
	Combined Modem Pool with 7400A/DM424 (AUDIX R1)
	Stand Alone Modem Pool with 7400A/Comsphere Modems (AUDIX R1)

Modem Front Panel Settings

Refer to Chapter 8, "Hardware Installation for DCP Mode 2", for information on modem front panel settings.

Multistage Dialing

DCP Mode 2 modem/data module arrangements use multistage dialing. All systems that network at low speed with a DEFINITY AUDIX system must have multistage dialing capability. The DEFINITY AUDIX system, Intuity AUDIX system, and AUDIX R1V5 and later systems (TN539B network card required) have multistage dialing.

DEFINITY AUDIX to DEFINITY AUDIX

Multistage dialing from one DEFINITY AUDIX system to another DEFINITY AUDIX system permits a digital networking port to place a call in three stages.

1. Call a DCP-to-modem conversion resource.

2. Initiate a second call off premises over analog facilities to a remote modem.

3. Establish the final connection to the remote digital networking port.

All three stages must be included in the Dial String entered on the Machine Profile screen for calling the other system.

DEFINITY AUDIX to Intuity AUDIX or AUDIX R1

Multistage dialing from a DEFINITY AUDIX system to an Intuity AUDIX system or an AUDIX R1 system permits a digital networking port to place a call in two stages.

1. Call a DCP-to-modem conversion resource.

2. Initiate a second call off premises over analog facilities to a remote modem or modem pool.

These two stages must be included in the Dial String entered on the DEFINITY AUDIX Machine Profile screen for calling the Intuity AUDIX system or AUDIX R1 system.

Intuity AUDIX or AUDIX R1 to DEFINITY AUDIX

Multistage dialing from an Intuity AUDIX system or an AUDIX R1 system to a DEFINITY AUDIX system permits a digital networking port to place a call in two stages.

1. Initiate a call off premises over analog facilities to a remote modem.

2. Establish the final connection to the remote digital networking port.

The Intuity AUDIX or AUDIX R1 dial string must include these two stages for calling the DEFINITY AUDIX system.

Following is an example Dial String for an Intuity AUDIX or AUDIX R1 DCP Mode 2 networking call to a DEFINITY AUDIX networking port:

ATDT9,1303,5552345"W""B"51234

- ATDT – Attention command of the modem

- 9,1303,5552345 – Long distance number of the remote DEFINITY AUDIX modem or modem hunt group

- ■ "W" – Wait for modems to handshake

- ■ "B" – Send Break command to activate the DIAL: prompt on the DCP data module

- ■ 51234 – Cause the DCP data module to dial the DEFINITY AUDIX networking port or hunt group.

The following figure shows the three stages of multistage dialing:

Multistage Dial Information:

Dial string: `4993"W"ATDT919086587100"W""B"7104`
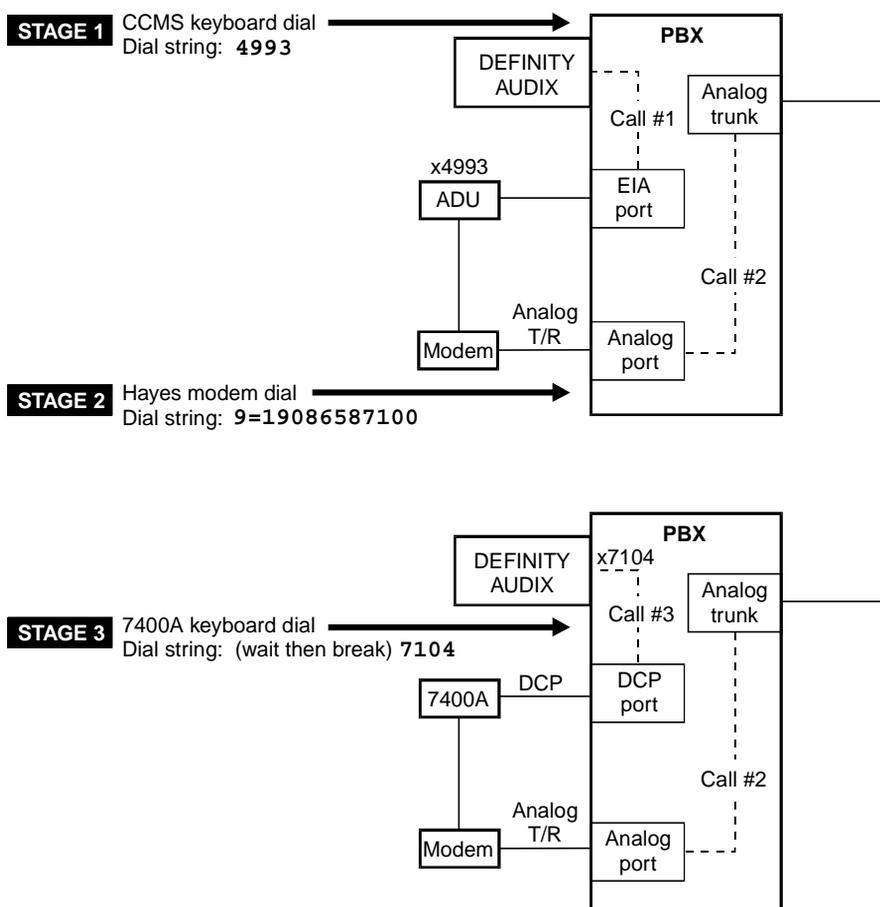
Figure 4-5.   Multistage Dialing Between DEFINITY AUDIX Systems

In the dial string shown in the above figure, the end of the first stage of dialing is indicated by the **W** command which tells the DEFINITY AUDIX system to wait for a connection to be established to the next element. Calling via a modem/data module arrangement (shown in the above figure) involves the following stages:

- **Stage 1**. The DEFINITY AUDIX system sends the dial string **4993** to establish a connection with the digital side of a modem/data module arrangement at a common DCP Mode 2 data rate (9600 or 19200 bps). In the above figure, this connection is from the DEFINITY AUDIX system to the ADU. (An Intuity AUDIX system or an AUDIX R1 system to a DEFINITY AUDIX system does not require this stage but may require commas for pauses.)

- **Stage 2**. The DEFINITY AUDIX system then sends the Hayes dialing commands (in the above figure, this string is **ATDT 9=19086587100**). The local modem goes off-hook and initiates a call to the remote endpoint. The modem at the remote endpoint answers the call.

- **Stage 3**. The third stage of the dial string tells the remote data module to go off hook (indicated by the **W** [wait] and **B** [break] command) and dial the digital networking port hunt group **7104**. The call completes to the remote DEFINITY AUDIX system. (A DEFINITY AUDIX system to an Intuity AUDIX system or an AUDIX R1 system does not require this stage but may require commas for pauses.)

The following figure shows the dial string from the above figure entered on page 2 of the Machine Profile screen:

```
/dac         Active    Alarms: M wA  Thresholds: none              Logins: 1\
change machine dab                                              Page 2 of 2
                          MACHINE PROFILE

NETWORK CONNECTION PARAMETERS
 Dial String: 4993"W"ATDT9,19086587100"W""B"7104
Modem String: █

Data Rate: 9600        Password:

Message Transmission Schedule (hh:mm)
  1.  Start: 00:00     End: 23:59     Interval: 00:05
  2.  Start:    :      End:    :      Interval:    :
  3.  Start:    :      End:    :      Interval:    :

Send to Non-Administered Recipients? y

Log Connect Events? y

Network Turnaround? n

Updates In? y  Out? y
███████████████████████████████████████████████████████████████████████
enter command: change machine dab
1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage/
```

Figure 4-6.   Multistage Dial String on Machine Profile Screen

Switch Hardware Requirements for DCP Mode 2

DCP Mode 2 has the following hardware requirements for the System 75 R1V3 2.2 or later, DEFINITY G1, DEFINITY G3i, and DEFINITY G3r:

- TN754 DCP port (one port for each 7400A data module)

- TN726 EIA port (one port for each ADU)

- TN742 analog port/TN746B analog line (one port or one line for each modem)

- System 75

   — The switch must be R1V3 2.2 or later.

   — All tone detectors must be TN748C (V4 or later).

- DEFINITY Generic 1 and Generic 3

   — All tone detectors must be TN748C (V4 or later).

   — The tone clocks must be TN786 and TN741.

AUDIX R1 Requirements

AUDIX R1V5 and later systems require a TN539B network card to do two-stage dialing when networking with a DEFINITY AUDIX system using DCP Mode 2.

Switch Administration Requirements for DCP Mode 2

DCP Mode 2 requires the following additional switch administration. Refer to Chapter 9, "Initial Network Administration and Acceptance Tests", for administration procedures.

7400A Data Module

Add a data extension for each 7400A data module and set it up as a PDM.

Asynchronous Data Unit (ADU)

Add a data extension for each ADU and set it up as a data line.

Modem

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

Hunt Groups

If there are two digital networking ports, set up a hunt group for the digital networking ports and, optionally, for pairs of data modules, ADUs, and modems.

Digital Networking Ports

If there are two digital networking ports, set up a hunt group that contains the two ports for incoming calls.

Additional Hunt Groups

If there is hardware for two DCP Mode 2 networking ports for DEFINITY AUDIX digital networking, set up the following additional hunt groups on the switch.

- set up each pair of data module ports in a hunt group or set up each pair of ADU ports in a hunt group

- set up each pair of modem ports in a hunt group

Figure 4-7, Switch Hunt Groups for Data Module, ADU, and Modem Ports (2 of 2), depicts the hunt group arrangements for DCP Mode 2. In this figure, DEFINITY AUDIX A shows a hunt group for the pair of networking ports, a hunt group for the pair of 7400A data module ports, and a hunt group for the pair of modem ports. DEFINITY AUDIX B shows a hunt group for the pair of networking ports, a hunt group for the pair of ADU ports, and a hunt group for the pair of modem ports. The dial strings entered on the remote Machine Profile screen then use these hunt group numbers to place a call through the switch to the remote DEFINITY AUDIX system.

DEFINITY AUDIX A uses multistage dialing to place a call to DEFINITY AUDIX B.

- Stage 1 places a call to the 7400A data module using the hunt group 11 extension number 40020.

- Stage 2 places a call to modem hunt group 22 on PBX 2 using the number 20010.

- Stage 3 places a call to the hunt group extension of the DEFINITY AUDIX networking ports on PBX 2 using extension number 20000.

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Switch Administration Requirements for DCP Mode 2

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Hunt group 10
(networking ports)
Group extension 40000
Network port extensions
40001, 40002

Hunt group 11(data
module ports)
Group extension 40020
Data module extensions
40021, 40022

PBX 1
554-*nnnn*

DEFINITY
AUDIX A

ext. 40021 | TN754 port

Switched

Hunt group 11

ext. 40022 | TN754 port

7400A | 7400A

Modem | Modem

ext. 40011 | TN746B port

Switched

Hunt group 12

Analog trunk

ext. 40012 | TN746B port

Hunt group 12 (modem
ports)
Group extension 40010
Modem extensions
40011, 40012

Analog
data call

Public/private
interlocation facilities

Hunt group 20
(networking ports)
Group extension 20000
Network port extensions
20001, 20002

Hunt group 21 (ADU
ports)
Group extension 20020
ADU extensions 20021,
20022

PBX 2
552-*nnnn*

DEFINITY
AUDIX B

ext. 20021 | TN726 port

Switched

Hunt group 21

ext. 20022 | TN726 port

ADU | ADU

Modem | Modem

ext. 20011 | TN746B port

Switched

Hunt group 22

Analog trunk

ext. 20012 | TN746B port

Hunt group 22 (modem
ports)
Group extension 20010
Modem extensions
20011, 20012

Sample dial string
DEFINITY AUDIX A to DEFINITY AUDIX B
Dial 9 for outside trunk

40020	"W"	ATDT 9,5520010	"W" "B"	20000
Call 7400A hunt group	Wait	Tell modem to call modem hunt group on PBX 2 (Hunt Group 22)	Wait then send break to ADU connected to modem on PBX 2	Dial the hunt group extension of the DEFINITY AUDIX networking ports on PBX 2

Sample dial string
DEFINITY AUDIX B to DEFINITY AUDIX A
Dial 9 for outside trunk

20020	"W"	ATDT 9,5540010	"W" "B"	40000
Call ADU hunt group	Wait	Tell modem to call modem hunt group on PBX 1 (Hunt Group 12)	Wait then send break to 7400A connected to modem on PBX 1	Dial the hunt group extension of the DEFINITY AUDIX networking ports on PBX 1

Figure 4-7.   Switch Hunt Groups for Data Module, ADU, and Modem Ports (2 of 2)

The following figures show sample switch Hunt Group screens for DEFINITY
AUDIX A.

```
add hunt-group next                                          Page   1 of  27
                              HUNT GROUP

        Group Number: 10          Group Extension: 40000    Group Type: ucd
          Group Name: AUDIX netports                              ACD? n
              Queue? n                 Vector? █
       Security Code:        Night Service Destination:           COR: 1
    ISDN Caller Disp:                  Coverage Path:              TN: 1
```

Figure 4-8.   Digital Networking Ports Switch Hunt Group – Screen 1

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Switch Administration Requirements for DCP Mode 2

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```
add hunt-group next                                         Page    3 of   27
                             HUNT GROUP
             Group Number: 10    Group Extension: 40000       Group Type: ucd
       Member Range Allowed: 1 - 999            Administered Members (min/max): 0  /0
                                              Total Administered Members: 0

GROUP MEMBER ASSIGNMENTS
       Ext     Name             Ext     Name             Ext     Name
    1: 40001   AUDIX digport1   14:                   27:
    2: 40002   AUDIX digport2   15:                   28:
    3:                          16:                   29:
    4:                          17:                   30:
    5:                          18:                   31:
    6:                          19:                   32:
    7:                          20:                   33:
    8:                          21:                   34:
    9:                          22:                   35:
   10:                          23:                   36:
   11:                          24:                   37:
   12:                          25:                   38:
   13:                          26:                   39:
                                                     40:

    At_End of Member List
```

Figure 4-9.   Digital Networking Ports Switch Hunt Group – Group Member Assignments

```
add hunt-group next                                         Page    1 of   27
                             HUNT GROUP

       Group Number: 11            Group Extension: 40020     Group Type: ucd
         Group Name: AUDIX Data Mods                           ACD? n
              Queue? n                    Vector? n
       Security Code:      Night Service Destination:          COR: 1
   ISDN Caller Disp:                    Coverage Path:         TN: 1
```

Figure 4-10.   Data Module Switch Hunt Group – Screen 1

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Switch Administration Requirements for DCP Mode 2

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```
add hunt-group next                                     Page   3 of  27
                              HUNT GROUP
            Group Number: 11    Group Extension: 40000      Group Type: ucd
      Member Range Allowed: 1 - 999          Administered Members (min/max): 0  /0
                                        Total Administered Members: 0
GROUP MEMBER ASSIGNMENTS
      Ext      Name           Ext      Name               Ext      Name
   1: 40021   AUDIX Datamod1   14:                       27:
   2: 40022   AUDIX Datamod2   15:                       28:
   3:                         16:                       29:
   4:                         17:                       30:
   5:                         18:                       31:
   6:                         19:                       32:
   7:                         20:                       33:
   8:                         21:                       34:
   9:                         22:                       35:
  10:                         23:                       36:
  11:                         24:                       37:
  12:                         25:                       38:
  13:                         26:                       39:
                                                        40:

   At End of Member List
```

Figure 4-11.   Data Module Switch Hunt Group – Group Member Assignments

```
add hunt-group next                                     Page   1 of  27
                              HUNT GROUP

      Group Number: 12            Group Extension: 40010      Group Type: ucd
        Group Name: AUDIX Modems                                    ACD? n
             Queue? n                    Vector? n
      Security Code:      Night Service Destination:              COR: 1
   ISDN Caller Disp:            Coverage Path:                     TN: 1
```

Figure 4-12.   Modem Switch Hunt Group – Screen 1

```
add hunt-group next                                         Page   3 of  27
                              HUNT  GROUP
           Group Number: 12    Group Extension: 40010    Group Type: ucd
     Member Range Allowed: 1 - 999         Administered Members (min/max): 0  /0
                                           Total Administered Members: 0
GROUP MEMBER ASSIGNMENTS
       Ext     Name             Ext    Name                Ext    Name
   1: 40011    AUDIX modem1    14:                       27:
   2: 40012    AUDIX modem2    15:                       28:
   3:                         16:                       29:
   4:                         17:                       30:
   5:                         18:                       31:
   6:                         19:                       32:
   7:                         20:                       33:
   8:                         21:                       34:
   9:                         22:                       35:
  10:                         23:                       36:
  11:                         24:                       37:
  12:                         25:                       38:
  13:                         26:                       39:
                                                        40:
    At End of Member List
```

Figure 4-13.   Modem Switch Hunt Group – Group Member Assignments

The following screen shows Page 1 of the remote Machine Profile screen on
DEFINITY AUDIX A to set up a networking connection with DEFINITY AUDIX B.

```
dac          Active     Alarms: M wA  Thresholds: none              Logins: 1
change machine dab                                            Page 1 of 2
                          MACHINE PROFILE

Machine Name: dab          Machine Type: audix          Location: remote

 Voiced Name? n         Extension Length: 5
    Voice ID: 3         Default Community: 1

ADDRESS RANGES
    Prefix                 Start Ext.   End Ext.        Warnings
 1: █                      00000        99999
 2:
 3:
 4:
 5:
 6:
 7:
 8:
 9:
10:



enter command: change machine dab
1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

**Figure 4-14.   Remote Machine Profile Screen — Page 1 to Call DEFINITY
                AUDIX B**

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Switch Administration Requirements for DCP Mode 2

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The following screen shows Page 2 of the remote Machine Profile screen on
DEFINITY AUDIX A to set up a networking connection with DEFINITY AUDIX B.

```
dac          Active     Alarms: M wA  Thresholds: none              Logins: 1
change machine dab                                                Page 2 of 2
                             MACHINE PROFILE

NETWORK CONNECTION PARAMETERS
 Dial String: 40020"W"ATDT9,5520010"W""B"20000
Modem String: █

Data Rate: 9600        Password:

Message Transmission Schedule (hh:mm)
  1.  Start: 00:00     End: 23:59     Interval: 00:05
  2.  Start:  :        End:  :        Interval:  :
  3.  Start:  :        End:  :        Interval:  :

Send to Non-Administered Recipients? y

Log Connect Events? y

Network Turnaround? n

Updates In? y  Out? y
██████████████████████████████████████████████████████████
enter command: change machine dab
1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

**Figure 4-15.   Remote Machine Profile Screen — Page 2 to Call DEFINITY
                  AUDIX B**

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Switch Administration Requirements for DCP Mode 2

4-20

DCP Mode 1 — 56 Kbps

5

This chapter describes Digital Communications Protocol (DCP) Mode 1. Mode 1 is a high-speed, 56 Kbps network connection. Use it when the systems to be networked are in different locations and require some type of interlocation facility to communicate.

> **NOTE:**
> DCP Mode 3 is recommended for local networking on the same G3r switch between a DEFINITY AUDIX system and an Intuity AUDIX system or an AUDIX R1 system. See Chapter 3, "DCP Mode 3 — 64 Kbps", for a description of DCP Mode 3.

This chapter presents supported 56 Kbps configurations for the DEFINITY AUDIX system; all other 56 Kbps configurations must be designed by custom development. The example in this chapter shows two DEFINITY AUDIX systems using DCP Mode 1 at both locations. See Chapter 6 for a description of networks that combine DCP modes.

Considerations

If a customer is considering using DCP Mode 1 connections in their DEFINITY AUDIX network, keep the following in mind:

- DCP Mode 1 is not recommended for local networking configurations (DCP Mode 3 is recommended for local connections).

- The DEFINITY AUDIX system can network with other DEFINITY AUDIX systems, Intuity AUDIX systems, and AUDIX R1 systems using this method.

- Transmission in this type of network is full-duplex, synchronous, at 56 Kbps.

■ The customer also will need a DS1 interface on the switch to connect with the 56 Kbps facility.

■ The customer will need access to 56 Kbps robbed-bit facilities at a static or dynamic serving office (SO).

■ Long distance, 56 Kbps service may be provided by a long distance service provider.

General Information

To use DCP Mode 1 as the transmission protocol, the switch must be set up to access a switched network at 56 Kbps via robbed-bit facilities. These special access lines can be either AT&T Dataphone Digital Service (DDS) or ACCUNET T1.5, AT&T Software Defined Network (SDN) service providing access to either a static or dynamic Serving Office (SO), or compatible services provided by other vendors. Currently the System 75, DEFINITY Generic 1, and DEFINITY Generic 3 can provide this type of access.

The following figure, DCP Mode 1 Network Using Switched 56 Service, shows two DEFINITY AUDIX systems networked via 56 Kbps services.

➡ **NOTE:**
If the customer does not subscribe to switched 56 service, consider the DCP Mode 2 or DCP Mode 3 network alternatives before setting up a switched 56 Kbps facility. It is recommended that 64 Kbps connections be used to achieve maximum data throughput whenever 64 Kbps connectivity is available between two systems.
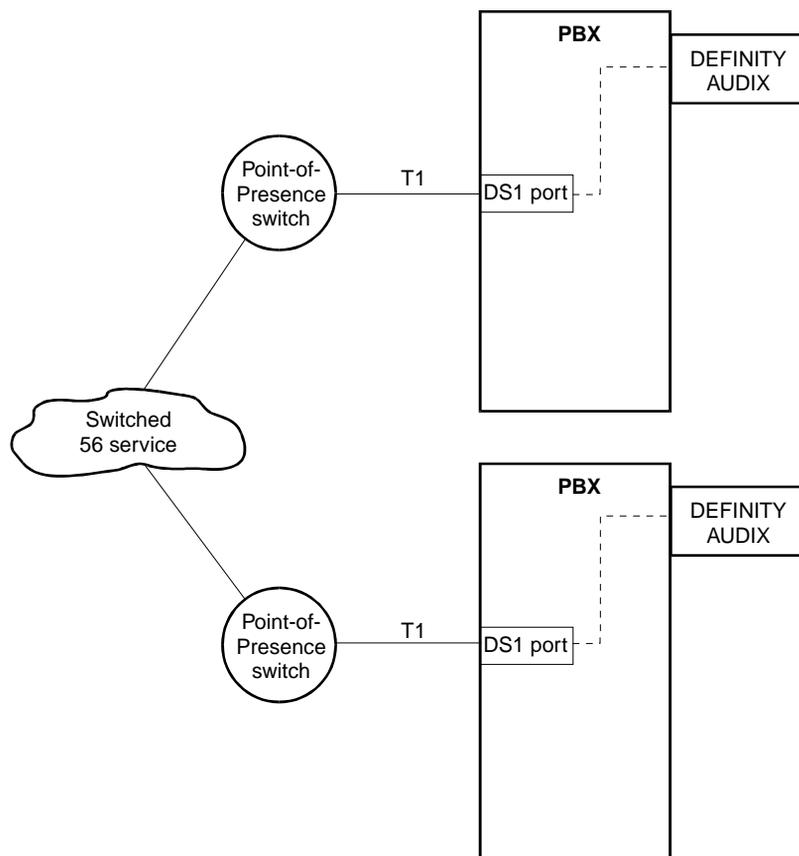
Figure 5-1. DCP Mode 1 Network Using Switched 56 Service

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. Customers using this configuration must have a trunk subgroup (TSG) dedicated to SDDN 56 Kbps between the customer premises and a central office. They must also have a System 75 R1V3 Issue 2.2 or later, a DEFINITY Generic 1, or a DEFINITY Generic 3 switch.

The central office must provide one of the following:

- AT&T Software Defined Network (SDN), T1.5, or Dataphone Digital Service (DDS) and Switched Digital Service (SDS), or compatible service offered by another vendor

- A 4ESS supporting 56 Kbps service

A customer *cannot* use this option if they have the following:

- T1.5 access to a central office tariffed for SDN

- T1.5 that does not originate from a 4ESS with Switched Digital Service (SDS)

Dynamic Access

Dynamic SDDN (non-ISDN) allows customers that currently subscribe to SDN voice applications to transmit data on the same access arrangement by prefixing a 115 feature code in front of a telephone number. This allows customers 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, and DEFINITY Generic 3 support dynamic access but have special requirements such as circuit packs.

⇒ NOTE:
DEFINITY AUDIX digital networking through tandem switches may not work. Contact the design center for these designs.

DEFINITY AUDIX Requirements for DCP Mode 1

Each DEFINITY AUDIX system requiring access to a switched 56 network must be running R3.2 or later software.

Switch (or Customer) Requirements for DCP Mode 1

To implement DEFINITY AUDIX 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. See the System Description for the switch to see which circuit packs will meet this requirement.

> **NOTE:**
> DEFINITY AUDIX digital networking through tandem switches may not work. Contact the design center for these designs.

Whether a customer is using static or dynamic 56 Kbps, the point-of-presence switch needs to be translated to match the switch (including wink in/wink out). The RNXs are set up by the customer and added to the network by AT&T Network Systems or another vendor.

> **NOTE:**
> Contact the design center to design ISDN.

> **NOTE:**
> See the *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.

Static Access Switch Requirements

The requirements for networking DEFINITY AUDIX systems via static 56 Kbps facilities depend on the customer's premises switch:

- System 75

    — The switch must be R1V3 2.2 or later.

    — All tone detectors must be TN748C (V4 or later).

- DEFINITY Generic 1 and Generic 3

    — Any release will support static 56 Kbps access.

    — All tone detectors must be TN748C (V4 or later).

    — The tone clocks must be TN786 and TN741.

Dynamic Access Switch Requirements

The requirements for networking DEFINITY AUDIX systems via dynamic 56 Kbps facilities depend on the customer premises switch:

- System 75

    — The switch must be R1V3 2.2 or later.

    — All tone detectors must be TN748C (V4 or later).

- DEFINITY Generic 1 and Generic 3

    — Any release will support dynamic 56 Kbps access.

    — All tone detectors must be TN748C (V4 or later).

    — The tone clocks must be TN786 and TN741.

Data Rates for DCP Mode 1

The configurations shown in this chapter operate at 56 Kbps.

The following figure shows Page 1 of the remote Machine Profile screen for calling a remote system using a data rate of 56 Kbps.

```
dac        Active    Alarms: M wA  Thresholds: none              Logins: 1
change machine dab                                             Page 1 of 2
                              MACHINE PROFILE

Machine Name: dab          Machine Type: audix         Location: remote

  Voiced Name? n        Extension Length: 5
     Voice ID: 3        Default Community: 1

ADDRESS RANGES
    Prefix                 Start Ext.   End Ext.      Warnings
 1: █                      00000        99999
 2:
 3:
 4:
 5:
 6:
 7:
 8:
 9:
10:


enter command: change machine dab
 1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 5-2. Machine Profile Screen for Remote System 56 Kbps Call, page 1

The following figure shows Page 2 of the remote Machine Profile screen.

```
dac          Active     Alarms: M wA  Thresholds: none              Logins: 1
change machine dab                                                 Page 2 of 2
                              MACHINE PROFILE

NETWORK CONNECTION PARAMETERS
 Dial String: 95553000
Modem String: █

Data Rate: 56000        Password:

Message Transmission Schedule (hh:mm)
   1.  Start: 00:00     End: 23:59      Interval: 00:05
   2.  Start:    :      End:    :       Interval:    :
   3.  Start:    :      End:    :       Interval:    :

Send to Non-Administered Recipients? y

Log Connect Events? y

Network Turnaround? n

Updates In? y  Out? y


enter command: change machine dab
 1Cancel   2Refresh  3Enter    4ClearFld 5Help      6Choices  7NextPage 8PrevPage
```

Figure 5-3.   Machine Profile Screen for Remote System 56 Kbps Call, page 2

Mixtures of High-Speed and Low-Speed Networks

6

This chapter presents supported configurations using high-speed and low-speed connections on the same DEFINITY AUDIX system. The DEFINITY AUDIX system can support all three types of networking connections. The connection types (DCP Mode 1, DCP Mode 2, and DCP Mode 3) are dynamic and can change on a call-by-call basis to different systems for each networking port. Each networking port can only support one DCP mode at any one time but can change modes for the next call. Additional hardware is always needed for DCP Mode 2 connections.

For example, a DEFINITY AUDIX system could use the following combination of network connections:

- DCP Mode 2 connection to an AUDIX R1 system or to an Intuity AUDIX system that uses an RS-232 connection or to another DEFINITY AUDIX system

- DCP Mode 1 and/or DCP Mode 3 connection to another DEFINITY AUDIX system, an Intuity AUDIX system, or an AUDIX R1 system

High-speed (DCP Mode 1/ DCP Mode 3) connectivity is the preferred connection type if high-speed facilities are available between locations.

Considerations

If a customer is considering using DCP Mode 3 connections in their DEFINITY AUDIX network, keep the following in mind:

- When both high-speed networking and low-speed networking are used, low-speed networking can induce delays for high-speed networking.

- To perform a network looparound test, there must be two digital networking ports on the machine being tested, and both ports must use the same DCP mode. One port does not allow loopback testing.

- External DCP Mode 2 equipment (modem, ADU, TN726, 7400A, and cabling) cannot be tested using a network looparound test unless the DEFINITY AUDIX system has all DCP Mode 2 equipment for two networking ports.

High-Speed and Low-Speed at the Same DEFINITY AUDIX System

The following figure, High-Speed and Low-Speed at the Same DEFINITY AUDIX System, shows DEFINITY AUDIX A connected to DEFINITY AUDIX B using DCP Mode 2 and connected to DEFINITY AUDIX C using either DCP Mode 1 or DCP Mode 3.
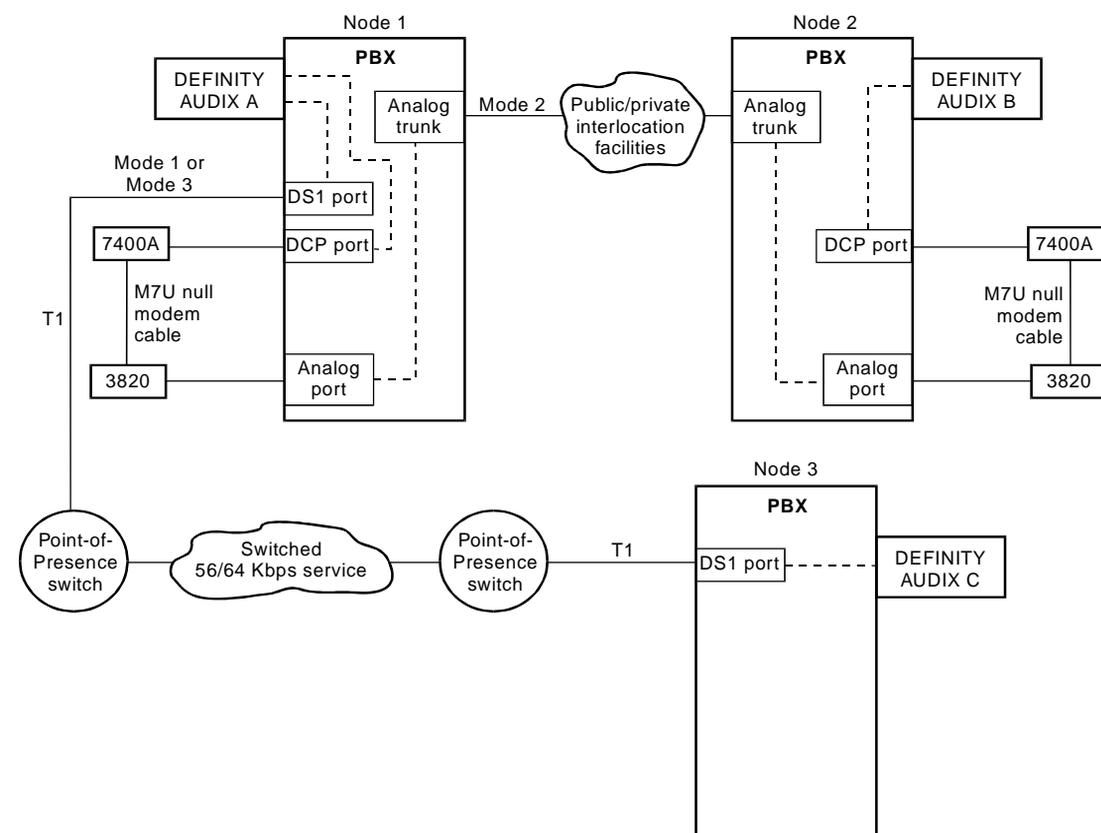
Figure 6-1. High-Speed and Low-Speed at the Same DEFINITY AUDIX System

The following figures show the Machine Profile screens on DEFINITY AUDIX A for
networking to DEFINITY AUDIX B and to DEFINITY AUDIX C.

The following two figures show the Machine Profile screen on DEFINITY AUDIX A
for networking to DEFINITY AUDIX B using a DCP Mode 2 connection. There are
two pages for this screen.

```
dac          Active    Alarms: M wA  Thresholds: none              Logins: 1
change machine dab                                                Page 1 of 2
                           MACHINE PROFILE

Machine Name: dab          Machine Type: audix        Location: remote

 Voiced Name? n         Extension Length: 5
    Voice ID: 3         Default Community: 1

ADDRESS RANGES
    Prefix                 Start Ext.  End Ext.        Warnings
1:  █                      00000       99999
2:
3:
4:
5:
6:
7:
8:
9:
10:



enter command: change machine dab
1Cancel    2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 6-2.   Machine Profile Screen for DEFINITY AUDIX B — Page 1

Page 2 of the Machine Profile screen shows the DCP Mode 2 Dial String. The
Data Rate is 9600 bps.

```
/dac          Active     Alarms: M wA  Thresholds: none              Logins: 1\
|change machine dab                                               Page 2 of 2|
                          MACHINE PROFILE

 NETWORK CONNECTION PARAMETERS
  Dial String: 4993"W"ATDT9,19086587100"W"""B"7104
 Modem String: █

 Data Rate: 9600        Password:

 Message Transmission Schedule (hh:mm)
   1.  Start: 00:00     End: 23:59     Interval: 00:05
   2.  Start:  :        End:  :        Interval:  :
   3.  Start:  :        End:  :        Interval:  :

 Send to Non-Administered Recipients? y

 Log Connect Events? y

 Network Turnaround? n

 Updates In? y  Out? y
|                                                                            |
| enter command: change machine dab                                          |
\1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage/
```

Figure 6-3.   Machine Profile Screen for DEFINITY AUDIX B — Page 2

The following two figures show the Machine Profile screen on DEFINITY AUDIX A
for networking to DEFINITY AUDIX C using a DCP Mode 3 connection. There are
two pages for this screen.

```
dac         Active    Alarms: M wA  Thresholds: none              Logins: 1
change machine daa                                              Page 1 of 2
                          MACHINE PROFILE

Machine Name: daa            Machine Type: audix        Location: remote

 Voiced Name? n         Extension Length: 4
    Voice ID: 2         Default Community: 1

ADDRESS RANGES
    Prefix                    Start Ext.   End Ext.       Warnings
 1: █                         0000         9999
 2:
 3:
 4:
 5:
 6:
 7:
 8:
 9:
10:


enter command: change machine daa
1Cancel    2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 6-4.   Machine Profile Screen for DEFINITY AUDIX C — Page 1

Page 2 of the Machine Profile screen shows the DCP Mode 3 Dial String for
dialing a local call over the public network (8 accesses a DS1 facility on
DEFINITY AUDIX A). The Data Rate is 64 Kpbs.

```
 dac         Active     Alarms: M wA  Thresholds: none            Logins: 1
 change machine daa                                              Page 2 of 2
                           MACHINE PROFILE

 NETWORK CONNECTION PARAMETERS
  Dial String: 763,2020
 Modem String: █

 Data Rate: 64000       Password:

 Message Transmission Schedule (hh:mm)
   1.  Start: 00:00      End: 23:59     Interval: 00:05
   2.  Start:   :        End:   :       Interval:   :
   3.  Start:   :        End:   :       Interval:   :

 Send to Non-Administered Recipients? n

 Log Connect Events? y

 Network Turnaround? n

 Updates In? n   Out? n


 enter command: change machine daa
 1Cancel    2Refresh  3Enter    4ClearFld 5Help    6Choices  7NextPage 8PrevPage
```

Figure 6-5.   Machine Profile Screen for DEFINITY AUDIX C — Page 2

Digital Network Planning

7

Before you install and administer DEFINITY AUDIX digital networking, you must plan the process. This chapter provides worksheets and information to help you collect, plan, and record digital networking information.

DEFINITY AUDIX digital networking requires two levels of planning:

- Prepurchase planning performed by the design center, the account team, and the customer

- Administration planning performed by the customer, the network administrator, and the account team

This chapter provides an overview of the design process and worksheets to aid you with DEFINITY AUDIX digital network planning. The worksheets presented in this chapter are an aid for interacting with your design center and for helping you understand the administration process. Work with the design center to complete the preplanning process. The Network Offer Definition provides product and service entitlements in addition to the pricing strategy.

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7 Digital Network Planning
Design Center

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Design Center

All digital networks must be designed and technically assured by the GBCS Design Center, International Technical Assistance Center (ITAC), or Centers of Excellence (COE). The customer, account team, and design center must work together to complete the preplanning process. Installation and maintenance support of digital networks will be offered only to those customers/account teams who follow this design process.

To develop a digital network design, the design center must gather or receive information about a customer site and the networking requirements of the customer. Some of the information gathered and provided by the design center includes:

- Information on installed DEFINITY AUDIX systems, Intuity AUDIX systems, AUDIX R1V5 or later systems, and 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 voice messages that will be exchanged remotely

  — The number of local subscribers

  — The average number of messages per-day, per-subscriber

  — The average length of voice messages

  — The percentages of voice messages and call answer messages

  — The percent of voice messages exchanged between each DEFINITY AUDIX system, Intuity 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 (Technical Support Center (TSC)/ITAC/COE).

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Planning with the Design Center/ITAC/COE

The procedure for planning for DEFINITY AUDIX digital networking is as follows:

- The Account Team verifies that correct software exists in both the PBX and the DEFINITY AUDIX system (R3.2 or later) or prepares to order the correct software.

- The Account Team completes the following and sends it to the design center/ITAC/COE:

    — E-1154, *Request for Sales and Design Center Support Services*

    — Worksheet A: *Determine Local and Remote Machine Information*

    — Worksheet B: *Network Planning for DEFINITY AUDIX*
      (Contact the design center if you have questions.)

    — Network Map

- The design center/ITAC/COE completes a 1495 response and sends it to the Account Team along with a request for any additional information.

- The design center/ITAC/COE completes the Installation Specification and returns it as specified by the Account Team. The Installation Specification must be provided to the technician for cutover.

- The design center/ITAC/COE provides a copy of the final Installation Specification to the appropriate remote support center for maintenance support purposes.

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REQUEST FOR SALES AND DESIGN CENTER SUPPORT SERVICES (E-1154)

SDSC FAX: 303-850-89322 **SDSC QUALNET/VNMA Fax to: 303-850-8791**

Check each service being requested and describe in Scope of Work below:

GENERAL INFORMATION: (Complete all fields)

CUSTOMER INFORMATION	ACCOUNT TEAM INFORMATION
Name:_____	Name:_____Title:_____
Address:_____	Address:_____
City:_____ST:_____ZIP:_____	City:_____ST:_____ZIP:_____
County:_____(REQUIRED for DWBS)	Tel. No:_____FAX:_____
IL:_____	e-mail id:_____
(REQUIRED FIELD: If multiple ILs are involved, list others below in Scope of Work.)	Check one preference for method of Notification of Assignment of this Request.Telephone Call
	❏ Telephone Call ❏ E-mail message
Cust. Contact Name:_____	MBO Code to be Charged:
Cust. Contact Tel. No._____	(If multiple MBO Codes are to be charged, list below in Scope of Work.)
❏ Mark if Customer Permission for Switch Access has been granted.	
MBO Project No.:_____	Alternate Contact:_____Title:_____
Project Manager:_____	
Tel. No.:_____	Tel. No._____

❏ **PRE CONTRACT OR ❏ POST CONTRACT.** **ATTOMS/DOSS Ref No's**

Please list model and version of ALL Products (Switches and Adjuncts), both existing and/or proposed. Also specify the number of nodes in an existing and/or proposed network plus hardware connectivity (digital/analog) and attach a diagram.

❏ New ❏ Add ❏ Upgrade ❏ RFP ❏ Controlled Introduction

Scope of Work:_____
_____
_____

Requested Due Date for Technical Assurance:_____ ❏ Written Response ❏ Verbal Response
Please Note: 5 Days = Standard Interval for Technical Assurance. ASAP or blank Requested Due Date = 5 Day Interval
Large/Complex requests require negotiation of Technical Assurance Due Date.

Requested Due Date For Floorplans: _____ For Specifications, other Deliverables:_____

MOJ Date: _____ **Cutover Date: _____**

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Worksheet A: Determine Local and Remote Switch Information

Use this worksheet to collect information about the switches in the network.

Date   _____

Prepared By   _____

Contact Telephone Number   _____

To design a successful digital network, you must gather switch information for the local DEFINITY 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 voice messages. Use an alphanumeric name between 1 and 8 characters (lower case, no spaces, no special characters).

Machine Type: Enter *DEFINITY AUDIX*, *AUDIX R1,* or *Intuity.* 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.

- Chapter 5, "DCP Mode 1 — 56 Kbps", section Switch (or Customer) Requirements for DCP Mode 1

- Chapter 4, "DCP Mode 2 — 9600 or 19,200 bps", section Switch Hardware Requirements for DCP Mode 2

- Chapter 3, "DCP Mode 3 — 64 Kbps", section Switch (or Customer) Requirements for DCP Mode 3

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Machine Name	Machine Type	Machine Location	Switch Type	Software Generic	Installed Boards

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Worksheet B: Network Planning for DEFINITY AUDIX

Machine Name_____   Machine Password_____
        (max. of 8 char)   (max of 10 char)

	Prefix	Starting Extension	Ending Extension
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Class of Service for Networking ports:_____ (Use a separate class of service with data privacy AND NO RESTRICTIONS.)

56K or 64K (DCP Mode 1 or DCP Mode 3)

Extensions:
64K or 56K connectivity requires one or two DCP extension numbers.
      DCP Extension for Port One:_____ (DID___ if only one port)
      DCP Extension for Port Two:_____
Equipment Locations:
      Port One   ____-____-____-____ (MFB TN566B, TN567, or TN568 location)
      Port Two   ____-____-____-____ (MFB TN566B, or TN567)

If you are using two 56K or two 64K ports, then provide:
      Hunt Group Number _____ Hunt Group Extension _____
System 75/G1/G3 Extension Number of Hunt Group must be DID for access.

Dial String:
The Dial String to route messages out of this DEFINITY AUDIX system may need to incorporate various switch routing options. Please identify which switch option this design will implement and the trunk or feature access code being used to accomplish this. (Mark to the left of the category with an "X".)

_____ DCS; Main/Satellite; Multi-digit Steering, etc. (Incoming ext numbers will be utilized)
_____ ETN/PNA (FAC _____)   _____ARS (FAC _____)
_____ Dedicated (Static) Trunk Group (TAC _____) _____OTHER (TAC/FAC _____)

For those routing options which utilize a feature access code or an extension number only, please identify the trunk group number and trunk access code of the facility providing the transmission path:
TG _____ TAC_____

Switchroom Telephone Number: _____
DEF/AUDIX Remote Maintenance Number. _____ (Preferably through INADS)

Low Speed (DCP Mode 2)

If you are using two low-speed ports (9600 bps or 19,200 bps), then provide a hunt group
for each pair of modems, ADUs, and 7400As below.
The System 75/G1/G3 Extension Number for the Hunt Group must be DID for access.
Answer all questions below.

For low speed, you must have one the following.

- **Either**
  Extensions: 7400A
  Note: If using 7400A, you must supply one or two extensions on TN754s.
       7400A Extension Numbers _____

  Equipment Locations: ____-____-____-____-____ (TN754 for 7400A)
                           ____-____-____-____-____ (TN754 for 7400A)

  If more than one ext? **Extension Number of Hunt Group**_____

- **OR**
  Extensions: ADU
  Note: If using ADUs, you must supply one or two Extensions on TN726s.
       ADU Extension Numbers:_____

  Equipment Locations: ____-____-____-____-____ (TN726 for ADU)
                       ____-____-____-____-____ (TN726 for ADU)

  If more than one ext? **Extension Number of Hunt Group**_____

You must have modems.

Modems: 3820 for U.S. or other for outside U.S. (Type?_____)
     Modem Extension Numbers: _____(DID___if only one PORT)

Equipment Locations: ____-____-____-____-____ (TN746B for ADU)
                     ____-____-____-____-____ (TN746B for ADU)

If more than one ext? **Extension Number of Hunt Group must be DID for
access** _____

You must have networking ports.

One or two DCP extension numbers.
DCP Extension for Port One: _____
DCP Extension for Port Two: _____
        Port One   ____-____-____-____-____ (TN566B, TN567, or TN568 location)
        Port Two   ____-____-____-____-____ (TN566B or TN567 location)
If more than one ext? **Extension Number of Hunt Group must be DID for access**
_____

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Network Map

Provide a network map. Include the following information:

- 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 2 (9600 or 19,200 bps), or DCP Mode 3 (64 Kbps).

- Identify the number of voice mail users at each node.

- Identify each AUDIX Machine Name as the customer intends 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.

The following two figures show examples of network maps.

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The following example network map shows three DEFINITY AUDIX systems networked together.
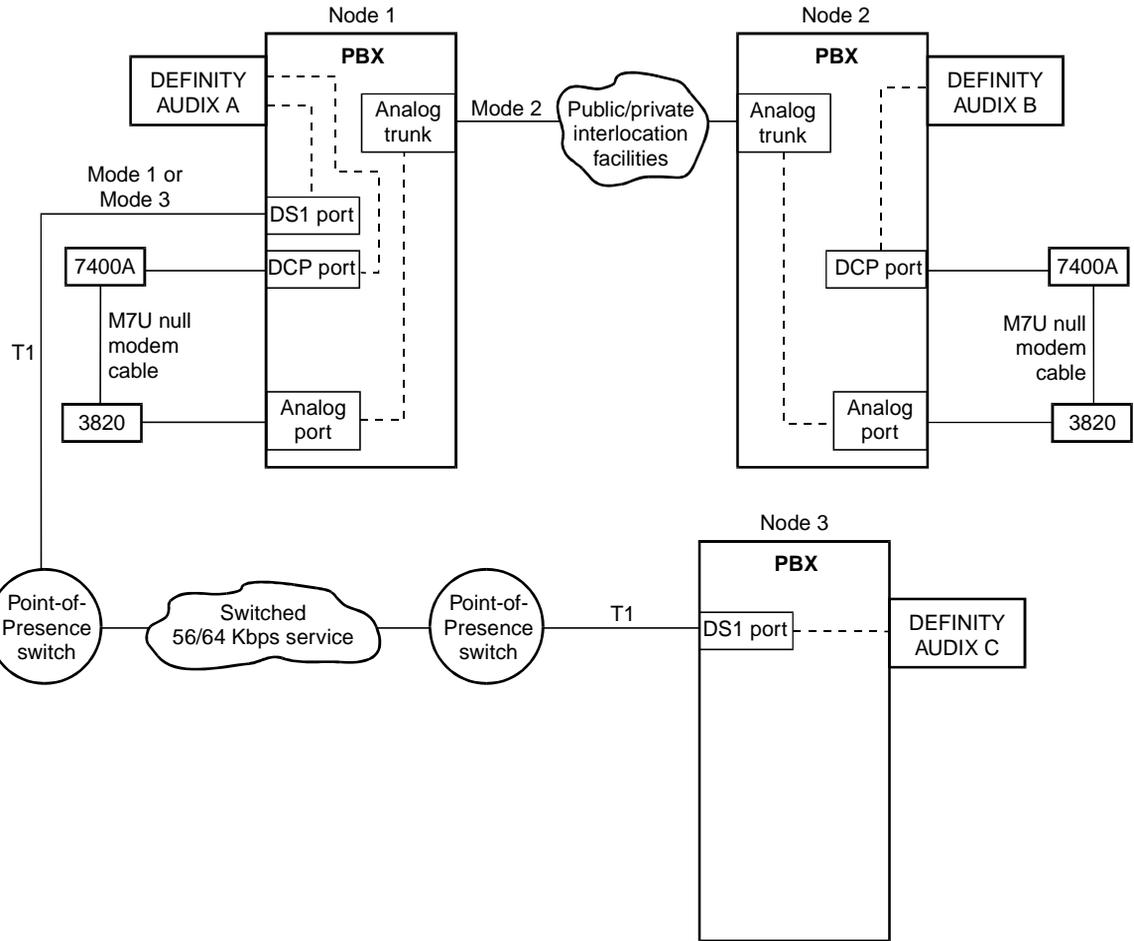
Figure 7-1.   Network Map — Three Networked DEFINITY AUDIX Systems

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The following example network map shows a DEFINITY AUDIX system connected to both an AUDIX R1 system and an Intuity AUDIX system.
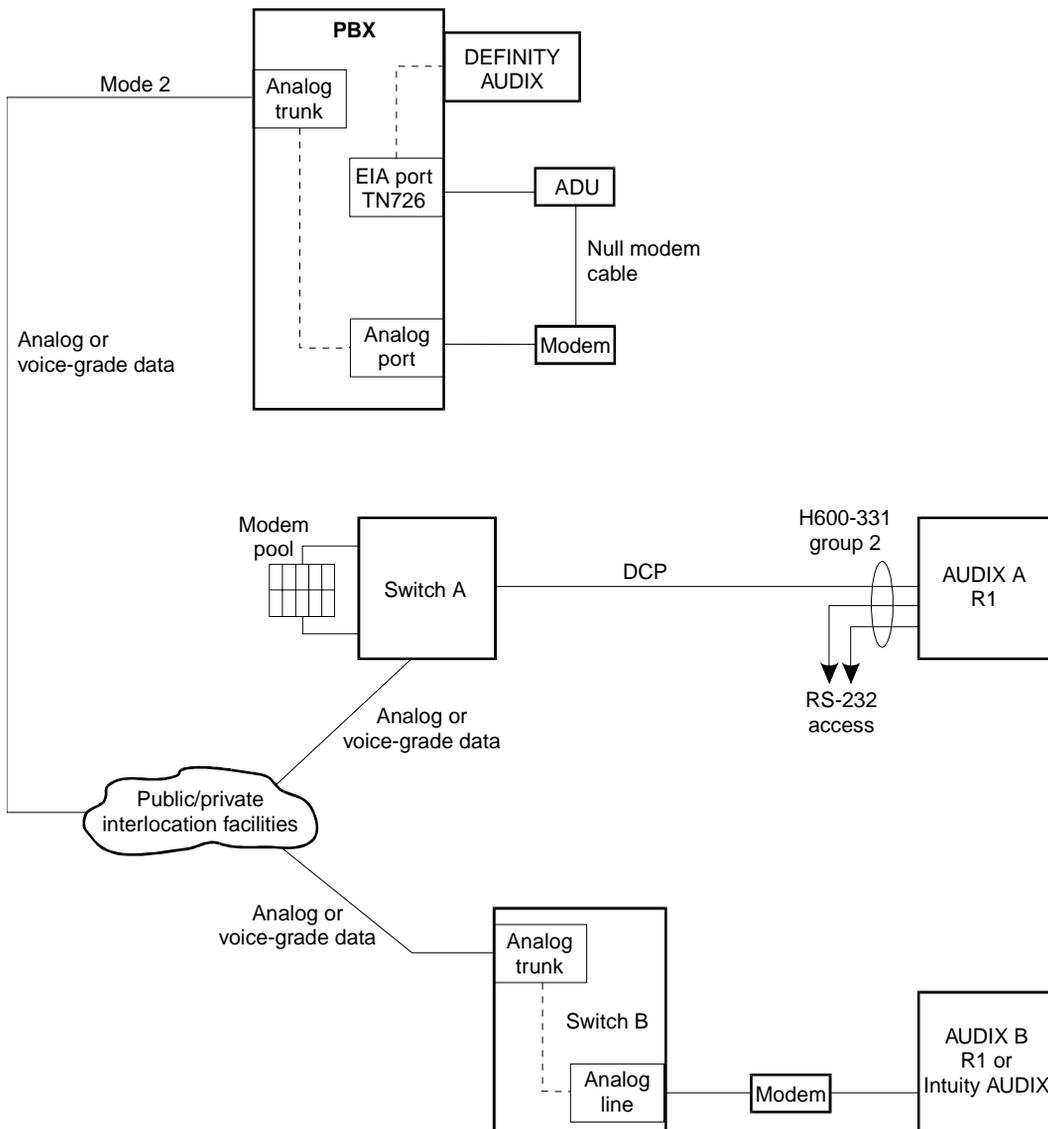
Figure 7-2.   Network Map — DEFINITY AUDIX, Intuity AUDIX, and AUDIX R1

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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.

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Worksheet C: Determine the Digital Networking Administration and Training Personnel

As the first planning task, select a person to manage the administration and updates of the network. Additionally, contact each remote network node location and find out the network administrator for that system. Record the information on the worksheet. This worksheet will provide you with a quick reference if you need to contact a remote system administrator..

Date _____

Prepared By _____

Contact Telephone Number _____

Machine Name	Machine Location	Network Administrator	Administrator's Contact Number
Local Machine:			

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Machine Name	Machine Location	Network Administrator	Administrator's Contact Number

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Worksheet D: Define Network Group

Use this worksheet to identify the digital networking ports and extensions. The networking ports defined on this worksheet must match the networking ports defined for the switch. The design center will include a Network Group screen in the Installation Specification. .

Date	_____
Prepared By	_____
Contact Telephone Number	_____

Field	Port 1	Port 2
Member. Indicates networking port 1 or networking port 2.		
Port. Enter the port location of the corresponding voice port. Network port 1 has the same port location as voice port 1 on the Voice Group screen. Network port 2 has the same port location as voice port 2 on the Voice Group screen. This is the digital port equipment location on the switch of the DEFINITY AUDIX multifunction board (MFB), or for release 4.0 the TN568. For example, if the DEFINITY AUDIX MFB is in module 2, carrier B, slot 07, the first port location is 2B0701 (the last two digits are the port number).		
Extension. The extensions for networking ports 1 and 2 must be unique extensions from the PBX dial plan and must match the extensions administered on the switch for the networking ports.		

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Worksheet E: Define Local Machine Profile

Use this worksheet to collect information for the local DEFINITY AUDIX system. The design center will include a local Machine Profile screen in the Installation Specification..

Date	_____
Prepared By	_____
Contact Telephone Number	_____

Field	Default	Your Entry
Machine Name. Displays the name of the local machine. Use an alphanumeric name between 1 and 8 characters (lower case, no spaces, no special characters).		
Machine Type		audix
Location	local	local
Voiced Name. The system sets this field to **y** when a user with announcement permission records a name for the local system.	n	display only
Extension Length. The length of extensions on the local system.		
Voice ID. Display-only field.	display only	display only
Default Community. The default community number to be used for the sending restrictions feature. A *community* represents a group of subscribers assigned certain messaging privileges and restrictions. The feature can be used to group types of subscribers. A group can be restricted from receiving voice messages or from sending voice messages to other groups. Community ID is the number that identifies the community to which the remote subscriber belongs. The System Parameters Sending Restrictions screen specifies a matrix of sending restriction communities.	1	

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Field	Default	Your Entry
Prefix. Enter the prefix digits for this local system. A subscriber enters the prefix before the remote subscriber's extension when addressing voice messages. To make the task simple for the subscriber, use a short, descriptive prefix. The total length of the prefix and extensions must be < 25 characters. The prefix is used only by the DEFINITY AUDIX system to identify subscribers. It is not used for dialing out, so it does not need to match an area/office code.		
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.		
Warning	display only	display only
Dial String. *This field is only used when this system calls itself for testing purposes.* Enter the dial string of the hunt group number for the digital networking port hunt group set up during the Switch Administration described earlier in this chapter. The DEFINITY AUDIX system will use this hunt group number to do a test machine for the digital networking ports. If there is only one digital networking port, leave this field blank.		
Modem String. This field is currently not being used.	no entry	no entry
Data Rate. *This field is used only when this system calls itself for testing purposes.* Enter the data rate used by the digital networking ports for test machine on the local DEFINITY AUDIX system (**9600**, **19200**, **56000**, or **64000**). This data rate is used to select a network group for outgoing calls, so this entry should match a data rate administered for a network group on the Network Group screen.		
Password. Select a five- to ten-character password for the local machine (no spaces or special characters).		
Log Connect Events. Enter **y** if this local DEFINITY AUDIX system will create an entry in the administration log for each network connection event (connections and failures) when calling any remote DEFINITY AUDIX, Intuity AUDIX, or AUDIX R1 systems. You may want to set to **n** if this will create too many entries in the administration log.	n	

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Field	Default	Your Entry
Network Turnaround. For initial administration, leave this field set to **n** since this will simplify testing. After testing, enable the feature if desired. Refer to Chapter 10, "Ongoing Administration", for more information on Network Turnaround.	n	
Updates In? For now, leave this field set to **n** since this will simplify testing. After testing, enable the feature if desired. Refer to Chapter 10, "Ongoing Administration", for more information on Remote Updates.	n	
Updates Out? For now, leave this field set to **n** since this will simplify testing. After testing, enable the feature if desired. Refer to Chapter 10, "Ongoing Administration", for more information on Remote Updates.	n	
Allow Automatic Full Updates? For now, leave this field set to **n** since this will simplify testing. After testing is complete, enter **y** to automatically generate requests for full updates from remote systems. Enter **n** to halt automatic full updates from this DEFINITY AUDIX system.	n	

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Worksheet F: Define Remote Machine Profile

Use this worksheet to collect information for each remote DEFINITY AUDIX system, Intuity 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	_____

Field	Default	Your Entry
Machine Name. Displays the name of the remote machine. Use an alphanumeric name between 1 and 8 characters (lower case, no spaces, no special characters).		
Machine Type. Enter **audix** for the DEFINITY AUDIX system and the Intuity AUDIX system. Enter **r1aud** for the AUDIX R1 system.		
Location	remote	remote
Voiced Name. The system sets this field to **y** when a user with announcement permission records a name for the remote system.	n	display only
Extension Length. The length of extensions on the remote system.		
Voice ID. Display-only field.	display only	display only
Default Community. The default community number to be used for the sending restrictions feature. A *community* represents a group of subscribers assigned certain messaging privileges and restrictions. The feature can be used to group types of subscribers. A group can be restricted from receiving voice messages or from sending voice messages to other groups. Community ID is the number that identifies the community to which the remote subscriber belongs. The System Parameters Sending Restrictions screen specifies a matrix of sending restriction communities.	1	

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Field	Default	Your Entry
Prefix. Enter the prefix digits for the remote system. A subscriber enters the prefix before the remote subscriber's extension when addressing voice messages. To make the task simple for the subscriber, use a short, descriptive prefix. The total length of the prefix and extensions must be < 25 characters. The prefix is used only by the DEFINITY AUDIX system to identify subscribers. It is not used for dialing out, so it does not need to match an area/office code.		
Start Ext. Starting extensions for the ranges of telephone numbers used on this remote system.		
End Ext. Ending extensions for the ranges of telephone numbers used on this remote system.		
Warning	display only	display only

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Field	Default	Your Entry
Dial String. Enter the string of digits used when the DEFINITY AUDIX system dials the remote system to establish a networking call. Valid entries are 0 to 65 alphanumeric characters including the following: ■ digits ■ upper and lower case letters ■ #, *, +, %, (), -, spaces, ',' (2-second pause) ■ ATDT (attention command of the modem). If you dial a number to reach an outside local line, such as 9, include the attention code, *ATDT*, and the outside access number in the dial string. Use "," to create a pause for dial tone. Example *ATDT 9,2346000* Character strings that have special meaning within the DEFINITY AUDIX system must be enclosed within double quotes. Valid special strings are: "W" — wait for another dial prompt "B" — replace with a BREAK character "I" — replace with modem initialization string (not used at this time) (for DCP Mode 2, ATDT causes the modem to go off-hook and dial the number) Refer to Chapter 4, "DCP Mode 2 — 9600 or 19,200 bps". Multistage Dialing provides a description of the dialing stages needed for DCP Mode 2. Hunt Groups in Switch Administration Requirements for DCP Mode 2 describes using DCP Mode 2 hunt groups in the Dial String. Refer to Chapter 9, "Initial Network Administration and Acceptance Tests", for examples of Dial Strings.		
Modem String. This field is currently not being used.	no entry	no entry
Data Rate. Enter the data rate to be used for an outgoing network call to this DEFINITY AUDIX system. DCP Mode 1 = **56000** Kbps DCP Mode 2 = **9600** or **19200** bps DCP Mode 3 = **64000** Kbps This data rate is used to select a network group for outgoing calls, so this should match a data rate administered for a network group on the Network Group screen.		

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Field	Default	Your Entry
Password. Enter the password the remote system must use when establishing a networking connection to the local DEFINITY AUDIX system.		
Message Transmission Schedule. *Start Time* – Enter the starting time for a message transmission period to the remote system (such as 00:01 for one minute after midnight).	00:00	
End Time – Enter the ending time for a message transmission period to the remote system such as 23:59 for one minute before midnight).	23:59	
Interval – Enter the interval at which the local DEFINITY AUDIX system will call this remote system (such as 00:05 for every 5 minutes). The DEFINITY 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. It is recommended that you set up different start times and intervals for each remote system so the local DEFINITY AUDIX system is not trying to call all remote systems at the same time.	00:05	
Send to Non-Administered Recipients. Enter **y** if the DEFINITY AUDIX system will attempt to deliver messages to nonadministered remote recipients. Enter **n** if messages cannot be sent to nonadministered recipients.	n	
Log Connect Events. Enter **y** if this local DEFINITY AUDIX system will create an entry in the administration log for each network connection event (connections and failures) when calling any remote DEFINITY AUDIX, Intuity AUDIX, or AUDIX R1 systems. This field must be set to **y** on the local Machine Profile screen. You may want to set to **n** if this will create too many entries in the administration log.	n	
Network Turnaround. For initial administration, leave this field set to **n** since this will simplify testing. After testing, enable the feature if desired. Refer to Table 7-1, Remote Machine Update Field Values and Actions, for more information on Network Turnaround.	n	

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Field	Default	Your Entry
Updates In? For now, leave this field set to **n** since this will simplify testing. After testing, enable the feature if desired. Refer to Table 7-1, Remote Machine Update Field Values and Actions, for more information on Remote Updates.	n	
Updates Out? For now, leave this field set to **n** since this will simplify testing. After testing, enable the feature if desired. Refer to Table 7-1, Remote Machine Update Field Values and Actions, for more information on Remote Updates.	n	

The *Send to Non-Administered Recipients*, *Updates In*, and *Updates Out* fields work together to control the remote updates feature. Send to Non-Administered Recipients allows the DEFINITY AUDIX system to attempt to send messages addressed to subscribers who are not administered in the local database. For example, if a local subscriber addresses a message to a remote subscriber who is not in the database, the system uses the prefix and the address range and attempts to find a remote subscriber who matches.

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Table 7-1. **Remote Machine Update Field Values and Actions**

Remote Machine Profile Fields		
Updates In	**Updates Out**	**Remote Update Action**
y	y	The local machine accepts updated database information from any remote machines that have their Updates Out field set to y.
		The local machine sends updated database information to any remote machines that have their Updates In field set to y.
y	n	The local machine accepts updated database information from any remote machines that have their Updates Out field set to y.
		The local machine will not send updated database information to this remote machine but can get information.
n	y	The local machine does not accept updated database information from remote machines.
		The local machine sends updated database information to remote machines.
n	n	The local machine does not accept updated information from remote machines.
		The local machine does not send updated database information to any remote machines.

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Worksheet G: Determine Remote Subscriber Information

If you choose not to use the Remote Updates feature, you need to collect information for each remote subscriber. Use this worksheet to collect the information..

Date   _____

Prepared By   _____

Contact Telephone Number   _____

Before recording information, make several copies of this worksheet.

Remote Subscriber Name (last name, first name)	Remote Machine Name(s)	Remote Extension	Default Community
Test Subscriber1			
Test Subscriber2			

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Remote Subscriber Name (last name, first name)	Remote Machine Name(s)	Remote Extension	Default Community

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Worksheet H: Administer Digital Networking Ports

Date _____

Prepared By _____

Contact Telephone Number _____

Administer a Data Module screen on the switch for each networking port. For the first networking port, administer the Data Module screen for voice port 1. For the second networking port, administer the Data Module screen for voice port 2.

The following information is required for administering digital networking port 1.

Assign a data extension (Enter the data extension on the data module screen for voice port one)	
Enter a name that identifies the networking port	
Enter a Class of Restriction (COR)	
Enter a Class of Service (COS) (Use a separate class of service with data privacy and no restrictions.)	
ITC (G3V2, G3V3, G3V4)	restricted

The following information is required for administering digital networking port 2, if one is available.

Assign a data extension (Enter the data extension on the data module screen for voice port one)	
Enter a name that identifies the networking port	
Enter a Class of Restriction (COR) Enter a Class of Service (COS) (Use a separate class of service with data privacy and no restrictions.)	

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Worksheet I: Assign a Hunt Group for the Digital Networking Ports

The following information is required to define a hunt group for the digital networking ports. If there is only one digital networking port, a hunt group is not needed..

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 DEFINITY AUDIX system.)	
Group Type	ucd
Enter a hunt group name that identifies the digital networking ports.	
Enter a class of restriction for the digital networking ports.	
Message Center	none
ACD	none
Queue	n
Vector	n
Group Member Assignments (Enter the extensions of the two networking ports.)	Extension 1 Extension 2

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DCP Mode 2 Planning Worksheets

Complete the following worksheets for any DCP Mode 2 connections.

Worksheet J: Administer a 7400A Data Module and/or ADU

Date   _____

Prepared By   _____

Contact Telephone Number   _____

For each 7400A data module or ADU used in a DCP Mode 2 modem/data module arrangement, administer a Data Extension screen. Complete a worksheet for each data module or ADU. The information in the following table is required to administer a 7400A data module or ADU.

Type field Enter **pdm** for a 7400A data module, or enter **data-line** for an ADU	
Port field Enter the port location of the TN754 port to which the data module connects or the TN726 port to which the ADU connects (such as 2B0701 [module 2, carrier B. slot 07, port 01])	
Name field Enter an identifying name for the data module or ADU (such as dignet datmod1 or dignet ADU-1).	
Class of Service	
Class of Restriction	
If Type is pdm: Remote Loop-Around Test Secondary Data Module	n n
Connected to	dte
ITC (G3V2, G3V3, G3V4)	restricted

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The following additional information is needed for each ADU..

KYBD Dialing	y
Configuration	n
Busy Out	y
Low	n
Speed Enter 9600 bps or 19,200 bps	
Autoadjust	n
Permit Mismatch	n
Dial Echoing	y
Disconnect Sequence	two-breaks
Answer Text	y
Parity	space
Connected Indication	y

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Worksheet K: Administer a Modem

Date   _____

Prepared By   _____

Contact Telephone Number   _____

For each modem used in a DCP Mode 2 modem/data module arrangement, administer a Station screen. Complete a worksheet for each modem.

Port field	
Name field Enter a name that identifies the modem (such as dignet modem1).	
Class of Service	
Class of Restriction	
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

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Worksheet L: Assign the Hunt Group for Data Modules, ADUs, and Modems

Date _____

Prepared By _____

Contact Telephone Number _____

Assign a hunt group for each pair of data modules, ADUs, or modems. Complete a worksheet for each hunt group. .

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 data module ports, the ADU ports, and 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 the data modules, ADUs, or modems (such as AUDIX Data Mods, AUDIX Modems, or AUDIX ADUs).	
Enter a class of restriction for the data modules, ADUs, or modems.	
Message Center	none
LWC Reception	none
ACD	n
Queue	n
Vector	n
Group Member Assignments (Enter the extensions of the two data modules, ADUs, or modems.)	Extension 1 Extension 2

Hardware Installation for DCP Mode 2

8

This chapter describes the hardware installation and connection testing for DCP Mode 2 networking connections. The following information is also included:

- Modem front panel settings for the Paradyne Comsphere 3800 series modem and a procedure for configuring the front panel settings

- 7400A option settings which need to be set using the 7400A front panel

DEFINITY AUDIX DCP Mode 2 uses one of the following types of modem/data module arrangements:

- DCP port (TN754), 7400A data module, modem, and analog port

- Electronic Industries Association (EIA port), asynchronous data unit (ADU), modem, and analog port

Hardware Installation Using a 7400A Data Module

You need the following equipment:

- 7400A Data Module and 7400A power supply

- M7U null-modem cable (male-male) (3 feet)

- 103A or wall jack (2 for each modem/data module arrangement)

- D8W cord (14 feet)

- Compatible modem (refer to Chapter 4, "DCP Mode 2 — 9600 or 19,200 bps", for a list of compatible modems)

  $\Longrightarrow$ **NOTE:**
  Refer to Figure 8-1, 7400A Data Module in a DCP Mode 2 Modem/Data Module Arrangement.

1. Use the 7400A front panel to set the 7400A options. Refer to 7400A Option Settings later in this chapter.

2. Use a D8W wall cord to connect the 7400A Data Module to the 103A or wall jack.

3. To connect the 7400A Data Module to the compatible modem, use an M7U null-modem cable (male-male).

4. Use a 2/4 Wire Line Cord to connect the Paradyne Modem to the 103A or wall jack

This completes the hardware installation using a 7400A Data Module.

The following tasks in Chapter 9, "Initial Network Administration and Acceptance Tests", need to be completed before the installation is complete:

- Task 9: Administer Remote System(s) on the Local DEFINITY AUDIX System.

- Task 10: Administer the DEFINITY AUDIX on the Remote Machine(s)

- Task 11: Test the Connection to Each Remote System

Complete Chapter 9.
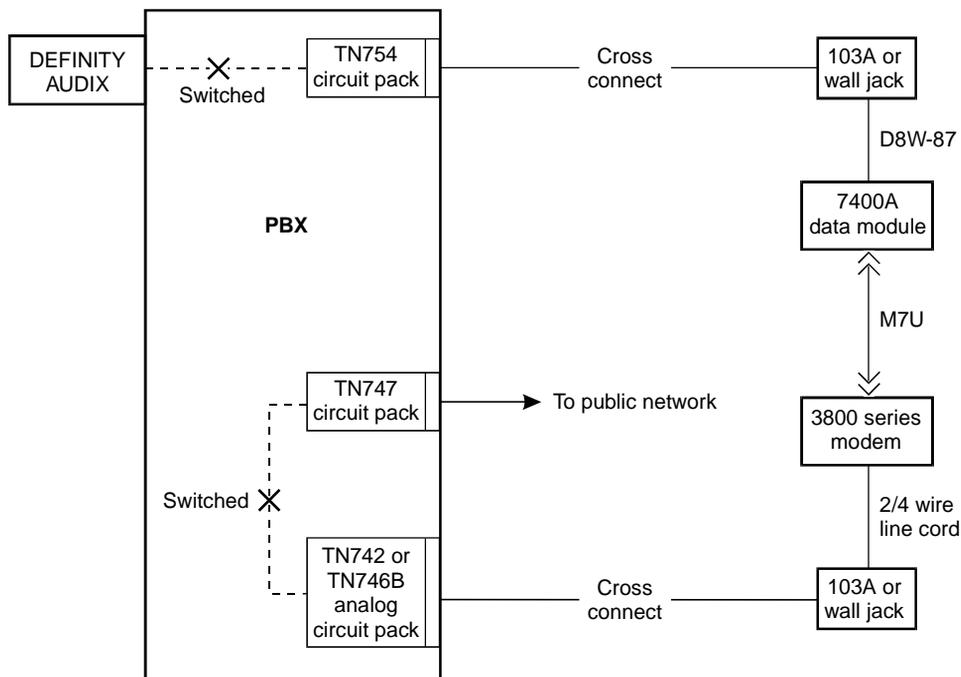
Figure 8-**1.** **7400A Data Module in a DCP Mode 2 Modem/Data Module Arrangement**

Hardware Installation Using an ADU

You need the following equipment:

- ADU (Z3A-2)

    M8J-82 cable is included.

- H-600-258, Group 1 null-modem cable (male-female) (12 inches)

- 103A wall jack (2 for each modem/data module arrangement)

- D8W cord (14 feet)

- Compatible modem (refer to Chapter 4, "DCP Mode 2 — 9600 or 19,200 bps", for a list of compatible modems)

⟹ NOTE:

Refer to Figure 8-2, ADU in a DCP Mode 2 Modem/Data Module Arrangement.

1. Use a D8W wall cord to connect the ADU to the 103A or wall jack.
2. Connect one end of the M8J-82 cable that came with the ADU to the ADU.
3. Connect the male end of the M8J-82 cable to the female end of the H-600-258, Group 1 cable.
4. Connect the male end of the H-600-258, Group 1 cable to the modem.
5. Use a 2/4 Wire Line Cord to connect the Paradyne Modem to the 103A or wall jack.

This completes the hardware installation using an ADU.

The following tasks in Chapter 9, "Initial Network Administration and Acceptance Tests", need to be completed before the installation is complete:

- Task 9: Administer Remote System(s) on the Local DEFINITY AUDIX System.

- Task 10: Administer the DEFINITY AUDIX on the Remote Machine(s)

- Task 11: Test the Connection to Each Remote System

Complete Chapter 9.
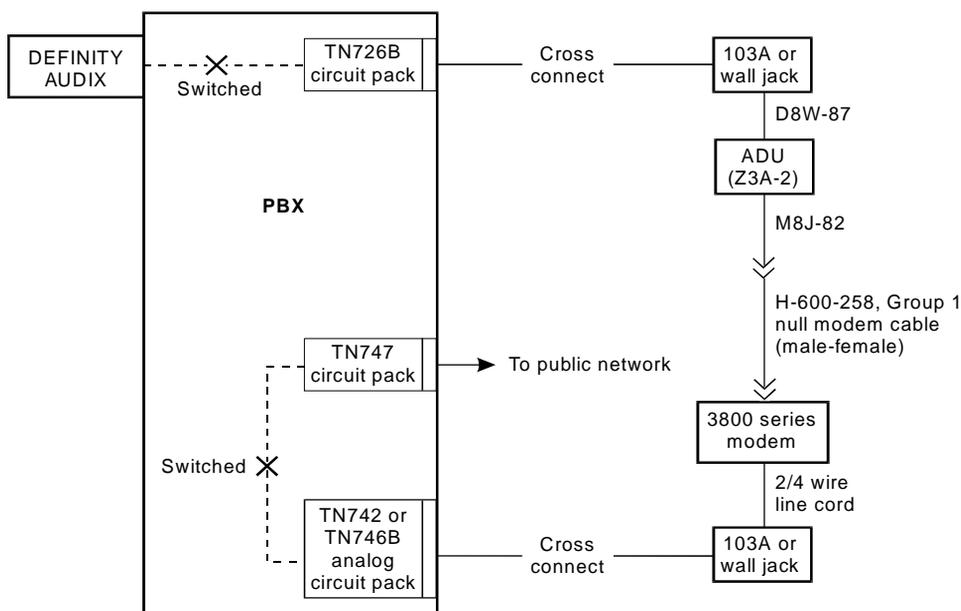
Figure 8-**2.** **ADU in a DCP Mode 2 Modem/Data Module Arrangement**

Configuring the Paradyne Comsphere 3810/3820 Series Modems using the Diagnostic Control Panel

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. To configure the Comsphere 3810/3820 series modems for digital networking, you must program the modem using the DCP.

To configure the Comsphere modem to work with DEFINITY AUDIX digital networking, perform the following steps:

1. On the DCP, press the ▶ key until `Configure` comes into view.

2. Press the function key directly under Configure to select the Configure menu.

   The LCD displays `Ld EditArea frm`.

3. Press the ▶ key until `Factory` comes into view.

4. Press the function key directly under Factory to display the factory preset configurations.

5. Press the function key directly under `Async Dial`.

6. The LCD displays the following lines:

   Choose Function
   `Edit    Save`

7. Press the function key directly under the Edit option.

   The LCD displays the following lines:

   ```
   Edit StrapGroup
   DTE_Interface
   ```

   The DTE_Interface submenu option contains settings for the EIA-232-D (ITU V.24) and for the asynchronous character formation information used to maintain the connection and to transmit data between the modem and the 7400A or ADU.

8. Press the function key directly under the DTE_Interface submenu. The LCD displays the following lines:

   ```
   Async/Sync Mode
   Nxt     Async
   ```

9. The Async mode is the correct setting. Press the function key directly under Nxt to retain this setting.

   The LCD displays the following lines:

   ```
   Async DTE Rate
   19200
   ```

10. If 19200 bps is the setting for DCP Mode 2 digital networking, press the function key directly under the Nxt option.

If 9600 bps is the digital networking speed:

1. Press the ▶ key until `9600` displays on the LCD.

2. Press the function key directly under the 9600 option.

3. Press the function key directly under Nxt to save this setting. The LCD displays the following lines:

```
Asyn #Data Bits
Nxt     8
```

11. Continue to configure the DTE_Interface options by using the settings described in Table 8-1, Paradyne Comsphere 3810plus/3820plus/3910 Modem Settings, for the Comsphere 3810plus/3820plus/3910 modems and Table 8-2, Paradyne Comsphere 3810/3820 Modem Settings, for the Comsphere 3810/3820 modems.

➡ **NOTE:**
Some of the settings listed in Table 8-1 and Table 8-2 may not be present in your modem, or there may be settings that are not listed in the tables. Paradyne periodically updates their modem firmware with new options so your firmware may differ from the firmware that is depicted in Table 8-1 and Table 8-2. All options and settings that are required for DEFINITY AUDIX digital networking are present in all firmware releases.

Use the following procedure:

■ If the setting is not in boldface type, press the function key directly under Nxt to continue to the next menu item.

■ For the boldface items, use the following procedure:

1. Press the ▶ key until the option displays on the LCD.

2. Press the function key directly under the option.

3. Press the function key directly under Nxt to save this setting.

■ The last option in the DTE_Interface Menu has an End function instead of the Nxt function. Press the function key directly under End. This returns you to the Edit StrapGroup menu.

12. At the `Edit StrapGroup` menu, press the ▶ key to move to the DTE_Dialer submenu. Press the function key directly under DTE_Dialer, and configure the options as shown in Table 8-1, Paradyne Comsphere 3810plus/3820plus/3910 Modem Settings, for the Comsphere 3810plus/3820plus/3910 modems and Table 8-2, Paradyne Comsphere 3810/3820 Modem Settings, for the Comsphere 3810/3820 modems.

Use the following procedure:

■ If the setting is not in boldface type, press the Nxt function key to continue to the next menu item.

■ For the boldface items, use the following procedure:

1. Press the ▶ key until the option displays on the LCD.

2. Press the function key directly under the option.

3. Press the function key directly under Nxt to save this setting.

For the option `AT Escape Char` under the DTE_Dialer submenu, use the following procedure to change the option to 128 for example. The ▶ and ◀ keys move the cursor to the right or left. The F2 key increases the digit.

1. The cursor is under the first digit. Press the F2 key until 1 displays.

2. Press the ▶ key to move the cursor to the second digit.

3. Press the F2 key until 2 displays.

4. Press the ▶ key to move the cursor to the third digit.

5. Press the F2 key until 8 displays.

6. Press the function key directly under ASCI to save the number.

7. Press the function key under Nxt to move to the next option.

■ The last option in the menu has an `End` function instead of the Nxt function. Press the function key directly under End. This returns you to the Edit StrapGroup menu.

13. After setting the options for the DTE_Dialer sub menu, continue to set the options for the Line_Dialer, Dial Line, V42/MNP/Buffer, and Test and Misc submenus.

At the `Edit StrapGroup` menu, press the ▶ key to move to the desired submenu. Press the function key directly under the displayed submenu, and configure the options as shown in <u>Table 8-1</u>, <u>Paradyne Comsphere 3810plus/3820plus/3910 Modem Settings</u>, for the Comsphere 3810plus/3820plus/3910 modems and<u>Table 8-2</u>, <u>Paradyne Comsphere 3810/3820 Modem Settings</u>, for the Comsphere 3810/3820 modems.

Use the following procedure:

- If the setting is not in boldface type, press the Nxt function key to continue to the next menu item.

- For the boldface items, use the following procedure:

  1. Press the ▶ key until the option displays on the LCD.

  2. Press the function key directly under the option.

  3. Press the function key directly under Nxt to save this setting.

- The last option in the menu has an `End` function instead of the Nxt function. Press the function key directly under End. This returns you to the Edit StrapGroup menu.

14. When you have set all options in all the submenus and the LCD display shows the Edit StrapGroup menu, press the left ▲ key. The LCD displays the following lines:

```
Choose Function
Edit        Save
```

Press the function key directly under the Save option. The LCD displays the following lines:

```
Sav EditArea to
Active(Saved)
```

15. Press the function key directly under the Active(Saved) option. This saves the settings and completes the configuration of the modem. The LCD displays `Command Complete`.

16. Press the ▲ key to return the modem to the normal operating position. For example:

```
Idle: 9600
Call_Setup
```

To Change any settings at a later date, repeat the above procedure. In step 3, select Activ(Operating) instead of Factory.

Paradyne Comsphere 3810plus/3820plus/3910 Front Panel Settings

The following table shows the front panel settings for the Paradyne Comsphere 3810plus, 3820plus, and 3910 modems.

Table 8-1.   Paradyne Comsphere 3810plus/3820plus/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 ASCI**	AT command s2=128
Escape GuardTim	1 sec	
BreakForceEscap	Disable	
CommandCharEcho	Enable	
CarriageRtnChar	013 ASCI	
Backspace Char	008 ASCI	

DTE_Dialer	Setting	Notes
Linefeed Char	010 ASCI	
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 Timout	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 Contrl 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	
RemAccssPasswrd	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

The following table shows the front panel settings for the Paradyne Comsphere 3810 and 3820 modems.

Table 8-2. 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 ASCI**	AT command s2=128
Escape GuardTim	1 sec	
BreakForceEscap	Disable	
CommandCharEcho	Enable	
CarriageRtnChar	013 ASCI	
Backspace Char	008 ASCI	
Linefeed Char	010 ASCI	
Result Codes	Enable	
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 Timout	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 Contrl 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	
RemAccssPasswrd	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	

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8 Hardware Installation for DCP Mode 2
7400A Option Settings

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7400A Option Settings

The 7400A factory default user interface is set for the Hayes AT command set. The DEFINITY AUDIX system needs to have the user interface set for Keyboard Dial.

Use the following procedure to change the user interface:

1. Press the NEXT/NO or BACK buttons on the front panel until the SET INTERFACE? option appears.

2. Press the ENTER/YES button to select the interface menu.

3. Use the NEXT/NO button until INT -> KYBD DIAL? appears on the LCD.

4. Press the ENTER/YES button to select the Keyboard Dial option.

The 7400A will perform a selftest and initialize the Keyboard Dial user interface.

Set the following options using the SET OPTIONS? menu. Refer to the *7400A Data Module User's Manual*, 555-020-706, for more information on the front panel settings.

Table 8-3. 7400A Option Settings

Set Option Displays	Setting
Set 300 Speed?	no
Set 1200 Speed?	no
Set 2400 Speed?	no
Set 4800 Speed?	no
Set 9600 Speed?	no[1]
Set 19200 Speed?	yes
Set Answer?	Auto
Set Break Disc?	Long
Set CI Lead?	off
Set CH Lead?	off
Set CTS Lead?	on
Set DCD Lead?	on
Set DSR Lead?	on
Set DTR Detect?	50 msc

Continued on next page

Table 8-3.   7400A Option Settings — *Continued*

Set Option Displays	Setting
Set DTR Lead?	Follow[2]
Set LL Lead?	off
Set Parity?	Space
Set Remote Loop?	Grant
Set RI Lead?	on
Set RL Lead?	off
Set Sigls Disc?	on
Set TM Lead?	off

1. If DEFINITY AUDIX Digital Networking is to be set at 9600 bps, set 9600 to yes and 19200 bps to no.

2. On Paradyne Comsphere 3800 Modems this setting should be set to Follow. On other modem types the Ignore setting may be required.

Initial Network Administration and Acceptance Tests

<div style="text-align: right; font-size: 3em; font-weight: bold;">9</div>

This chapter contains instructions for performing initial digital networking administration and acceptance tests on the DEFINITY AUDIX system. Acceptance tests are network checks performed before providing networking capabilities to subscribers. This chapter presents:

- Administering the digital networking ports on the switch

- Administering modems, asynchronous data units (ADUs), and data modules on the switch for DCP Mode 2

- Administering the local DEFINITY AUDIX system for digital networking and performing a test machine on the local system

- Administering the remote systems on the local DEFINITY AUDIX system

- Administering the DEFINITY AUDIX system on the remote systems

- Testing networking connections

- Adding test subscribers to the local and remote systems and testing these subscribers

- Adding remote subscribers to the local system

- Setting weekly backup parameters, traffic collection, and call transfer out of AUDIX

- Recording remote system names on the local system

Switch Administration

Refer to the information you received from the design center when completing the switch administration.

Before beginning this administration, obtain the first two voice port extensions for the local DEFINITY AUDIX system from the Voice Group screen (**display voice-group**) on the DEFINITY AUDIX system if you do not already have these extensions available (refer to DEFINITY AUDIX Administration later in this chapter for login procedures).

Log in to the switch administration terminal. Refer to your switch administration documentation for login procedures.

Task 1: Administer the Digital Networking Ports

Administer a Data Module screen on the switch for each networking port. For the first networking port, administer the Data Module screen for voice port 1. For the second networking port, administer the Data Module screen for voice port 2.

Use the following procedure to administer a Data Module screen:

1. For the first voice port, enter **change station *extension*** (extension number of the first voice port) at the switch administration terminal. The first page of the Station screen displays for the voice port.

2. Enter a **y** in the Data Module field. This adds a Data Module screen for the station.

3. Page to the Data Module screen.

4. In the Data Extension field, enter a unique extension from the switch dialing plan.

5. In the Name field (optional), enter a name that identifies the networking port.

6. Enter a COR and COS for the networking port that reflects the desired COS and/or COR for the port. Use a separate class of service with data privacy and no restrictions.

7. In the ITC field (Information Transfer Capability) for G3V2, G3V3, and G3V4, enter **restricted**.

8. Save the changes.

9. Repeat steps 1 through 7 for the second networking port if there is one.

Task 2: Administer a Hunt Group for Digital Networking Ports

If there are two digital networking ports, it is recommended that they be placed in a switch Hunt Group.

To assign the digital 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 DEFINITY AUDIX system. (The extension that is part of the Dial String on the Machine Profile screen at the remote system.)

3. In the Group Type field, enter **ucd** (alternates between selecting first and second digital networking port).

4. In the Group Name field, enter a name that identifies the 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 extension of the first networking port for Extension one, and enter the name identified on the Data Module screen for the networking port.

12. Enter the extension of the second networking port for Extension two, and enter the name identified on the Data Module screen for the networking port.

13. Save the changes.

DCP Mode 1

See the switch documentation for administering DS1 facilities, or refer to the information received from the design center. If network tests are needed, refer to *DEFINITY AUDIX System Maintenance*, 585-300-110, or *DEFINITY AUDIX System Release 4.0 Maintenance,* 585-300-121.

DCP Mode 2

DCP Mode 2 requires the following additional switch administration.

7400A Data Module and Asynchronous Data Unit (ADU)

For each 7400A data module or ADU used in a DCP Mode 2 modem/data module arrangement, administer a Data Module screen.

1. At the switch administration terminal, enter **add data *extension*** or **add data *next*** to add the next available extension and press ENTER. The Data Module screen displays.

2. In the Type field, enter **pdm** for a 7400A data module, or enter **data-line** for an ADU.

3. In the Port field, enter the port location of the TN754 port to which the data module connects or the TN726 port to which the ADU connects such as 2B0701 (module 2, carrier B, slot 07, port 01).

4. In the Name field, enter an identifying name for the data module or ADU (such as dignet datmod1 or dignet ADU-1).

5. In the COS and COR fields, enter a desired COS and/or COR for the data module or ADU.

6. If the Type is pdm, in the Remote Loop-Around Test field, enter **n**.

7. If the Type is pdm, in the Secondary data module field, enter **n**.

8. In the Connected to field, enter **dte**.

9. In the ITC (Information Transfer Capability) field for G3V2, G3V3, and G3V4, enter **restricted**.

10. If adding an ADU, move to the next page. If adding a data module, save the changes and repeat the above steps for each data module.

11. In the KYBD Dialing field, enter **y**.

12. In the Configuration field, enter **n**.

13. In the Busy Out field, enter **y**.

14. In the Low field, enter **n**.

15. In the SPEEDS section, enter **y** for the speed being used for this ADU (9600 or 19,200 bps). Enter **n** for all other speeds.

16. In the Autoadjust field, enter **n**.

17. In the Permit Mismatch field, enter **n**.

18. In the Dial Echoing field, enter **y**.

19. In the Disconnect Sequence field, enter **two-breaks**.

20. In the Answer Text field, enter **y**.

21. In the Parity field, enter **space**.

22. In the Connected Indication field, enter **y**.

23. Save the changes.

24. Repeat the above steps for each ADU.

Modem

For each modem used in a DCP Mode 2 modem/data module arrangement, 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 the above steps for each modem.

Hunt Groups for Modem Ports/ADU Ports/Data Module Ports

If there is hardware for two DCP Mode 2 networking ports for DEFINITY AUDIX digital networking, set up the following additional hunt groups on the switch.

- set up each pair of ADU or 7400A data module ports in a hunt group

- set up each pair of modem ports in a hunt group

Refer to Figure 4-7, Switch Hunt Groups for Data Module, ADU, and Modem Ports (2 of 2), in Chapter 4, "DCP Mode 2 — 9600 or 19,200 bps", for a depiction of hunt groups for DCP Mode 2 data modules, ADUs, and modems. Figure 4-8 through Figure 4-13 show sample switch hunt group screens for the example in Figure 4-7. Figure 4-14, Remote Machine Profile Screen — Page 1 to Call DEFINITY AUDIX B, shows a sample DEFINITY AUDIX Machine Profile screen for the example in Figure 4-7. The Group Extension for each hunt group becomes part of the Dial String on the remote Machine Profile screen.

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 data module ports, the ADU ports, and 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.)

3. In the Group Type field, enter **ucd** (alternates between selecting the first and second port).

4. In the Group Name field, enter a name that identifies the ports (such as AUDIX Data Mods, AUDIX Modems, or AUDIX ADUs).

5. In the COR field, enter a class of restriction (COR) number that reflects the desired restriction for the 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 data module, ADU, or modem port for Extension one (such as 40021). The name displays that was entered on the Data Module screen for data modules and PDMs or on the Station screen for modems.

13. Enter the extension of the second data module, ADU, or modem port for Extension two (such as 40022). The name displays that was entered on the Data Module screen for data modules and ADUs or on the Station screen for modems.

14. Save the changes.

15. Set up another hunt group if needed (if you set up a hunt group for the data modules ports or ADU ports, set up a hunt group for the modem ports).

DCP Mode 3

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, refer to *DEFINITY AUDIX System Maintenance*, 585-300-110, or *DEFINITY AUDIX System Release 4.0 Maintenance*, 585-300-121.

DEFINITY AUDIX Administration

Perform the tasks described in this section to administer digital networking on the local DEFINITY AUDIX system. The tasks in this section are performed from the craft login.

1. At the login prompt, enter **craft**. The system displays the Password prompt.

2. Enter the password for the craft login. The system displays the Enter terminal type prompt.

3. Enter one of the following:

   - **513** for a 513 BCT or 715 BCT; enter **513** also for a 610/615 BCT or a PC with a 513 emulation package. (Since 513 is the default, you can press [ENTER] to select it).

   - **4410** for a 4410 or 5410 terminal; enter **4410** also for a 610/615 BCT or a PC with a 4410 emulation package.

   - **4425** for a 4425 or 5425 terminal

   - **5420** for a 5420 or 4415 terminal

   - **g3-ma** for a G3-MA (does not support DEFINITY AUDIX digital networking administration)

The generic DEFINITY AUDIX administration screen displays.

```
dab        Active     Alarms:  m A  Thresholds: none          Logins: 1


























enter command:
1Cancel   2Refresh  3Enter    4ClearFld 5Help    6Choices  7NextPage 8PrevPage
```

Press (CANCEL) to place the cursor at enter command:. From this screen you
can access DEFINITY AUDIX screens to perform administration tasks.

Press (ENTER) (F3) to update a screen.

Press (HELP) (F5) for screen help.

Press (CHOICES) (F6) for field help for the field where the cursor is positioned.

Press (NEXTPAGE) (F7) to move to the next screen.

Press (PREVPAGE) (F8) to move to the previous screen.

To log off the administration terminal, enter **logoff** at the enter command:.

Begin with Task 1.

Task 1: Verify All Required Software and Hardware

Before beginning initial administration of the digital networking ports on the DEFINITY AUDIX system, verify that all required software and hardware is present.

With the cursor at enter command:, enter **list configuration** and press ENTER to display the List Configuration screen.

Release 3.2 List Configuration

The List Configuration Screen for Release 3.2 should appear similar to the screen shown below.


```
dab        Active     Alarms:  m A  Thresholds: none               Logins: 1
list configuration
                          LIST CONFIGURATION

 Software Vintage : Release 3.2, Issue 1

                  Location    Type      Board Code      Vintage

                  01B13    ALARM_BD    TN2169          3
                           ABP_FW                      4
                  01B14    MFB_BD      TN566B          2
                           FAC_FW                      2
                           386_FW                      6
                  01B1400  DISK
                  01B1401  TAPE








enter command:
1Cancel    2Refresh  3Enter     4ClearFld 5Help       6Choices  7NextPage 8PrevPage
```

Figure 9-1.   List Configuration Screen

The List Configuration screen should display the following:

- A software vintage of 3.2 or above

- ALARM_BD — alarm board TN2170 or TN2169

- ABP_FW — alarm board firmware

- MFB_BD — MFB board TN567 or TN566B

- FAC_FW — front panel firmware

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- 386_FW — 386 firmware
- A disk drive
- A tape drive

Release 4.0 List Configuration

The List Configuration Screen for Release 4.0 should appear similar to the screen shown below.

```
drmfb15      Active      Alarms:  m A  Thresholds: none                    Logins: 2
list configuration
                            LIST CONFIGURATION

 Software Vintage : Release 4.0, Issue 1

                   Location   Type      Board Code      Vintage

                   01C06    MFB_BD     TN568            1
                            386_FW                      1
                   01C0600  DISK
                   01C0602  MO_DISK








enter command:
```

Figure 9-2.   List Configuration Screen

The List Configuration screen should display the following:

- A software vintage of 4.0
- MFB_BD — MFB board TN568
- 386_FW — 386 firmware
- A hard-disk drive
- A magneto-optical (MO) disk drive

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Task 2: Verify Proper Number of Networking Ports

Display the System Parameters Customer Options screen to check the Maximum Number of Digital Networking Ports.

With the cursor at `enter command:`, enter **display system-parameters customer-options** and press (ENTER) to display the System Parameters Customer Options screen similar to one of the screens shown below.

```
drmfb14     Active    Alarms: none  Thresholds: none              Logins: 3
display system-parameters customer-options                      Page 1 of 2
                        SYSTEM-PARAMETERS CUSTOMER-OPTIONS


                    Port Emulation Type: tn754

                 Switch Integration Type: display-set

           Maximum Number of Voice Ports: 8

  Maximum Number of Digital Networking Ports: 1

                     AMIS Analog Networking? y

                          Multilingual? n

        Maximum Number of IMAPI Sessions: 32

        Hours of Voice Storage Purchased: 30
                      Total Hours on Disk: 95



enter command: display system-parameters customer-options
```

Figure 9-3.   **Customer Options Screen with 16 Ports and Control Link Integration**

The Maximum Number of Digital Networking Ports should be either 1 or 2 as purchased by the customer. With Release 3.2, a customer can purchase a maximum of 2 ports. With Release 4.0 a customer can purchase a maximum of 1 port. An entry of 0 indicates that networking has not been turned on. If the number is incorrect, contact the remote support center to have it changed. (The System Parameters Customer Options screen can be changed only with the **init** login.)

The above figure shows the System Parameters Customer Options screen for a DEFINITY AUDIX Release 4.0 system with a tn754 Port Emulation Type, a display set Switch Integration Type, 8 Maximum Number of Voice Ports, and 1 Maximum Number of Digital Networking Ports.

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Task 3: Verify Adequate Number of Administered Remote Subscribers

Verify that the number of Administered Remote subscribers is equal to or greater than the total number of mailboxes on all remote systems with which this local DEFINITY AUDIX system will network (the networking installation information from the design center should include the total Administered Remote subscribers).

With the cursor at `enter command:`, enter **display system-parameters limits** and press (ENTER) to display the System Parameters Limits screen similar to the screen shown below.

```
dab          Active    Alarms:  m A  Thresholds: none                Logins: 1
display 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: 1000     Administered Remote: 1000
Lists,  Total Entries: 50000       Lists/Subscriber: 100   Recipients/List: 250

LOG LIMITS
    Admin Log Entries: 1000








enter command:
1Cancel   2Refresh  3Enter    4ClearFld 5Help    6Choices  7NextPage 8PrevPage
```

Figure 9-4.   System Parameters Limits Screen

The Administered Remote subscribers field is set to 1000 in the above example.

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Task 4: Administer Digital Networking Port(s) and Extensions

Administer the digital networking ports and extensions on the Network Group screen. The networking ports administered in this task must match the networking ports administered on the switch.

With the cursor at `enter command:`, enter **change network** and press ENTER to display the Network Group screen similar to the screen shown below.

```
dab        Active     Alarms:  m A  Thresholds: none            Logins: 1
change network-group                                         Page 1 of 1
                              NETWORK GROUP

        Member  Port   Extension        Member   Port    Extension
          1    01B1401 16017              2     01B1402 16018
```

```
enter command: change network-group
1Cancel   2Refresh  3Enter   4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 9-5.   **Network Group Screen**

The above example shows two networking ports for the local DEFINITY AUDIX Release 3.2 system.

Refer to the following table to complete the screen. Press ENTER (F3) to update the Network Group screen.

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Table 9-**1.** **Network Group Screen Entries**

Field	Description
Port	Enter the port location of the corresponding voice port. Network port 1 has the same port location as voice port 1 on the Voice Group screen. Network port 2 has the same port location as voice port 2 on the Voice Group screen. This is the digital port equipment location on the switch of the DEFINITY AUDIX multifunction board (MFB). For example, if the DEFINITY AUDIX MFB is in module 2, carrier B, slot 07, the first port location is 2B0701 (the last two digits are the port number).
Extension	The extensions for networking ports 1 and 2 must be unique extensions from the PBX dial plan and must match the extensions administered on the switch for the networking ports.

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Task 5: Verify Status of Networking Port(s)

Request a status of the networking ports on the Network Group Status screen.

With the cursor at `enter command:`, enter **status network-group** and press
ENTER to request the networking port status. The Network Group Status screen
displays similar to the screen shown below.

```
dab        Active    Alarms:  m A  Thresholds: none                 Logins: 1
status network-group                                                   Page 1
                             NETWORK GROUP STATUS


                            Port      State-
    Resource Member Ext     Location  Reason  Machine    Activity   Speed  Mode
    NET_PORT   1    16017   01B1401   ISI
    NET_PORT   2    16018   01B1402   ISI













Press [Cancel] to stop status
enter command: status network-group
 1Cancel    2Refresh  3Enter     4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 9-6. Network Group Status Screen

The State-Reason field for each networking port should show ISI (In-State Idle). If
something other than ISI is shown, recheck the networking administration.

This status screen is displayed until you press CANCEL (F1).

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Task 6: Test the Networking Ports

Test each networking port.

With the cursor at `enter command:`, enter **test network-port *port location*** (the Port field from the Network Group screen) and press ENTER . A screen similar to the following displays.

```
dab         Active    Alarms:  m A  Thresholds: none              Logins: 1
test network-port 01B1401                                     Page 1 of 1
                       TEST NETWORKING PORT RESULTS      Date: 04/17/95 16:14

                                         Most Recent           Test Counters:
  Resource   Loc.      Test Name          Test Result         Pass Fail Abort
  NET_PORT   01B1401  Test Process                              0    0    0
  NET_PORT   01B1401  Switch response                           0    0    0
  NET_PORT   01B1401  DSP sanity                                0    0    0

Press [Enter] to execute
enter command: test network-port 01B1401
 1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 9-7. Begin Test Network Port Screen

Press ENTER (F3) to execute the test.

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When the test is complete, the results display on the Test Networking Port Results screen similar to the screen shown below.

```
dab          Active    Alarms:    A  Thresholds: none              Logins: 1
test network-port 01B1401
                          TEST NETWORKING PORT RESULTS      Date: 05/24/95 11:43

                                        Most Recent            Test Counters:
     Resource    Loc.    Test Name       Test Result         Pass Fail Abort
     NET_PORT    01B1401 Test Process    P Passed              1    0    0
     NET_PORT    01B1401 Switch response P Passed              1    0    0
     NET_PORT    01B1401 DSP sanity      P Passed              1    0    0


















Command Successfully Completed
enter command:
1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 9-8.   Test Networking Port Results Screen

The Test Pass column should display a 1 for each resource. If 0 is displayed for a resource, refer to *DEFINITY AUDIX System Maintenance*, 585-300-110 or *DEFINITY AUDIX System Release 4.0 Maintenance*, 585-300-121, to determine a resolution. Resolve the problem, and run the test again.

Repeat the test for the other networking port if there is one.

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Task 7: Change the Local Machine Profile Screen

Add digital networking information to the Machine Profile screen for the local DEFINITY AUDIX system. Refer to the information received from the design center when completing this screen.

With the cursor at `enter command:`, enter **change machine *machine name*** (the name of the local DEFINITY AUDIX system) and press ENTER . Page 1 of the Machine Profile screen displays for the local DEFINITY AUDIX system similar to the screen shown below.

```
dab          Active     Alarms:  m A  Thresholds: none                Logins: 1
change machine dab                                                    Page 1 of 2
                            MACHINE PROFILE

Machine Name: dab          Machine Type: audix          Location: local

  Voiced Name? n        Extension Length: 5
     Voice ID: 0        Default Community: 1

ADDRESS RANGES
    Prefix                   Start Ext.   End Ext.      Warnings
1:                           00000        99999
2:
3:
4:
5:
6:
7:
8:
9:
10:


enter command: change machine dab
1Cancel   2Refresh 3Enter    4ClearFld 5Help    6Choices  7NextPage 8PrevPage
```

Figure 9-9.   Local Machine Profile Screen — Page 1

Page 1 of the Machine Profile screen should have been completed during the DEFINITY AUDIX installation. Change the Machine Name from **local** to the actual machine name if it is not already the actual name. Change the Machine Type to **audix** if it is not already audix. Make any other changes to the screen needed at this time.

Press NEXTPAGE (F7) to display page 2 of the Machine Profile screen.

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Page 2 of the Machine Profile screen is similar to the screen shown below. Refer to the following table to complete the screen.

```
dab          Active    Alarms:  m A  Thresholds: none              Logins: 1
change machine dab                                                 Page 2 of 2
                            MACHINE PROFILE

NETWORK CONNECTION PARAMETERS
 Dial String: ▮6020
Modem String: ▮

Data Rate: 64000                    Password:

Log Connect Events? y               Network Turnaround? n

Updates In? y  Out? y    Allow Automatic Full Updates? y




enter command: change machine dab
1Cancel  2Refresh 3Enter   4ClearFld 5Help   6Choices  7NextPage 8PrevPage
```

Figure 9-10. Local Machine Profile Screen — Page 2

The Dial String in the above example is the Hunt Group number for the digital networking port hunt group set up during switch administration. The Data Rate is `64000`. Refer to Chapter 4, "DCP Mode 2 — 9600 or 19,200 bps", for a Machine Profile screen example for DCP Mode 2.

Press ENTER (F3) to update the Machine Profile screen.

Table 9-2. Local Machine Profile Screen — Page 2 Entries

Field	Description
Dial String	*This field is only used when this system calls itself for testing purposes.* Enter the dial string of the hunt group number for the digital networking port hunt group set up during the Switch Administration described earlier in this chapter. The DEFINITY AUDIX system will use this hunt group number to do a test machine for the digital networking ports. If there is only one digital networking port, enter the extension of the digital networking port of the local machine.

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Table 9-2. Local Machine Profile Screen — Page 2 Entries — *Continued*

Field	Description
Modem String	Leave this field blank. This field is currently not being used.
Data Rate	*This field is used only when this system calls itself for testing purposes.* Enter the data rate used by the digital networking ports for test machine on the local DEFINITY AUDIX system (**9600**, **19200**, **56000**, or **64000**). This data rate is used to select a network group for outgoing calls, so this entry should match a data rate administered for a network group on the Network Group screen.
Password	Enter the password remote systems must use to establish networking connections to this local DEFINITY AUDIX system.
Log Connect Events	Enter **y** if this local DEFINITY AUDIX system will create an entry in the administration log for each network connection event (connections and failures) when calling any remote DEFINITY AUDIX, Intuity AUDIX, or AUDIX R1 systems. You may want to set to **n** if this will create too many entries in the administration log.
Network Turnaround	For now, leave this field set to **n** since this will simplify testing. After testing, enable the feature if desired.
	Network Turnaround can be administered on a system-wide or per-machine basis. To disable this feature system wide, set this field to **n** on the local Machine Profile screen. To enable the feature, set this field to **y** on the local Machine Profile screen *and* on the appropriate remote Machine Profile(s) screens on this local system.
	If enabled, a network connection that originated from this local DEFINITY AUDIX system is allowed to turn around after the local DEFINITY AUDIX system has sent all of its network data to any remote system. The remote system may then return update information, voice mail, and status on the same connection. For more information on this feature, refer to Chapter 10, "Ongoing Administration".
Updates In	For now, leave this field set to **n** since this will simplify testing. After testing is complete, set this field to **y** if you want to activate the remote updates feature.
	Enter **y** if this local DEFINITY AUDIX system will accept updated subscriber database information from any remote system (the Updates In field must be set to **y** on the remote Machine Profile screen set up on the local DEFINITY AUDIX system for each remote system.) If this field is set to **n**, the local DEFINITY AUDIX system will not accept updates from any remote system regardless of the entry on the remote Machine Profile screen.

Table 9-2. Local Machine Profile Screen — Page 2 Entries — *Continued*

Field	Description
Updates Out	For now, leave this field set to **n** since this will simplify testing. After testing is complete, set this field to **y** if you want to activate the remote updates feature.
	Enter **y** if subscriber information updates for local subscribers may be sent to a remote system (the Updates Out field must be set to **y** on the remote Machine Profile screen set up on the local DEFINITY AUDIX system for each remote system). If this field is set to **n**, updates will not be sent to any remote system regardless of the entry for this field on a remote Machine Profile screen.
Allow Automatic Full Updates	For now, leave this field set to **n** since this will simplify testing. After testing is complete, enter **y** to automatically generate requests for full updates from remote systems. Enter **n** to halt automatic full updates from this DEFINITY AUDIX system.

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Task 8: Perform a Local Machine Test

If the number of networking ports is greater than one, execute a test of the local
machine.

With the cursor at `enter command:`, enter:

test machine local or
test machine local <*network port location*> (optionally specify port) or
test machine *machine name* (the name of the local DEFINITY AUDIX system)

and press `ENTER`. A screen similar to the following displays:

```
dab           Active     Alarms:   wA  Thresholds: none                    Logins: 1
test machine local                                                      Page 1 of 1
                            TEST MACHINE RESULTS           Date: 04/28/95 17:21


      Machine: dab                            Network Port: 01B1401
     Voice ID: 0
  Dial String: 16020


                                       Most Recent                Test Counters:
  Resource    Loc.    Test Name        Test Result               Pass Fail Abort
  MACHINE     0       Test connection                              0    0    0







Press [Enter] to execute
enter command: test machine local
1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 9-11.   **Begin Local Test Machine Screen**

Press `ENTER` (F3) to execute the test.

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The Test Machine Results screen displays similar to the screen shown below.

```
dab          Active    Alarms:   wA  Thresholds: none              Logins: 1
test machine local
                          TEST MACHINE RESULTS          Date: 04/28/95 17:13


      Machine: dab                        Network Port: 01B1401
     Voice ID: 0
  Dial String: 16020



                                     Most Recent            Test Counters:
  Resource   Loc.    Test Name        Test Result           Pass Fail Abort
  MACHINE    0       Test connection  P Test Done-Pass         1    0    0







Command Successfully Completed
enter command:
 1Cancel    2Refresh  3Enter    4ClearFld 5Help    6Choices  7NextPage 8PrevPage
```

Figure 9-12.   Local Test Machine Results Screen

The Test Pass column should contain a 1. If Test Pass is 0, refer to *DEFINITY AUDIX System Maintenance*, 585-300-110, to determine a solution. Resolve the problem and run the test again.

> **NOTE:**
> From a station on the switch, you can call the number required to reach the remote system (either extension or hunt group number). This is the number in the Dial String field. For DCP Mode 2, this is the number in the Dial String after ATDT and before the "W". If the connection is working, you should hear data tone.

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Task 9: Administer Remote System(s) on the Local DEFINITY AUDIX System

Administer each remote DEFINITY AUDIX system, Intuity AUDIX system, or AUDIX R1 system on the local DEFINITY AUDIX system. Refer to the information received from the design center when completing this screen.

With the cursor at `enter command:`, enter **add machine *machine name*** (the name of the remote system) and press ENTER. Page 1 of the Machine Profile screen displays similar to the screen shown below with the remote system as the Machine Name. Refer to the following table when completing this screen.

```
dac          Active    Alarms:   wA  Thresholds: none              Logins: 1
add machine dac                                                   Page 1 of 1
                           MACHINE PROFILE

Machine Name: dac          Machine Type: audix        Location: remote

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

ADDRESS RANGES
     Prefix                 Start Ext.   End Ext.      Warnings
1:                          0001         3999
2:   615289                 0001         3999
3:   IND                    0001         3999
4:
5:
6:
7:
8:
9:
10:



enter command: add machine dac
1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 9-**13.   Remote Machine Profile Screen — Page 1**

The above example adds a DEFINITY AUDIX system with the Machine Name of `dac` and the Machine Type of `audix`. The Location indicates that this is a remote machine.

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Table 9-**3.   Remote Machine Profile Screen — Page 1 Entries**

Field	Description
Machine Type	Enter **audix** for the DEFINITY AUDIX system and the Intuity AUDIX system. Enter **r1aud** for the AUDIX R1 system.
Location	Enter **remote**
Voiced Name?	The system sets this field to y when a user with announcement permission records a name for the remote system.
Extension Length	Enter the length of extensions on the remote system.
Voice ID	Display-only field
Default Community	Enter the default community number to be used for the sending restrictions feature.
Prefix	Enter the prefix digits. A subscriber enters the prefix before the remote subscriber's extension when addressing voice messages. To make the task simple for the subscriber, use a short, descriptive prefix. The total length of the prefix and extensions must be < 25 characters. The prefix is used only by the DEFINITY AUDIX system to identify subscribers. It is not used for dialing out, so it does not need to match an area/office code.
	The figure on the previous page shows three ranges assigned to identify subscribers at a remote system.
	■ The first range does not use a prefix. The prefix is only required when one or more of the remote subscribers share the same extension numbers as the local subscribers. The DEFINITY AUDIX system uses the prefix to distinguish between local and remote subscribers in this case.
	■ The second range uses the public network access code as the prefix. When addressing a message to a remote subscriber, the local subscriber enters the remote subscriber's number as if placing a call to that subscriber. This may be the easiest method in some instances.
	■ The third range uses a location code as the prefix. This method simplifies addressing messages by requiring only an alphanumeric code in front of the extension number. Location codes, besides being shorter in length, are often more friendly to the user.

Table 9-3. Remote Machine Profile Screen — Page 1 Entries — *Continued*

Field	Description
Start Ext.	Enter the starting extensions for the ranges of telephone numbers used on the remote system. For example, if your system uses extensions between 2000 and 3000, enter 2000 in the Start Ext. field.
End Ext.	Enter the ending extensions for the ranges of telephone numbers used on the remote system. For example, if your system uses extensions between 2000 and 3000, enter 3000 in the End Ext. field.
Warnings	Display-only field.

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Enter the changes and press NEXTPAGE (F7) to display Page 2 of the Machine
Profile screen similar to the screens shown below. Refer to the following table to
complete this screen. Press ENTER (F3) to add the machine profile for the remote
system.

```
dab          Active    Alarms:  m A  Thresholds: none                 Logins: 1
 add machine dac                                                     Page 2 of 2
                              MACHINE PROFILE

NETWORK CONNECTION PARAMETERS
 Dial String: 14020
Modem String:

Data Rate: 64000       Password:

Message Transmission Schedule (hh:mm)
  1.  Start: 00:02      End: 23:59      Interval: 00:05
  2.  Start:  :         End:  :         Interval:  :
  3.  Start:  :         End:  :         Interval:  :

Send to Non-Administered Recipients? n

Log Connect Events? n

Network Turnaround? n

Updates In? n   Out? n

enter command: add machine dac
1Cancel    2Refresh  3Enter     4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 9-14.   Remote Machine Profile Screen (DCP Mode 3) — Page 2

The above example in a DCS arrangement shows a Dial String of 5 digits used
by the local DEFINITY AUDIX system to call the remote DEFINITY AUDIX system
(this could be the Hunt Group Number of the digital networking ports on the
remote DEFINITY AUDIX system if the digital networking ports are in a hunt
group). The Data Rate is 64000. The Message Transmission Schedule starts at 2
minutes after midnight and ends at one minute before midnight for a 24-hour
period. The local DEFINITY AUDIX system checks the message queue for this
remote system every 5 minutes and establishes a network connection with the
remote system if there are messages in the queue.

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```
dac          Active    Alarms: M wA  Thresholds: none           Logins: 1
change machine dab                                            Page 2 of 2
                            MACHINE PROFILE

NETWORK CONNECTION PARAMETERS
 Dial String: 40020"W"ATDT9,5520010"W""B"20000
Modem String: █

Data Rate: 9600        Password:

Message Transmission Schedule (hh:mm)
  1.  Start: 00:00      End: 23:59      Interval: 00:05
  2.  Start:   :        End:   :        Interval:   :
  3.  Start:   :        End:   :        Interval:   :

Send to Non-Administered Recipients? y

Log Connect Events? y

Network Turnaround? n

Updates In? y  Out? y
_____
enter command: change machine dab
 1Cancel   2Refresh  3Enter     4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 9-15. Remote Machine Profile Screen (DCP Mode 2) — Page 2

The above example shows a DCP Mode 2 Dial String. Refer to <u>Chapter 4, "DCP Mode 2 — 9600 or 19,200 bps"</u>. *Multistage Dialing* provides a description of the dialing stages needed for DCP Mode 2. *Hunt Groups* in *Switch Administration Requirements for DCP Mode 2* describes using DCP Mode 2 hunt groups in the Dial String. The Data Rate is 9600. The Message Transmission Schedule starts at midnight and ends at one minute before midnight for a 24-hour period. The local DEFINITY AUDIX system checks the message queue for this remote system every 5 minutes and establishes a network connection with the remote system if there are messages in the queue.

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Table 9-4. Remote Machine Profile Screen — Page 2 Entries

Field	Description
Dial String	Enter the string of digits used when the DEFINITY AUDIX system dials the remote system to establish a networking call. Valid entries are 0 to 65 alphanumeric characters including the following:
	■ digits
	■ upper and lower case letters
	■ #, *, +, %, (), -, spaces, ',' (2-second pause)
	■ ATDT (attention command of the modem). If you dial a number to reach an outside local line, such as 9, include the attention code, *ATDT*, and the outside access number in the dial string. Use "," to create a pause for dial tone. Example: ATDT 9,2346000.
	Character strings that have special meaning within the DEFINITY AUDIX system must be enclosed within double quotes. Valid special strings are:
	"W" — wait for another dial prompt "B" — replace with a BREAK character "I" — replace with modem initialization string (not used at this time) (for DCP Mode 2, ATDT causes the modem to go off-hook and dial the number)
	Refer to Chapter 4, "DCP Mode 2 — 9600 or 19,200 bps". *Multistage Dialing* provides a description of the dialing stages needed for DCP Mode 2. *Hunt Groups* in *Switch Administration Requirements for DCP Mode 2* describes using DCP Mode 2 hunt groups in the Dial String.
	See *Examples of DEFINITY AUDIX Digital Networking Dial Strings* at the end of this table.
Modem String	Leave this field blank. This field is currently not being used.

Continued on next page

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Table 9-4. Remote Machine Profile Screen — Page 2 Entries — *Continued*

Field	Description
Data Rate	Enter the data rate to be used for an outgoing network call to this DEFINITY AUDIX system.
	DCP Mode 1 = **56000** Kbps DCP Mode 2 = **9600** or **19200** bps DCP Mode 3 = **64000** Kbps
	This data rate is used to select a network group for outgoing calls, so this should match a data rate administered for a network group on the Network Group screen.
Password	Enter the password the remote system must use when establishing a networking connection to the local DEFINITY AUDIX system.
Message Transmission Schedule	*Start Time* – Enter the starting time for a message transmission period to the remote system (such as 00:01 for one minute after midnight).
	End Time – Enter the ending time for a message transmission period to the remote system such as 23:59 for one minute before midnight).
	Interval – Enter the interval at which the local DEFINITY AUDIX system will call this remote system (such as 00:05 for every 5 minutes). The DEFINITY 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.
	It is recommended that you set up different start times and intervals for each remote system so the local DEFINITY AUDIX system is not trying to call all remote systems at the same time.
Send to Non-Administered Recipients	Enter **y** if the DEFINITY AUDIX system will attempt to deliver messages to nonadministered remote recipients. Enter **n** if messages cannot be sent to nonadministered recipients.
Log Connect Events	Enter **y** if this local DEFINITY AUDIX system will create an entry in the administration log for each network connection event (connections and failures) to this remote system. This field must be set to **y** on the local Machine Profile screen. You may want to set to **n** if this will create too many entries in the administration log.

Continued on next page

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Table 9-4.   **Remote Machine Profile Screen — Page 2 Entries —** *Continued*

Field	Description
Network Turnaround	Enter **n** in this field for the purpose of acceptance tests. After the acceptance tests, enter **y** 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 DEFINITY AUDIX system. The local DEFINITY AUDIX 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 **y** on the local Machine Profile screen for this feature to work between the local DEFINITY AUDIX system and the remote system. For more information on this feature, refer to Chapter 10, ''Ongoing Administration''.
Updates In	Enter **n** in this field for the purpose of acceptance tests. After the acceptance tests, enter **y** if the local system will accept updated database information from the remote DEFINITY AUDIX system (provided the Updates Out field on the local system is set to **y**).
Updates Out	Enter **n** in this field for the purpose of acceptance tests. After the acceptance tests, enter **y** if the local system will send updated database information to the remote DEFINITY AUDIX system (provided the Updates In field on the local system is set to **y**.)

Repeat this task for each remote system.

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Examples of DEFINITY AUDIX Digital Networking Dial Strings

DCP Mode 1 or DCP Mode 3 Dial String Using Automatic Alternate Routing (AAR)

8,5551234

- 8 – AAR feature access code
- 555 – Route Number Index (RNX)
- 1234 – Last four digits of the remote AUDIX networking port or hunt group

DCP Mode 1 or DCP Mode 3 Dial String Using Automatic Route Selection (ARS)

9,1303,5551234

- 9 – ARS feature access code
- 1 – 1 prefix (check local dial plan if needed)
- 303 – Long distance number of the remote AUDIX networking port or hunt group

DCP Mode 1 or DCP Mode 3 Digital Networking in a DCS Network

54000

- 5-digit extension in the DCS network

DCP Mode 2 DEFINITY AUDIX Networking Call to an Intuity or AUDIX R1 System

40020"W"ATDT9,1303,5559876

- 40020 – Extension of the local DCP data module (ADU or 7400A)
- "W" – Wait for modem connection
- ATDT9,1303,5559876 – Attention command of the modem. Modem dials the remote Intuity or AUDIX R1 networking port or hunt group

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Task 10: Administer the DEFINITY AUDIX on the Remote Machine(s)

Administer each remote system or request that the remote system administrator administer each remote system to enable the remote system to establish a networking connection with the local DEFINITY AUDIX system. This includes other DEFINITY AUDIX systems, Intuity AUDIX systems, and AUDIX R1 systems. If you do not know the name of the remote machines, enter **list machines** and press ENTER to display the List Machines screen.

```
dab          Active     Alarms:  m A  Thresholds: none                  Logins: 1
list machines
                              LIST MACHINES


           Machine      Machine Type   Voice ID   Callback No.
           R1V8         rlaud          3          N/A
           daa          audix          1          N/A
           dab          audix          0          N/A
           dac          audix          2          N/A
           intuity      audix          5          N/A










enter command:
1Cancel    2Refresh  3Enter     4ClearFld 5Help      6Choices  7NextPage 8PrevPage
```

Figure 9-16.   List Machines Screen

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Task 11: Test the Connection to Each Remote System

Test the connection to each remote system.

With the cursor at `enter command:`, enter **test machine *machine name*** (the name of the remote system) and press (ENTER). The Test Machine Results screen displays similar to the screen shown below:.

```
dab         Active     Alarms:  mwA  Thresholds: none              Logins: 1
test machine dac
                           TEST MACHINE RESULTS            Date: 04/19/95 15:17


     Machine: dac                               Network Port: 01B1401
    Voice ID: 2
 Dial String: 14020



                                    Most Recent              Test Counters:
 Resource    Loc.    Test Name      Test Result              Pass Fail Abort
 MACHINE     2       Test connection  P Test Done-Pass          1    0    0








 Command Successfully Completed
 enter command:
 1Cancel    2Refresh  3Enter    4ClearFld 5Help    6Choices  7NextPage 8PrevPage
```

Figure 9-17.   Remote Test Machine Results Screen

The Test Pass column should contain a 1. If Test Pass is 0, refer to *DEFINITY AUDIX System Maintenance*, 585-300-110 or *DEFINITY AUDIX System Release 4.0 Maintenance*, 585-300-121, to determine a solution. Resolve the problem and run the test again.

Repeat the test for each remote system.

➡ NOTE:

From a station on the switch, you can call the number required to reach the remote system (either extension or hunt group number). This is the number in the Dial String field. For DCP Mode 2, this is the number in the Dial String after ATDT and before the "W". If the connection is working, you should hear data tone.

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Task 12: Administer Remote Subscribers on the Local System

During the initial administration process, remote subscribers need to be administered on the local DEFINITY AUDIX system. Administered remote subscribers are subscribers you enter into the local DEFINITY AUDIX system database. Each administered remote subscriber requires a name, machine name, and an extension. By administering remote subscribers, the local DEFINITY AUDIX system knows where to send messages when a local subscriber records a message and addresses the message to a remote extension.

For acceptance tests, the installer must administer two test remote subscribers for each remote system. For example, if you plan to network with four remote systems named LA1, LA2, LA3, and LA4, you need to administer two test subscribers on the local system and on each remote system. During acceptance testing, described later in this task, you address voice messages to each of those test subscribers.

DEFINITY AUDIX digital networking cannot exchange messages with a remote subscriber administered on the local system unless that subscriber is also administered on the remote system. For example, you administer Test Subscriber 1 (testsub1) as a remote subscriber. The administrator of the remote system administers the same Test Subscriber 1 (testsub1) as a local subscriber. When you attempt to send a voice message to Test Subscriber 1, the message is sent successfully. If the remote system administrator did not administer Test Subscriber 1 as a local subscriber, you cannot send a message to that person.

When administering remote subscribers, you have the option of performing a full remote update which copies the subscriber information from a remote system to the local DEFINITY AUDIX system or adding all remote subscribers on all remote systems one by one using the add Remote Subscriber screen. This task describes both procedures. If you are going to add less than the full database of subscribers on the remote system to the local system, you add the selected remote subscribers to the local system rather than perform a remote update.

Task 12A: Add Test Subscribers on the Local and Remote Systems

Administer two test subscribers on the local system and on the remote system, such as testsub1 and testsub2, and enter any unused extension from the remote system dial plan.

1. At the local DEFINITY AUDIX administration terminal, enter **add remote-subscriber,** and press ENTER to display the Remote Subscriber screen similar to the screen shown below:

```
dab        Active    Alarms:  m A  Thresholds: none              Logins: 1
add remote-subscriber                                          Page 1 of 1
                          REMOTE SUBSCRIBER

           Name: testsub1                       Extension: 85555
        Address:

    Community ID: 1                          Administered? y
     Voiced Name?                  Non-Administered Type:

Last Usage Date:

                      Machine Names
                 dac█




Press [ENTER] to execute or press [CANCEL] to abort
enter command: add remote-subscriber
1Cancel   2Refresh  3Enter   4ClearFld 5Help    6Choices  7NextPage 8PrevPage
```

Figure 9-18.   Remote Subscriber Screen

2. Add the two remote subscribers (testsub1 is shown in the above example). Refer to Chapter 10, "Ongoing Administration", section Manually Adding Remote Subscribers, if you need additional information on how to complete the Remote Subscriber screen. The Address, Voiced Name, and Non-Administered Type fields are display only.

3. Request that the administrator at the remote system add the same two subscribers and extensions as local subscribers. At the administration terminal on the remote system, enter **add subscriber** and press ENTER to display the Subscriber screen. Add the two test subscribers added in the above step.

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Task 12B: Verify Remote Extensions

At the local DEFINITY AUDIX administration terminal, enter **list remote-extension *machine name*** (name of the remote system) to display the List Remote Extensions screen and verify that the two test remote subscribers were added successfully.

Task 12C: Send a Test Message to Remote Subscribers

Create a voice mail message and send it to each of the two test subscribers on the remote system. Confirm that the message sent was received by the two test subscribers at the remote system.

Task 12D: Receive a Test Message from Remote Subscribers

Request that the administrator at the remote system create a voice mail message and send it to the two test subscribers on the local DEFINITY AUDIX system. Confirm at the local DEFINITY AUDIX system that the message was received by the two test subscribers.

Task 12E: Perform a Full Remote Update

Perform this procedure if adding the full database of subscribers on the remote system to the local DEFINITY AUDIX system. If you are adding less than the full database of remote subscribers from the remote system, go to Task 12F: Administer Remote Subscribers. Perform the following steps to do a full remote update to gather remote subscribers.

1. At enter command: on the local DEFINITY AUDIX administration terminal, enter **list measurements feature day** and press ENTER to display the Feature Daily Traffic screen. Write down the current number of remote subscribers.

2. Enter **change machine *machine name*** (name of the local DEFINITY AUDIX system) and press ENTER to display the Machine Profile screen for the local DEFINITY AUDIX system**.** Press NEXTPAGE (F7) to display Page 2. Enter **y** for both the Updates In and Out fields if the fields are not set to **y** already. Refer to Task 7: Change the Local Machine Profile Screen for a screen example.

3. Enter **change machine *machine name*** (name of the remote system) and press ENTER to display the Machine Profile screen for the remote system. Press NEXTPAGE (F7) to display Page 2. Enter **y** for both the Updates In and Out fields. Refer to Task 9: Administer Remote System(s) on the Local DEFINITY AUDIX System for a screen example.

4. Ask the system administrator at the remote system to change the remote system to allow updates to and/or from the remote system.

5. At `enter command:` on the local DEFINITY AUDIX administration terminal, enter **get remote-updates *machine name*** (name of the remote system) and press ⏎ENTER⏎ to copy all remote subscribers to the local DEFINITY AUDIX system.

    ⇒ **NOTE:**
    This update may take some time, possibly hours, depending on the number of subscribers on the remote system. When the update is complete, this screen will show `completed` in the Status of Last Update field and show the date and time of the completion in the Last Completed Update field..

```
dab         Active     Alarms:  m A  Thresholds: none              Logins: 1
get remote-updates daa                                        Page 1 of 1
                        REMOTE UPDATE REQUEST


Request Full Update from Machine:   daa

           Status of Last Update:   pending

           Last Completed Update:

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







enter command: get remote-updates daa
1Cancel   2Refresh  3Enter    4ClearFld 5Help    6Choices  7NextPage 8PrevPage
```

Figure 9-19.   Remote Update Request Screen

6. With the cursor at `enter command:`, enter **status network group** and press ⏎ENTER⏎. Look in the Activity column to see if the remote update is in progress.

7. When the remote updates procedure has completed, do the following:

    a. With the cursor at `enter command:`, enter **list remote extensions** and press ⏎ENTER⏎. Check to see that the remote subscribers are on the local DEFINITY AUDIX system.

    b. Enter **list measurements feature day** and press ⏎ENTER⏎ to display the Feature Daily Traffic screen. Verify the new number of remote subscribers.

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      c. Enter **display administration-log** and press (ENTER) to display the Administration Log screen. Verify that no conflicts or problems occurred with the remote update.

8. At the local DEFINITY AUDIX system, enter **change machine *machine name*** and press (ENTER) to display the Machine Profile screen for the local DEFINITY AUDIX system. Change the Updates In and Out fields to the final values (refer to the networking installation information from the design center). (Refer to Task 7: Change the Local Machine Profile Screen for a screen example.

9. For the remote system, enter **change machine *machine name*** (name of the remote system) and press (ENTER) to display the Machine Profile screen for the remote system. Change the Updates In and Out fields and the Send to Non-Administered Recipients field to the final values (refer to the networking installation information from the design center).

Task 12F: Administer Remote Subscribers

If you are adding less than the full database of subscribers on the remote system to the local system, add the selected remote subscribers to the local system one at a time rather than perform a remote update. The number of remote subscribers administered on the local system is limited by disk space availability on the local system and the number of remote subscribers the backup tape can hold.

At the local DEFINITY AUDIX administration terminal, enter **add remote-subscriber** and press (ENTER) to display the Remote Subscriber screen. Refer to Chapter 10, "Ongoing Administration", for instructions on completing the Remote Subscriber screen.

Task 12G: Verify Remote Extensions

At the local DEFINITY AUDIX administration terminal, enter **list remote-extension *machine name*** (name of the remote system) to display the List Remote Extensions screen and verify that the remote subscribers were added successfully.

Repeat Task 12 for Each Remote System

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Task 13: Set Weekly Backup Parameters

At the local DEFINITY AUDIX administration terminal, enter **change system-parameters features** and press ENTER to display the System-Parameters Features screen. Press NEXTPAGE (F7) to display Page 2. The System-Parameters Features screen displays similar to the screen shown below:

```
dab         Active      Alarms:  m A  Thresholds: none            Logins: 1
change system-parameters features                              Page 2 of 4
                          SYSTEM-PARAMETERS FEATURES

MISCELLANEOUS PARAMETERS
        Broadcast Mailbox Extension:
           System Prime Time, Start: 08:00      End: 17:00
              Weekly Backup Enabled? y       Locals Only? n
              Increment(l/s), Rewind: s       Advance: s

FEATURE ACTIVATION
                  Traffic Collection? y
         Name Record by Subscriber? y
        Multiple Personal Greetings? y
              End of Message Warning? y       Warning Time (seconds): 15
            Priority on Call Answer? n

CALL TRANSFER OUT OF AUDIX
 Transfer Type: basic                        Transfer Restriction: digits
 Covering Extension:



enter command: change system-parameters features
 1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 9-20.   System Parameters Features Screen — Page 2

Change the Weekly Backup Enabled field to **y**.

The Locals Only field may be set to **n** if there is not enough room on the DEFINITY AUDIX tape or optical disk to back up remote subscribers.

Set the Traffic Collection field to **y**.

Administer Call Transfer Out of AUDIX. If the switch integration type is Display Set, the Transfer Type must be **basic** or **none**. If the switch integration type is Control Link, the Transfer Type can be as follows:

- System 75, G1, G3V1, or G3V2 — **basic** or **none**

- G3V3 or G3V4 — **none**, **basic**, **enhanced_no_cover_0**, or **enhanced_ cover_0**.

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Task 14: Record Remote Machine Names (Optional)

Normally, this task is a customer responsibility. After the local and remote systems have been administered, the system administrator may want to record the machine names. The DEFINITY AUDIX system does not require you to record machine names. However, the local system voices these names when local subscribers address messages to the remote system, or when they receive messages from remote subscribers whose names are not recorded or who are not administered.

To record remote machine names:

1. Verify you have announcement-control permission by entering **change subscriber *<nnnn>*** on the path line, where *<nnnn>* is your extension number. Press (ENTER).

2. Press (NEXTPAGE) (F7) and verify the Announcement Control? field is set to **y**.

   If it is not, enter **y** now. Press (ENTER) (F3) to save your data and/or exit the screen.

3. Enter **list machines** on the path line and press (ENTER). (Voice IDs are automatically assigned as you add a remote machine. The List Machines report shows the voice ID for each remote machine.)

4. Either print this screen, write down the voice IDs associated with each remote machine, or leave this screen up as you record names.

   $\Longrightarrow$ **NOTE:**

   Some remote machine profiles are used for a *range* of machines. Either voice a name that is meaningful for all machines in the range, or do not voice a name for these profiles.

5. From a touch-tone telephone, log into the DEFINITY AUDIX system using the extension that has announcement-control permissions.

6. From the activity menu, press (9) to perform system administration.

7. Press (6) to record machine names.

8. Using the touch-tone keypad, enter the voice ID for the first remote machine, and press (#).

9. At the tone, speak the remote machine's name.

10. Press (*) (D) to delete and re-record the name, or press (#) to approve it.

11. Repeat Steps 8 through 10 for each remote system or telephone number name.

12. When you are finished, press (*) (R) to return to the activity menu, or just hang up the telephone to exit the system.

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Ongoing Administration

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This chapter describes the ongoing administration required for DEFINITY AUDIX digital networking. Ongoing administration includes the following:

- Maintaining machine profile information on the local DEFINITY AUDIX system for both the local system and the remote systems

- Maintaining remote subscriber information

Ongoing Machine Administration

During initial administration, remote machine information was administered on your local DEFINITY AUDIX system. From time to time, you may need to update this information. For example, you may receive a call from a remote system network administrator informing you that he or she has changed some of the remote machine information. You need to change the information on the local DEFINITY AUDIX system to match the remote system.

This section contains procedures for updating your local and remote machine administration stored in the DEFINITY AUDIX database and includes the following information.

- Displaying machine information

- Adding remote machine information

- Changing machine information

- Deleting remote machine information

■ Recording remote machine names

⟹ **NOTE:**

If you change your local machine profile, contact all remote network administrators and inform them of the changes. Do not change your local machine profile without informing the other administrators. If they do not update their machines, subscribers will not be able to exchange mail messages.

Viewing the List Machines Screen

Before you add, change, or delete information for local and remote systems, you may need to view the information administered for the systems. You need to know the machine name to access the Machine Profile screen which contains the networking information administered for each remote system.

⟹ **NOTE:**

If you need instructions for logging on to the DEFINITY AUDIX system, refer to Chapter 9, "Initial Network Administration and Acceptance Tests", *section* DEFINITY AUDIX Administration.

If you do not know the name of the remote systems, access the List Machines screen. With the cursor at enter command:, enter **list machines** and press ENTER to display the List Machines screen.

```
 dab        Active     Alarms:  m A  Thresholds: none                  Logins: 1
list machines
                              LIST MACHINES


            Machine        Machine Type     Voice ID    Callback No.
            R1V8           rlaud               3            N/A
            daa            audix               1            N/A
            dab            audix               0            N/A
            dac            audix               2            N/A
            intuity        audix               5            N/A










enter command:
1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 10-1. List Machines Screen

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The List Machines screen lists the local system and each administered remote system. In the above example, dab is the local DEFINITY AUDIX system. The network contains two other DEFINITY AUDIX systems (daa and dac), one Intuity AUDIX system, and one AUDIX R1 system.

Use the List Machines screen to find machine names. Record the names for use in the next section.

Viewing the Machine Profile Screen

If you know the machine name, use the following instructions to view the Machine Profile screen.

With the cursor at enter command:, enter **display machine *machine name*** (the name of the remote system) and press (ENTER). Page 1 of the Machine Profile screen displays similar to the screen shown below.

```
dac         Active   Alarms:   wA  Thresholds: none              Logins: 1
add machine dac                                                 Page 1 of 1
                            MACHINE PROFILE

Machine Name: dac           Machine Type: audix        Location: remote

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

ADDRESS RANGES
    Prefix                  Start Ext.   End Ext.      Warnings
1:                          0001         3999
2:   615289                 0001         3999
3:   IND                    0001         3999
4:
5:
6:
7:
8:
9:
10:


enter command: add machine dac
1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 10-2.   Machine Profile Screen for a Remote System — Page 1

The information administered for the system displays in fields on the screen. If you need to view the next page of information, press (NEXTPAGE) (F7) to move to the next page of the screen.

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.

```
dab         Active     Alarms:  m A  Thresholds: none              Logins: 1
 add machine dac                                                Page 2 of 2
                          MACHINE PROFILE

NETWORK CONNECTION PARAMETERS
 Dial String: 14020
Modem String:

Data Rate: 64000       Password:

Message Transmission Schedule (hh:mm)
  1.  Start: 00:02     End: 23:59      Interval: 00:05
  2.  Start:   :       End:   :        Interval:   :
  3.  Start:   :       End:   :        Interval:   :

Send to Non-Administered Recipients? n

Log Connect Events? n

Network Turnaround? n

Updates In? n   Out? n


enter command: add machine dac
1Cancel    2Refresh  3Enter     4ClearFld 5Help      6Choices  7NextPage 8PrevPage
```

Figure 10-3.   Machine Profile Screen for a Remote System — Page 2

Adding a Remote Machine

As your network grows, you may need to add remote systems to the local
DEFINITY AUDIX database. The local system needs to know specific information
about each remote system, including the machine name, password, machine
type, dial string, and modem string if the connection type is DCP Mode 2. Use
the remote Machine Profile screen to add this information to the local DEFINITY
AUDIX system.

> **NOTE:**
> The DEFINITY 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.

Refer to Chapter 9, "Initial Network Administration and Acceptance Tests", Task
9: Administer Remote System(s) on the Local DEFINITY AUDIX System, for
complete instructions on adding a remote system on the local DEFINITY AUDIX
system.

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Changing Machine Administration

As you use your network and tune the network to meet your needs, you may need to change the information administered for the local and remote systems. Change machine information as seldom as possible to reduce possible communication problems. This section contains the following procedures.

- Changing Local Machine Information
- Changing Remote Machine Information

> **NOTE:**
> If you need instructions for logging on to the DEFINITY AUDIX system, refer to Chapter 9, "Initial Network Administration and Acceptance Tests", section DEFINITY AUDIX Administration.

If you do not know the names of the remote systems, use the **list machines** command as described earlier in this chapter. When you enter the command, you see a list of all systems administered on the local DEFINITY AUDIX system.

Use the following instructions to update remote machine information on the local DEFINITY AUDIX system.

1. With the cursor at `enter command:`, enter **change machine *machine name*** (the name of the remote system) and press (ENTER). Page 1 of the Machine Profile screen displays similar to the screen shown in Figure 10-2, **Machine Profile Screen for a Remote System — Page 1**. Refer to Chapter 9, "Initial Network Administration and Acceptance Tests", Task 9: Administer Remote System(s) on the Local DEFINITY AUDIX System, for descriptions of the fields on the remote Machine Profile screen.

   > **NOTE:**
   > The Location and Voice ID fields are display only. You cannot change the information in these fields.

   The Address Range section of the Machine Profile screen allows you to set prefix and address ranges for the remote systems. The DEFINITY AUDIX system uses the prefix and address ranges to determine the remote system on which a remote subscriber resides when mail is addressed to that subscriber.

2. Press (NEXTPAGE) (F7) to move to the next page of the screen.

3. When you finish changing remote machine information, press (ENTER) (F3) to save the information in the system database. You receive the following confirmation message:

   `Command Successfully Completed`

4. Press (CANCEL) (F1). You can enter another command or enter **logoff** to log off of the DEFINITY AUDIX system.

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Deleting Remote Machines

If you are contacted by a remote network administrator and informed that a remote system has been removed from the network, you need to delete that system information from the local DEFINITY AUDIX system. When you remove a remote system, you also remove any remote subscribers associated with that remote system. Do not remove a remote system unless you are positive the system no longer exists. You cannot remove local machine profile information.

When you remove a remote system, the machine profile and subscriber information is not completely removed from the local system until a nightly audit runs.

Use the following instructions to delete a remote machine.

1. With the cursor at `enter command:`, enter **remove machine *machine name*** (the name of the remote system) and press (ENTER). Page 1 of the Machine Profile screen displays similar to the screen shown below.

```
dab          Active    Alarms:   wA  Thresholds: none              Logins: 1
remove machine LA                                              Page 1 of 2
                             MACHINE PROFILE

Machine Name: LA           Machine Type: audix        Location: remote

 Voiced Name? n        Extension Length: 5
    Voice ID: 11       Default Community: 1

ADDRESS RANGES
    Prefix                   Start Ext.   End Ext.      Warnings
1:  52                       21000        40000
2:
3:
4:
5:
6:
7:
8:
9:
10:


Press [Enter] to execute or [Cancel] to abort
enter command: remove machine LA
1Cancel    2Refresh  3Enter     4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 10-4.   Remove Machine Profile for a Remote System

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2. The following message is displayed on the screen.

   Press [Enter] to execute or [Cancel] to abort

3. Press (ENTER) (F3) to remove the machine profile information for this remote system.

4. You receive the following confirmation message:

   Command Successfully Completed

Record Remote Machine Names

If you add or change the name of local and remote machines, you need to record the machine names. The DEFINITY AUDIX system does not require you to record machine names. However, when a subscriber sends a message to another subscriber, the message header contains the name of the machine that sent the message. The subscriber hears the machine name as the header is played and knows where to return the message.

Refer to Chapter 9, "Initial Network Administration and Acceptance Tests", section Task 14: Record Remote Machine Names (Optional) for instructions on recording machine names.

If a subscriber addresses a message to a non-verified remote subscriber and if that address can exist on only one remote system, the DEFINITY AUDIX system plays that machine name. For example, a subscriber creates a voice mail message and addresses the message to a remote subscriber at extension "1234" on a New York system prefixed by NY. The NY machine name is recorded on the local DEFINITY AUDIX system and the local system plays the NY machine name to the subscriber addressing the message.

Adding a Second Networking Port

If you originally purchased only one networking port for a Release 3.2 system and wish to add a second networking port, you first need to purchase an additional networking port from your Lucent Technologies representative. It is recommended that the design center provide switch and DEFINITY AUDIX administration information to you for the second networking port.You cannot purchase a second networking for Release 4.0.

Switch Administration

Refer to Chapter 9, "Initial Network Administration and Acceptance Tests", for instructions. Perform the following tasks.

- Task 1: Administer the Digital Networking Ports
- Task 2: Administer a Hunt Group for Digital Networking Ports
- Perform the tasks for DCP Mode 1, DCP Mode 2, or DCP Mode 3

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Refer to <u>Chapter 9, "Initial Network Administration and Acceptance Tests"</u>, for instructions. Perform the following tasks.

- <u>Task 4: Administer Digital Networking Port(s) and Extensions</u>
- <u>Task 5: Verify Status of Networking Port(s)</u>
- <u>Task 6: Test the Networking Ports</u>

Ongoing Subscriber Administration

After DEFINITY AUDIX digital networking has been administered initially, you may need to perform ongoing administration tasks. For example, if only the test remote subscribers were administered, you now need to administer all remote subscribers. This chapter contains the following procedures for updating the remote subscriber information stored in the DEFINITY AUDIX database.

- Viewing the remote subscriber lists
- Administering remote updates on the local and remote machines
- Manually adding and updating remote subscribers
- Deleting remote subscribers
- Recording remote subscriber names

Remote Subscriber Administration Overview

During the initial administration process, two remote test subscribers were entered for each system in the network. If remote subscribers were not added during initial administration, you now need to add all remote subscribers who will exchange messages across the network. The DEFINITY AUDIX system offers an automatic method of administering remote subscribers called *remote updates*. Remote updates allow your local DEFINITY AUDIX system to exchange subscriber information with each DEFINITY AUDIX, Intuity, and AUDIX R1V5 or later remote system administered on the local system. The following list explains remote updates.

Complete Updates
During a complete update, all subscriber information is exchanged between systems. For example, 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 subscribers to the network. Complete updates may involve many thousands of users and require heavy system resources. Plan to have complete updates performed during non-prime-time hours to reduce the impact on system users.

Additionally, the local DEFINITY AUDIX system can automatically schedule a non-prime-time complete update from a remote system if the local system finds discrepancies between databases.

Partial Updates
Partial updates occur on a regular basis, such as weekly or nightly, to add or change information for subscribers. Partial updates would occur, for example, when a new subscriber is added to a remote or local system.

If all systems in the network are administered to allow partial updates, any time a subscriber is added to, deleted from, or changed on a system, that system will notify each system in the network of the change.

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Network Turnaround	Network turnaround allows networked systems to exchange information using one connection. For example, if a DEFINITY AUDIX system in New York calls a system in Chicago to send messages and give the Chicago system a subscriber update, the Chicago system can *turn around* and send messages and subscriber updates back to the New York system without ending the call. If network turnaround was turned off, the Chicago system would have to place a separate call to the New York system.

If network connection turnaround is implemented, the local system calls a remote system and does the following: notifies the remote system that it has updated subscriber information, requests updated subscriber information from the remote system, and sends voice mail and updated message status information to the remote system. The network connection is then *turned around* and the remaining events occur: the remote system notifies the local system that it has updated subscriber information, requests updated subscriber information from the local system, and sends voice mail and updated message status information to the local system. Network turnaround is recommended for networked DEFINITY AUDIX systems.

If the network turnaround feature is not implemented, the local machine calls a remote system and does the following: notifies the remote system of its updated subscriber information, requests updated subscriber information from the remote system, and sends voice mail and updated message status information to the remote system. The call is then disconnected.

The feature reduces long-distance toll charges by allowing systems to exchange information using one call instead of two. 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.

The remote updates feature greatly reduces the amount of time required by the administrator to administer digital networking. Whether you use the remote updates feature depends on the number of subscribers in your network, the size and disk space of your local system, and the number of networking ports that you are using. The design center will assist you with determining the best subscriber update process for your system. The instructions in this chapter explain how to perform the administration processes for remote subscriber updates.

> **NOTE:**
> Do not turn on the remote updates feature 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.

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

In addition to initially administering subscribers and determining your remote update strategy, you also need to check the system for non-administered verified remote subscribers. These are non-administered remote subscribers who successfully exchanged messages with the local DEFINITY AUDIX system. At the completion of a successful exchange, the local system creates a database entry for the subscriber. You need to check the List Remote Extensions screen and locate any non-administered verified remote subscribers. If a local subscriber regularly exchanges messages with the remote subscriber, you may want to add the person to the system as an administered remote subscriber and record a name for the person.

You may want to record names for the remote subscribers. The DEFINITY AUDIX system does not require you to record remote subscriber names, but a recorded name provides a friendly confirmation for callers when they address messages to remote subscribers.

Viewing the Remote Subscriber List

The remote subscriber list can help you locate non-administered verified remote subscribers and evaluate the usage dates of remote subscribers. You should regularly check the list to locate non-administered verified remote subscribers. These are remote subscribers who successfully exchanged messages with the local DEFINITY AUDIX system. At the completion of the successful exchange, the local system creates a database entry for the subscriber. The List Remote Extensions screen shows a value of `non-administered` for non-administered verified remote subscribers. Although there is a record for the subscriber, the name, name recording, and other information are not known to the system.

If a local subscriber regularly exchanges messages with a non-administered verified remote subscriber, administer the remote subscriber on your local system and record a name for the subscriber. You can tell how often messages are sent to a subscriber by checking the Usage Date field on the List Remote Extensions screen. The field also can help you determine if all of the administered remote subscribers need to be administered. If the Usage Date field does *not* show a recent date (you should determine how recent such as weeks or months), then the remote administered subscriber does not exchange messages with anyone on the local system. You can remove the subscriber and increase your disk space. You also can delete remote subscribers automatically. See in the next section of this chapter.

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Use the following instructions to access and view the List Remote Extensions screen.

1. With the cursor at enter command:, enter one of the following commands:

   list remote-extensions *remote machine name*

   list remote-extensions *remote machine name extension*

   where extension specifies the starting extension in the list.

   list remote-extensions *remote machine name extension type*

   where type specifies administered, verified, or unverified.

   list remote-extensions *remote machine name type*

   and press ENTER.

   If you do not know the names of the remote systems, use the list machines command described in Viewing the List Machines Screen earlier in this chapter. When you enter the command you see a list of all machines administered on the DEFINITY AUDIX system.

2. The List Remote Extensions screen displays similar to the screen shown below. The screen contains a list of all administered and verified non-administered remote subscriber for the machine name you entered.

```
dac          Active    Alarms:   wA  Thresholds: none              Logins: 1
list remote-extensions dab 50000
                     LIST REMOTE EXTENSIONS

Extension    Name                        Type          Usage Date
51783        Walter, Susan               administered  05/19/95
52268        Harris, Ron                 administered  05/19/95
52828        Scott, Marilyn              administered  05/19/95
52890        Foley, Sharon               administered  05/19/95
55148        Bates, Leonard              administered  05/19/95
55341        Abbott, Jane                administered  05/19/95
55389        Bates, Robert               administered  05/19/95
55612        Callahan, David             administered  05/19/95
55731        Jones, Lynn                 administered  05/19/95
55789        Callahan, Mary              administered  05/19/95
58553        Newman,Walter               administered  05/19/95
80773        James, Robert               administered  05/19/95
86326        Lowery,Peggy                administered  05/19/95
89571        Moore,Paula                 administered  05/19/95




enter command:
1Cancel   2Refresh  3Enter    4ClearFld 5Help    6Choices  7NextPage 8PrevPage
```

Figure 10-**5. List Remote Extensions Screen**

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3. Press NEXTPAGE (F7) to move to the next page of the screen or PREVPAGE (F8) to move to the previous page.

4. When you finish viewing remote subscriber information, press CANCEL (F1) and enter another command at the enter command: prompt or enter **logoff** to exit.

Setting Automatic Deletion of Non-Administered Remote Subscribers

You can request that non-administered remote subscribers be deleted automatically on the System Parameters Features screen. Use the following procedure:

1. With the cursor at enter command:, enter **change system-parameters features** and press ENTER. The System Parameters Features screen is displayed. Press NEXTPAGE (F7) until page 4 displays similar to the screen shown below.

```
dab          Active     Alarms:    A  Thresholds: none              Logins: 1
change system-parameters features                                   Page 4 of 4

                       SYSTEM-PARAMETERS FEATURES

NETWORKING PARAMETERS
          Automatic Deletion of Non-administered Remote Subscribers? y
          Days without Activity: 90             Even If on a Mailing List? n
          Machine Names: █

enter command: change system-parameters features
1Cancel    2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 10-6.   System Parameters Features Screen — Page 4

2. Enter a **y** in the Automatic Deletion of Non-Administered Remote Subscribers field to automatically delete remote subscribers. They will be removed during the nightly audit or the demand subscriber data audit. If this field is set to **n**, you will have to delete non-administered remote subscribers manually.

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3. Enter a number from 0 to 999 for the number of days in the Days without Activity field. This is the number of days that there is no activity for a remote subscriber before that subscriber is deleted.

4. Enter **y** in the Even if on a Mailing List field if you want remote subscribers deleted even if they are on a local DEFINITY AUDIX mailing list. The remote subscribers also are deleted from the mailing list(s) during the next audit. Enter **n** to retain remote subscribers who are on local DEFINITY AUDIX mailing lists.

5. Press (ENTER) (F3) to save the information in the DEFINITY AUDIX database.

6. When you finish, press (CANCEL) (F1) and enter another command at the enter command: prompt or enter **logoff** to exit.

Administering Remote Updates for the Local System

This section describes how you administer the remote updates feature on the local DEFINITY AUDIX system. During the initial administration tasks in Chapter 9, "Initial Network Administration and Acceptance Tests", the remote updates feature was disabled on the local system for acceptance tests and may not have been enabled after the tests. The instructions in this section explain how to enable the remote updates feature and administer the feature to work with your network.

Use the following instructions to access the Machine Profile screen and enable the remote updates feature.

1. With the cursor at enter command:, enter **change machine *machine name*** (the name of the local system) and press (ENTER). By not entering a machine name, the system automatically uses the local machine name.

Page 1 of the Machine Profile screen displays.

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2. Press NEXTPAGE (F7) to move to Page 2 of the screen similar to the screen shown below.

```
/dab         Active    Alarms:  m A  Thresholds: none              Logins: 1 \
 change machine dab                                            Page 2 of 2
                            MACHINE PROFILE

 NETWORK CONNECTION PARAMETERS
  Dial String: 6020
 Modem String:

 Data Rate: 64000                   Password:

 Log Connect Events? y              Network Turnaround? n

 Updates In? y  Out? y    Allow Automatic Full Updates? y





 _____
 enter command: change machine dab
 1Cancel   2Refresh 3Enter    4ClearFld 5Help    6Choices  7NextPage 8PrevPage /
```

Figure 10-7.   Machine Profile Screen for a Local Machine — Page 2

3. The following three fields control the remote updates feature:

- Allow Automatic Full Updates

- Updates In

- Updates Out

By setting the values to **y** or **n**, you control the actions of the remote updates feature. The following table shows how the feature works depending on the values you enter.

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Table 10-1.   Remote Update Field Values and Actions for the Local Machine

Local Machine Profile screen Fields

Allow Automatic Full Updates	Updates In	Updates Out	Remote Update Action
y	**y**	**y**	■ The local system accepts updated database information from any remote systems that have their Updates Out field set to **y**.
			■ The local system sends updated database information to any remote systems that have their Updates In field set to **y**.
			■ The local system automatically generates and schedules requests for complete updates from remote systems when the local system finds significant discrepancies with the database of a remote system.
y or **n**	**y**	**n**	■ The local system accepts updated database information from any remote systems that have their Updates Out field set to **y**.
			■ The local system will not send updated database information to remote systems.
			■ The local system will not allow complete updates. An **n** in the Updates Out field overrides a **y** in the full updates field

Continued on next page

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Table 10-1. Remote Update Field Values and Actions for the Local Machine — *Continued*

Local Machine Profile screen Fields

Allow Automatic Full Updates	Updates In	Updates Out	Remote Update Action
y or **n**	**n**	**y**	■ The local system does not accept updated database information from remote systems. ■ The local system sends updated database information to remote systems. ■ The local system will not allow complete updates. An **n** in the Updates In field overrides a **y** in the full updates field.
y or **n**	**n**	**n**	■ The local system does not accept updated information from remote systems. ■ The local system does not send updated database information to any remote systems. ■ The local systems will not allow complete updates. An **n** in either the Updates In or Updates Out field overrides a **y** in the full updates field.
n	**y** or **n**	**y** or **n**	■ The local system will not allow complete updates.

4. Enter **y** for yes or **n** for no in the Allow Automatic Full Updates field.

5. Enter **y** for yes or **n** for no in the Updates In and Updates Out field.

6. Enter **y** for yes or **n** for no in the Network Turnaround field.

   The network turnaround feature allows one system to call another and exchange voice messages, send updated subscriber information, and request updated subscriber 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.

7. When you finish entering remote system information, press (ENTER) (F3) to save the information in the system database. You receive the following confirmation message:

   Command Successfully Completed

8. When you finish, press (CANCEL) (F1) and enter another command at the enter command: prompt or enter **logoff** to exit.

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Administering Remote Updates for Remote Systems

This section describes how to administer the remote updates feature on the local DEFINITY AUDIX system for a remote system. During the initial administration tasks in Chapter 9, "Initial Network Administration and Acceptance Tests", the remote updates feature was disabled for acceptance tests and may not have been enabled after the tests. The instructions in this section explain how to enable the remote updates feature and administer the feature to work with your network.

Use the following instructions to access the remote Machine Profile screen and enable the remote updates feature.

1. With the cursor at `enter command:`, enter **change machine *machine name*** (the name of the remote system) and press (ENTER).

   Page 1 of the Machine Profile screen displays.

2. Press (NEXTPAGE) (F7) to move to Page 2 of the screen similar to the screen shown below.

```
dab         Active    Alarms:   wA  Thresholds: none              Logins: 1
change machine dac                                              Page 2 of 2
                           MACHINE PROFILE

NETWORK CONNECTION PARAMETERS
 Dial String: 14020
Modem String:

Data Rate: 56000       Password: █

Message Transmission Schedule (hh:mm)
  1.  Start: 00:02      End: 23:59     Interval: 00:05
  2.  Start:  :         End:  :        Interval:  :
  3.  Start:  :         End:  :        Interval:  :

Send to Non-Administered Recipients? y

Log Connect Events? y

Network Turnaround? n

Updates In? y  Out? y
_____
enter command: change machine dac
1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 10-8.   Remote Machine Profile Screen — Page 2

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3. Enter **y** for yes or **n** for no in the Send to Non-Administered Recipients field.

   If this field is set to **y**, the DEFINITY AUDIX system attempts to send messages addressed to subscribers who are not administered in the local database. For example, if a local subscriber addresses a message to a remote subscriber who is not in the database, the system will use the prefix and the address range and attempt to find a remote subscriber who matches. If this field is set to **n**, the DEFINITY AUDIX system will not attempt to send a message to a non-administered remote subscriber.

4. Enter **y** for yes or **n** for no in the Updates In and Updates Out field.

   The Updates In and Updates Out fields control the remote updates feature. By setting the values to **y** or **n**, you control the actions of the remote updates feature. The following table shows how the feature works depending on the values you enter.

Table 10-2. Remote Update Field Values and Actions for Remote Machines

Remote Machine Profile Screen Fields		
Updates In	**Updates Out**	**Remote Update Action**
y	**y**	■ The local system accepts updated database information from any remote systems that have their Updates Out field set to **y**.
		■ The local system sends updated database information to any remote systems that have their Updates In field set to **y**.
y	**n**	■ The local system accepts updated database information from any remote systems that have their Updates Out field set to **y**.
		■ The local system will not send updated database information to remote systems.
n	**y**	■ The local system does not accept updated database information from remote systems.
		■ The local system sends updated database information to remote systems.
n	**n**	■ The local system does not accept updated information from remote systems.
		■ The local system does not send updated database information to any remote systems.

5. Enter **y** for yes or **n** for no in the Network Turnaround field.

   The network turnaround feature allows the remote system to exchange voice messages, send updated subscriber information, and request updated subscriber information with a local system that has the network turnaround feature activated. The feature allows the remote system and the local system to exchange information using the same connection. A second call does not have to be made for the remote system to exchange information. The feature reduces toll charges and increases the efficiency of the system. It is recommended when networking DEFINITY AUDIX systems.

6. When you finish entering remote machine information, press ENTER (F3) to save the information in the system database. You receive the following confirmation message:

   Command Successfully Completed

7. When you finish, press CANCEL (F1) and enter another command at the enter command: prompt or enter **logoff** to exit.

Performing a Full Remote Update

This section describes how you perform or "get" remote updates on the local DEFINITY AUDIX system. You may need to perform a remote update to populate the subscriber database with remote subscribers or to correct database inconsistencies discovered during an audit. A full remote update may have been done during initial network administration. If you are adding less than the full database of remote subscribers from the remote system, manually add remote subscribers as described in the next section. Perform the following steps to do a full remote update to gather remote subscribers.

Use the following instructions to perform a full remote update.

1. At enter command: on the local DEFINITY AUDIX administration terminal, enter **list measurements feature day** and press ENTER to display the Feature Daily Traffic screen. Write down the current number of remote subscribers.

2. Enter **change machine *machine name*** (name of the local DEFINITY AUDIX system) and press ENTER to display the Machine Profile screen for the local DEFINITY AUDIX system**.** Press NEXTPAGE (F7) to display Page 2. Enter **y** for both the Updates In and Out fields if the fields are not set to y already. Refer to Administering Remote Updates for the Local System for a screen example.

3. Enter **change machine *machine name*** (name of the remote system) and press ENTER to display the Machine Profile screen for the remote system. Press NEXTPAGE (F7) to display Page 2. Enter **y** for both the Updates In and Out fields. Refer to Administering Remote Updates for the Local System for a screen example.

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4. Ask the system administrator at the remote system to change the remote system to allow updates to and/or from the remote system.

5. At enter command: on the local DEFINITY AUDIX administration terminal, enter **get remote-updates *machine name*** (name of the remote system) and press (ENTER) to copy all remote subscribers to the local DEFINITY AUDIX system.

> **⇒ NOTE:**
> This update may take some time, possibly hours, depending on the number of subscribers on the remote system. When the update is complete, this screen will show completed in the Status of Last Update field and show the date and time of the completion in the Last Completed Update field.

```
dab        Active    Alarms:  m A  Thresholds: none             Logins: 1
get remote-updates daa                                         Page 1 of 1
                          REMOTE UPDATE REQUEST


Request Full Update from Machine:  daa

          Status of Last Update:  pending

          Last Completed Update:

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




enter command: get remote-updates daa
1Cancel    2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 10-9.   Remote Update Request Screen

6. With the cursor at enter command:, enter **status network group** and press (ENTER). Look in the Activity column to see if the remote update is in progress.

7. When the remote updates procedure has completed, do the following:

   a. With the cursor at enter command:, enter **list remote extensions** and press ENTER. Check to see that the remote subscribers are on the local DEFINITY AUDIX system.

   b. Enter **list measurements feature day** and press ENTER to display the Feature Daily Traffic screen. Verify the new number of remote subscribers.

   c. Enter **display administration-log** and press ENTER to display the Administration Log screen. Verify that no conflicts or problems occurred with the remote update.

Manually Adding Remote Subscribers

The section contains instructions for manually administering remote subscribers. You must manually add remote subscribers to the local DEFINITY AUDIX system in the following situations:

- If you do not perform a full remote update when adding remote subscribers from a remote system to the local system

- If you do not have the Updates Out field set to yes on the remote Machine Profile screen and the Updates In field set to yes on the local Machine Profile screen. The remote system will send updated database information to the local DEFINITY AUDIX system.

Even if you do use the remote updates feature, you may need to add remote subscribers before the remote update occurs.

Use the following instructions to add remote subscribers.

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1. At `enter command:` on the local DEFINITY AUDIX administration terminal, enter **add remote-subscriber** and press ⏎ENTER⏎ to display the Remote Subscriber screen similar to the screen shown below.

```
dab          Active     Alarms:   wA  Thresholds: none                 Logins: 1
add remote-subscriber                                                 Page 1 of 1
                          REMOTE SUBSCRIBER

           Name: Phelps, Sam                      Extension: 54679
        Address: 54679

   Community ID: 1                             Administered? y
    Voiced Name?                        Non-Administered Type:

Last Usage Date:

                    Machine Names
              dac




Command Successfully Completed
enter command:
1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 10-10.   Add Remote Subscriber Screen

2. Enter the remote subscriber name in the Name field.

3. Enter the extension of the remote subscriber in the Extension field.

4. Enter the community ID number for the remote subscriber in the Community ID field.

   A *community* represents a group of subscribers assigned certain messaging privileges and restrictions. The feature can be used to group types of subscribers. A group can be restricted from receiving voice messages or from sending voice messages to other groups. Community ID is the number that identifies the community to which the remote subscriber belongs. The System Parameters Sending Restrictions screen specifies a matrix of sending restriction communities.

5. When you add a remote subscriber, the system automatically places a y in the Administered field.

   The field indicates whether the remote subscriber is administered or non-administered. If a remote system calls the local system and sends a message to a non-administered remote subscriber, the local system creates a verified remote subscriber record in the database and places an n for no in the administered field.

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6. The Voiced Name, Non-Administered Type, and Last Usage Date fields are display only. You cannot change the information in the fields.

   The Voiced Name field contains a **y** when a name has been recorded for the remote subscriber. If no name is recorded, the field contains an **n**.

   When the system sends a message to a non-administered verified remote subscriber, an entry is created in the subscriber database and the Administered field is set to **n**. The Non-Administered Type field contains the type of non-administered subscriber, such as **verified**.

   The DEFINITY AUDIX system automatically places the most recent date the remote subscriber received a message in the Last Usage Date field. The field helps you determine the call traffic for the subscriber.

7. Enter the remote machine name on the first line of the Machine Name field.

   The field must contain the remote machine name for the system on which the remote subscriber is located. Make sure you enter the machine name correctly. The machine name you enter must match exactly the name assigned on the remote Machine Profile screen. You can enter only one machine name for an administered subscriber. Non-administered, non-verified subscribers may have up to 16 machine names. However, you do not enter the information for this type of subscriber. You may access such a subscriber during your daily, weekly, or monthly administration processes.

8. Press ENTER (F3) to add the remote subscriber information to the database.

   After you press the key, you see the following message at the bottom of the screen:

   Command Successfully Completed

9. Repeat steps 1 through 8 for each remote subscriber you need to add.

10. When you finish, press CANCEL (F1) and enter another command at the enter command: prompt or enter **logoff** to exit.

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Manually Updating Remote Subscriber Administration

The instructions in this section explain how to update remote subscriber information. If you decide not to use the remote updates feature, you must manually update remote subscriber information if the information changes. Even if you do use the remote updates feature, you may need to change remote subscriber information before the remote update occurs, such as the Community ID or the Extension.

> **NOTE:**
> If you do not know the remote subscriber extensions, use the **list remote-extension** *machine name* command as described in Viewing the Remote Subscriber List in this chapter. When you enter the command, you see a list of subscribers administered on the local DEFINITY AUDIX system for the remote system.

Use the following instructions to change remote subscriber information.

1. At enter command: on the local DEFINITY AUDIX administration terminal, enter **change remote-subscriber** *extension* and press ENTER to display the Remote Subscriber screen for the extension number entered, similar to the screen shown below.

```
dab          Active     Alarms:   wA  Thresholds: none              Logins: 2
change remote-subscriber 54679                                     Page 1 of 1
                         REMOTE SUBSCRIBER

          Name: Phelps, Sam                    Extension: 54679
       Address: 54679

   Community ID: 1                          Administered? y
    Voiced Name? n                 Non-Administered Type:

Last Usage Date: 05/22/95

                    Machine Names
              dac          █




enter command: change remote-subscriber 54679
 1Cancel   2Refresh  3Enter    4ClearFld 5Help    6Choices  7NextPage 8PrevPage
```

Figure 10-11.   Change Remote Subscriber Screen

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2. Use TAB or ENTER to move the cursor to the field you need to change and update the information. You can change the value in any field except the Address, Voiced Name, and Non-Administered Type fields. These fields are display only.

The Voiced Name field contains a **y** when a name has been recorded for the remote subscriber. If no name is recorded, the field contains an **n**.

When the system sends a message to a non-administered, verified remote subscriber, an entry is created in the subscriber database and the Administered field is set to **n**.

The Non-Administered Type field contains the type of non-administered subscriber, such as **verified**.

The DEFINITY AUDIX system automatically places the date the remote subscriber last received a message in the Last Usage Date field. The field helps you determine the call traffic for the subscriber.

3. When you finish updating information, press ENTER (F3) to save your changes in the database.

4. Repeat steps 1 through 3 for each remote subscriber you need to update.

5. When you finish, press CANCEL (F1) and enter another command at the enter command: prompt or enter **logoff** to exit.

Deleting Remote Subscribers

This section contains instructions for manually removing remote subscribers. You may need to remove remote subscribers from the local system. For example, if you find an administered remote subscriber with an old last usage date, you can delete the subscriber and save system resources. If you decide not to use the remote updates feature, you must manually remove remote subscribers when necessary.

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Use the following instructions to delete remote subscriber information.

1. At enter command: on the local DEFINITY AUDIX administration terminal, enter **remove remote-subscriber** *extension* and press (ENTER) to display the Remote Subscriber screen for the extension number entered, similar to the screen shown below.

```
dab          Active    Alarms:   w   Thresholds: none              Logins: 2
remove remote-subscriber 54679                                  Page 1 of 1
                         REMOTE SUBSCRIBER

            Name: Phelps, Sam                    Extension: 54679
         Address: 54679

   Community ID: 1                            Administered? y
    Voiced Name? n                 Non-Administered Type:

Last Usage Date: 05/22/95

                     Machine Names
                dac




Press [Enter] to execute or [Cancel] to abort
enter command: remove remote-subscriber 54679
1Cancel   2Refresh 3Enter    4ClearFld 5Help    6Choices  7NextPage 8PrevPage
```

Figure 10-12.   Delete Remote Subscriber Screen

The following message displays at the bottom of the screen.

Press [Enter] to execute or [Cancel] to abort

2. Press (ENTER) (F3) to delete the remote subscriber or press (CANCEL) (F1). After you press Enter, the system deletes the remote subscriber and you see the following message:

   Command Successfully Completed

3. Repeat steps 1 and 2 for each remote subscriber you need to delete.

4. When you finish, press (CANCEL) (F1) and enter another command at the enter command: prompt or enter **logoff** to exit.

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Recording Remote Subscriber Names

After you administer the remote subscribers, you need to record the subscribers' names. The DEFINITY AUDIX system does not require you to record remote subscriber names, but the feature provides a friendly confirmation for callers when they address voice messages to remote subscribers.

On the System Parameters Features screen, the Name Record by Subscriber field must be set to **y**. The extension you use to record names must have Announcement Control set to **y** on the Subscriber Class of Service screen.

To record a remote subscriber name, use the telephone to enter a remote subscriber extension, then speak the person's name. The DEFINITY AUDIX system records each name as you say the name. The DEFINITY AUDIX system allows you to record many names at one time. Use the following procedure to record remote subscriber names.

1. Using the telephone, dial the DEFINITY AUDIX system extension. When the system answers, you hear the following prompt:

   Please enter extension and pound sign.

2. Enter the DEFINITY AUDIX administrator's extension and press #. You hear the following prompt:

   Enter password and pound sign.

3. Enter the administrator's password and press #. You hear the following prompt:

   To record messages, press 1. To get ...

4. Press 9 to access the system administrator's menu. You hear the following prompt:

   To record names...

   ⇒ **NOTE:**
   The voice menu does not speak an option for keypad button 9. The option is a hidden menu option for the administrator login.

5. Press 4 to record the remote subscriber names. You hear the following prompt:

   Please enter extension and pound sign.

6. Enter the extension for the remote subscriber, and press #.

   After you enter the remote subscriber extension, you hear the following prompt:

   When finished recording, press # to approve or 1 to edit your message. Record at the tone.

7. When you hear the tone, speak the subscriber's name.

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8. Press ① to edit the recording, or press ⌗ to approve the recording.

- If you press ① to stop recording, you hear the following prompt:

  To approve, press ⌗. To record from here, press ①. To play back, press ② ③.

  Before you approve the recording, you have the following options:

  — Press ② ③ to listen to the remote subscriber name recording.

  — Press ② ① to record the remote subscriber name again.

  — Press ✱ Ⓓ to delete the remote subscriber name recording.

- When you press ⌗ to approve the recording, you hear the following prompt:

  *Please enter extension and pound sign or press *R.*

9. Enter another extension and ⌗ sign to record the next remote subscriber name.

10. When you finish recording all remote subscriber names, hang up the phone.

If you want to verify that the DEFINITY AUDIX system successfully recorded the name, use the **display remote-subscriber** *extension* command to access the Remote Subscriber screen. The Voiced Name field should contain the value **y**.

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Networking Reports

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DEFINITY AUDIX digital networking gathers information on the status of the system and makes the information available to you in a series of reports. This chapter describes the contents of those reports and tells you how to access them. Reports provide statistics on how the system is being used. They also can help you identify the source of any problems you may encounter. Check the reports regularly to ensure the efficient operation of the system. This chapter describes the following information:

- How to access the reports

- Description of the Network Load Hourly Traffic report

- Description of the Network Load Daily Traffic report

- Description of the Remote Messages Daily Traffic report

- Description of the Remote Messages Monthly Traffic report

- Field descriptions of the reports

Network Load Hourly Traffic Report

The Network Load Hourly Traffic report provides information on the amount of traffic using the DEFINITY AUDIX networking ports for a specified day and hour.

⚠ CAUTION:

If the system goes down (looses power or reboots), traffic data for the hour during which the system went down is lost.

With the cursor at enter command:, enter **list measurements network-load hour *date hour*** and press ENTER. The ***date*** is in the format mm/dd/yy. The ***hour*** ranges from 0 (for midnight to 1 a.m.) to 23 (for 11 p.m. to midnight). If you do not enter a date and hour, the current date and hour are used.

⟹ NOTE:

The DEFINITY AUDIX system maintains traffic data by the hour for the current day and the previous seven days. You can page forward from the date and hour entered to the current date and hour by selecting NEXTPAGE (F7). After paging forward, you can page backward to the date and hour entered by selecting PREVPAGE (F8).

The Network Load Hourly Traffic report displays similar to the screen shown below:

```
stcle1     Active     Alarms:     A  Thresholds: none                Logins: 2
list measurements network-load hour
                        NETWORK LOAD HOURLY TRAFFIC

    Date : 05/11/95    Hour: 16                  Ending Time: 16:04

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




NETWORK CHANNEL          USAGE (SECONDS)         PEG COUNT (NUMBER OF CALLS)
Number  Type      Incoming  Outgoing   Total     Incoming  Outgoing   Total
   1:     dcp        0        396       396         0          3         3
   2:     dcp        0         0         0          0          0         0




enter command:
 1Cancel   2Refresh  3Enter    4ClearFld 5Help    6Choices  7NextPage 8PrevPage
```

Figure 11-1.   Network Load Hourly Traffic Report

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Network Load Daily Traffic Report

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The report shows you the hourly network load traffic information for the date and hour displayed in the Date and Hour fields. The section, Network Load Field Descriptions, describes each of the fields on the report and the type of information you can view in those fields.

Network Load Daily Traffic Report

The Network Load Daily Traffic report provides information on the amount of traffic using the DEFINITY AUDIX networking ports on a specified day.

With the cursor at enter command:, enter **list measurements network-load day *mm/dd/yy*** and press ENTER. If you do not enter a date, the current date is used.

> **NOTE:**
> The DEFINITY AUDIX system maintains traffic data for the current day and the previous seven days. You can page forward from the date entered to the current date by selecting NEXTPAGE (F7). After paging forward, you can page backward to the date entered by selecting PREVPAGE (F8).

The Network Load Daily Traffic report displays similar to the screen shown below.

```
stcle1      Active    Alarms:    A   Thresholds: none                    Logins: 2
list measurements network-load day
                        NETWORK LOAD DAILY TRAFFIC

    Date : 05/11/95                         Ending Time: 16:02

Total Message Transmission Threshold Exceptions: 0
Total Message Transmission Limit Exceptions   : 0
Remote Deliveries Rescheduled                 : 2
Maximum Simultaneous Channels                 : 2
Total Incoming Calls Unanswered               : 0
Total Remote Undeliverable Messages           : 0



NETWORK CHANNEL          USAGE (SECONDS)          PEG COUNT (NUMBER OF CALLS)
Number  Type      Incoming  Outgoing    Total     Incoming  Outgoing    Total
   1:    dcp        8688     26467      35155        149       299        448
   2:    dcp       12578     17150      29728        181       173        354



enter command:
1Cancel   2Refresh  3Enter    4ClearFld 5Help     6Choices  7NextPage 8PrevPage
```

Figure 11-2.   Daily Network Load Traffic Report

The report shows you the daily network traffic information for the date displayed in the Date field. The section, Network Load Field Descriptions, describes each of the fields on the report and the type of information you can view in those fields.

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Network Load Field Descriptions

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Network Load Field Descriptions

The following field descriptions provide information on how to interpret the Network Load Hourly Traffic report and the Network Load Daily Traffic report.

Total Message Transmission Threshold Exceptions

When a subscriber sends a voice message to a remote subscriber, the system places the message in a message queue and DEFINITY AUDIX digital networking attempts to send the message. When the total outgoing queue exceeds 150, the Total Message Transmission Threshold Exceptions field increases by one. If you see a large number in the Total Message Transmission Threshold Exceptions field, digital networking has a problem and cannot transmit messages.

To correct the problem, check the maintenance log for alarms. The problems may be occurring due to facility problems, an out-of-service remote system, or a remote system experiencing heavy traffic, causing messages not to be delivered.

Total Message Transmission Limit Exceptions

This field is related to the Total Message Transmission Threshold Exceptions field. When the message transmission queue reaches 250 messages, the queue stops accepting messages and increases the Total Message Transmission Limit Exceptions field by one. When this occurs, digital networking will neither accept messages nor queue messages to be sent out.

To correct the problem, check the maintenance log for alarms. The problems may be occurring due to facility problems, an out-of-service remote system, or a remote system experiencing heavy traffic, causing messages not to be delivered.

Remote Deliveries Rescheduled

This field contains the number of voice messages that have been rescheduled for another delivery. The original delivery of the message did not occur or complete due to low disk space, a full mailbox, faulty transmission equipment, or an out-of-service remote system.

Maximum Simultaneous Channels

This field shows you the total number of networking ports being used at one time.

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Network Load Field Descriptions

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Total Incoming Calls Unanswered

This field shows the total incoming networking calls that were unanswered by the DEFINITY AUDIX system.

Total Remote Undeliverable Messages

This field shows you the total number of messages that the network cannot send due to sending restrictions, community ID settings, or addressing to a broadcast mailbox or full mailbox. The messages are tagged as undeliverable.

Network Channel Number

The network channel number field shows the network port for which information is being reported.

Network Channel Type

The network channel type field shows the type, DCP, for each port.

Usage

The usage fields, Incoming, Outgoing, and Total, show information for the number of seconds calls remain active on a networking port. Use the information in this section of the report to help you determine the traffic crossing each networking port.

Incoming

This field shows you the time a port has been used for incoming calls.

Outgoing

This field shows you the time a port has been used to complete outgoing calls.

Total

This field shows you the total time a port has been used to complete a voice message transaction, incoming and outgoing.

PEG Count

The PEG count fields, Incoming, Outgoing, and Total, show the total number of calls transacted by DEFINITY AUDIX digital networking. The fields can help you see how the number of calls received compares to the number of calls sent. For example, if you see a lower number of PEG Count Outgoing calls and a lower Usage Outgoing time on the same port, that port may have a problem and you should perform networking diagnostics on that port.

Incoming

This field contains the total number of incoming calls for each port.

Outgoing

This field contains the total number of outgoing calls for each port.

Total

This field contains the total number of calls, incoming and outgoing, for each port.

Remote Messages Daily Traffic Report

The Remote Messages Daily Traffic screen displays up to eight days — today or the date entered and the seven previous days — of information about message traffic between the local DEFINITY AUDIX system and the named remote system. The information is presented for prime time and nonprime time periods.

With the cursor at `enter command:`, enter:
list measurements remote-messages day *machine-name*
 or
list measurements remote-messages day *machine-name mm/dd/yy*
and press (ENTER). If you do not enter a date, the current date is used.

⇒ NOTE:

The DEFINITY AUDIX system maintains traffic data for the current day and the previous seven days. You can page forward from the date entered to the current date by selecting (NEXTPAGE) (F7). After paging forward, you can page backward to the date entered by selecting (PREVPAGE) (F8).

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Remote Messages Daily Traffic Report

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The Remote Messages Daily Traffic report displays similar to the screen shown below.

```
stcle1     Active    Alarms:    A  Thresholds: none              Logins: 2
list measurements remote-messages day STS02
                       REMOTE MESSAGES DAILY TRAFFIC

Machine Name : STS02                      Machine Type: audix
        Date : 05/11/95                   Ending Time : 15:48

                  LOCAL ORIGINATION       REMOTE ORIGINATION
                  Prime   Non-Prime       Prime    Non-Prime
Transfer Sessions: 74      54             30       10
Usage (seconds) : 6420     3977           1859     483
Average Usage   : 86       73             61       48
Messages Sent   : 75       86             146      31
Messages Rejected: 0       0              0        0
Status Sent     : 121      13
Status Received :                         119      66
Admin Updates   : 0        0              0        0

Message Transmission Threshold Exceptions: 0
Session Failures       Far End "No Answer": 0
Message Queued         Voice Mail: 0      Status: 0


enter command:
1Cancel    2Refresh  3Enter     4ClearFld 5Help      6Choices  7NextPage 8PrevPage
```

Figure 11-3.   Remote Messages Daily Traffic Report

The report shows you the daily remote messages traffic information for the date displayed in the Date field. The section, Remote Messages Field Descriptions, describes each of the fields on the report and the type of information you can view in those fields.

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11 Networking Reports
Remote Messages Monthly Traffic Report

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Remote Messages Monthly Traffic Report

The Remote Messages Monthly Traffic screen displays information — for the current month or the month entered — about message traffic between the local DEFINITY AUDIX system and the named remote system. The information is presented for prime time and nonprime time periods.

With the cursor at `enter command:`, enter:
list measurements remote-messages month *machine-name*
 or
list measurements remote-messages month *machine-name mm/yy*
and press (ENTER). If you do not enter a date, the current date is used.

> **NOTE:**
> The DEFINITY AUDIX system maintains traffic data for the current month and the previous 12 months. You can page forward from the month entered to the current month by selecting (NEXTPAGE) (F7). After paging forward, you can page backward to the month entered by selecting (PREVPAGE) (F8).

The Remote Messages Monthly Traffic report displays similar to the screen shown below

```
stcle1      Active      Alarms:      A  Thresholds: none                    Logins: 2
list measurements remote-messages month STS02
                          REMOTE MESSAGES MONTHLY TRAFFIC

Machine Name : STS02                          Machine Type: audix
        Date : 05/95                          Ending Date : 05/11/95

                      LOCAL ORIGINATION       REMOTE ORIGINATION
                      Prime    Non-Prime       Prime    Non-Prime
Transfer Sessions: 94        97               31        11
Usage (seconds) : 13527      12523            1880      519
Average Usage   : 143        129              60        47
Messages Sent   : 100        155              153       31
Messages Rejected: 0         0                0         0
Status Sent     : 124        15
Status Received :                             124       66
Admin Updates   : 0          1686             939       0

Message Transmission Threshold Exceptions: 0
Session Failures      Far End "No Answer": 6
Message Queued        Voice Mail: 0        Status: 0


enter command:
 1Cancel    2Refresh  3Enter     4ClearFld 5Help      6Choices  7NextPage 8PrevPage
```

Figure 11-4.   Remote Messages Monthly Traffic Report

The report shows you the monthly remote messages traffic information for the date displayed in the Date field. The section, Remote Messages Field Descriptions, describes each of the fields on the report and the type of information you can view in those fields.

Remote Messages Field Descriptions

The following field descriptions provide information on how to interpret the Remote Messages Daily Traffic and Remote Messages Monthly Traffic screens.

Machine Name

The remote machine name as entered on the command line.

Machine Type

The type of the remote machine — **audix** for the DEFINITY AUDIX system and the Intuity AUDIX system or **r1aud** for the AUDIX R1 system.

Date

For the daily report, this is either the current date or the date entered on the command line in mm/dd/yy format. For the monthly report, this is either the current month or the month entered on the command line in mm/yy format.

Ending Date (Monthly Report)

The date that record collecting ended. If the month of the traffic report is the current month, this is the current day.

Ending Time (Daily Report)

The time that record collecting ended. If the day of the traffic report is the current date, this is the current time.

Transfer Sessions

The number of sessions used for transferring messages to the remote system. Values are for prime-time and nonprime-time local origination and prime-time and nonprime-time remote origination.

Usage

The number of seconds for all message-transfer sessions for prime-time local origination, nonprime-time local origination, prime-time remote origination, and nonprime-time remote origination.

Average Usage

The average number of seconds for message-transfer sessions for prime-time local origination, nonprime-time local origination, prime-time remote origination, and nonprime-time remote origination.

Messages Sent

LOCAL ORIGINATION: the total number of messages sent from the local DEFINITY AUDIX system to the remote system during prime time and nonprime time.

REMOTE ORIGINATION: the total number of messages received from the remote system by the local DEFINITY AUDIX system during prime time and nonprime time.

Messages Rejected

LOCAL ORIGINATION: the total number of messages from the local DEFINITY AUDIX system rejected by the remote system during prime time and nonprime time.

REMOTE ORIGINATION: the total number of messages from the remote system rejected by the local DEFINITY AUDIX system during prime time and nonprime time.

Status Sent

The number of status reports sent by the local DEFINITY AUDIX system to the remote system during prime time and nonprime time for messages originated by the remote system.

Status Received

The number of status reports received by the local DEFINITY AUDIX system from the remote system during prime time and nonprime time for messages the local system sent to the remote system.

Admin Updates

LOCAL ORIGINATION: the number of administration updates sent by the local DEFINITY AUDIX system to the remote system during prime time and nonprime time.

REMOTE ORIGINATION: the number of administration updates sent by the remote system to the local DEFINITY AUDIX system during prime time and nonprime time.

Message Transmission Threshold Exceptions

The total number of times the local DEFINITY AUDIX system exceeded its message-transmission threshold with the specified remote system.

Session Failures Far End "No Answer"

The total number of unsuccessful call attempts from the local DEFINITY AUDIX system to the remote system.

Messages Queued Voice Mail

The number of voice mail messages currently in the local DEFINITY AUDIX queue to send to the remote system.

Messages Queued Status

The number of status messages currently in the local DEFINITY AUDIX queue to send to the remote system.

DEFINITY AUDIX System Digital Networking *585-300-534*

Issue 2
May 1999

11 Networking Reports
Remote Messages Field Descriptions

11-12

Considerations for Non-United States

A
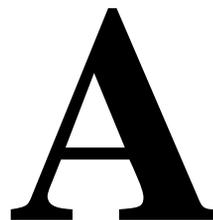
Modem Type Approval

At the time of this writing, the following modems had been type approved for the countries indicated:

Country	Modem
Argentina	Paradyne Comsphere 3820
Australia	Paradyne Comsphere 3910
Belgium	Paradyne Comsphere 3910
Brazil	To be determined
Canada	Paradyne Comsphere 3820/3820 Plus
China	Paradyne Comsphere 3820
Czech Republic	Paradyne Comsphere 3910
Egypt	Paradyne Comsphere 3910
France	Paradyne Comsphere 3910
Germany	Paradyne Comsphere 3820
Greece	To be determined
Hong Kong	Paradyne Comsphere 3820
India	Paradyne Comsphere 3910
Ireland	Paradyne Comsphere 3810
Italy	Paradyne Comsphere 3810
Japan	Paradyne Comsphere 3810

Country	Modem
Mexico	Paradyne Comsphere 3820
Netherlands	Paradyne Comsphere 3910
Poland	To be determined
Puerto Rico	Paradyne Comsphere 3820/3820 Plus
Russia	Paradyne Comsphere 3910
Saudi Arabia	Paradyne Comsphere 3810
Singapore	Paradyne Comsphere 3820
Spain	Paradyne Comsphere 3910
Thailand	Paradyne Comsphere 3810
U.S.	Paradyne Comsphere 3820/3820 Plus
U.K.	Paradyne Comsphere 3810
Venezuela	Paradyne Comsphere 3820

Design, Implementation, and Support

All non-U.S. digital networks must be designed and technically assured by either the International Technical Assistance Center (ITAC) or Centers of Excellence (COE). The customer, account team, and ITAC or COE must work together to complete the preplanning process. Installation and maintenance support of digital networks will only be offered to those customers/account teams who follow this design process. Refer to Chapter 7, "Digital Network Planning", for the planning process and worksheets.

Contact the ITAC or COE for technical assistance during and after digital networking implementation.

Abbreviations

A

AC
alternating current

ACD
automatic call distribution

ADAP
administration and data acquisition package

ADU
asynchronous data unit

ALT
assembly load and test

AMIS
Audio Messaging Interchange Specification

API
application programming interface

AUDIX
Audio Information Exchange

AWG
American wire gauge

B

BIOS
basic input/output system

bps
bits per second

BRI
basic rate interface

BSC
binary synchronous communications

BTU
British thermal unit

C

CCA
call classification analysis

CDH
call data handler process

CELP
code excited linear prediction

CIC
customer information center

CICS
customer information control system

CL
control link

CMC
Compact Modular Cabinet

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

CPU
central processing unit

CSI
called subscriber information

CTS
clear to send

D

DAC
dial access code

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

DOSS
> Delivery Operations Support System

DS
> display set

DSP
> digital signal processor

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
> Fahrenheit

FIFO
> first-in first-out

FOOS
> facility out of service

G

GBCS
> Global Business Communications Systems

GOS
> grade of service

H

Hz
> hertz

I

IDI
> isolating data interface

IMAPI
> INTUITY messaging application programming interface

IMM
> INTUITY Message Manager

INADS
> initialization and administration system

I/O
> input/output

IRQ
> interrupt request

ISDN
> integrated services digital network

IVC6
integrated voice CELP card (6 channels)

K

Kbps
kilobits per second

KB
kilobyte (1024 bytes)

kHz
kilohertz

L

LAN
local area network

LCD
liquid crystal display

LED
light-emitting diode

LWC
leave word calling

M

m
meter

MANOOS
manually out of service

MB
megabyte (one million bytes)

MCC
Multi-Carrier Cabinet

MHz
megahertz

MO
magneto-optical

modem
modulator/demodulator

MPDM
modular processor data module

ms
millisecond

MT
maintenance (Lucent INTUITY software component)

MTBF
mean time between failures

MWI
message-waiting indicator

N

NW
INTUITY AUDIX Digital Networking

O

OA&M
operations, administration, and maintenance

OS
operating system

P

PBX
private branch exchange

PC
power converter or personal computer

PDM
processor data module

PEC
price element code

PGATE
Processor Gateway

PI
Processor Interface

POST
power-on self test

ppm
> parts per million

psi
> pounds per square inch

R

RAM
> random-access memory

REN
> ringer equivalence number

ROM
> read-only memory

RSC
> Lucent's Remote Services Center

RTS
> request to send

RTU
> right to use

S

SCC
> Single-Carrier Cabinet

SCSI
> small computer systems interface

SID
> switch integration device

SIMM
> single in-line memory module

SMSI
> simplified message service interface

SW
> switch integration (Lucent INTUITY software component)

T

TDD
> telecommunications device for the deaf

TDM
> time division multiplex

T/R
> tip/ring

TRIP
> tip/ring input process

TSC
> Lucent's Technical Services Center

TTY
> teletypewriter

U

UCD
> uniform call distribution

UPS
> uninterruptible power supply

V

VM
> INTUITY AUDIX Voice Messaging

VP
> voice platform (INTUITY software component)

VR
> INTUITY Intro Voice Response

VROP
> voice response output process

Glossary

NUMERIC

10BaseT
A network baseband medium using twisted pair wire, operating at 10 Mbits per second.

A

Activity Menu
The list of main options voiced to subscribers when they access the DEFINITY AUDIX System.

Administration
The process of setting up a system (such as a switch or a voice mail system) so that it will function as desired. Options and defaults are normally set up (translated) by the system administrator or remote services personnel.

Alarm Board (ALB)
For release 3.2 and earlier versions, the hardware platform (TN2169 or TN2170) that works with the Multifunction board to provide monitoring for system power and environmental status, -48 VDC to +12 VDC power conversion for the system's disk and tape drives, and remote terminal access. The TN2170 also provides SCSI-to-Ethernet connectivity to support IMAPI.

Alarms
Hardware, software, or environmental problems that may affect system operation. These faults are classified as *major*, *minor*, or *warning*. They are recorded into an alarm log which can be accessed either locally or remotely on a terminal connected to the system.

Analog Port Emulation
One of the two port emulation modes that DEFINITY AUDIX may employ. The other mode is digital port board emulation. When emulating an analog port board (the TN746), only control link (CL) integration is possible.

Angel
A processor activity that exchanges TDM bus control messages and performs functions associated with call setup and port maintenance.

Announcement Fragment
A numbered piece of spoken voice mail information that makes up a system message or prompt.

Announcement Set
A set of audible menus the DEFINITY AUDIX system uses to prompt subscribers or callers for command choices.

Asynchronous Transmission
A form of serial communications where each transmitted character is bracketed with a start bit and one or two stop bits.

Asynchronous Data Unit (ADU)
A small device that can extend data transmission far beyond recommended Electronic Industries Association (EIA) limits over building wiring.

Audio Messaging Interchange Specification (AMIS)
An analog networking feature that allows subscribers of different voice mail systems to send voice mail messages to one another.

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.

Audio Information Exchange (AUDIX)
A complete voice-mail messaging system accessed and operated by touch-tone telephones and integrated with a switch.

AUDIX Administration and Data Acquisition Package (ADAP)
A software package that allows the DEFINITY AUDIX administrator to transfer system subscriber, maintenance, or traffic data over the administration port to a personal computer (PC) or Work Group System (WGS).

Automated Attendant
A DEFINITY AUDIX feature that allows a customer to set up a main number with a menu of options that routes callers to an appropriate department at the touch of a button.

B

Backup
A duplicate copy of a filesystem saved on a removable tape or MO disk. The backup filesystem may be copied back (restored) if the active version is damaged (corrupted) or lost.

Balun
On the DEFINITY AUDIX LAN connection, the adapter needed to connect the twisted-pair break-out cable to the coaxial building wire distribution system.

Baud Rate
Transmission signaling speed.

Boot (or Reboot)
The operation to start a computer system by loading programs from disk to main memory (part of system initialization).

Boot Filesystem
The filesystem from which the system loads its initial programs.

Broadcast Messaging
A feature that enables the system administrator and other designated users to send a voice mail message to all subscribers automatically.

Buffer
Memory used to compensate for time differences in transmission by temporarily storing data.

Busyout Service
When a technician or administrator blocks service to keep customers from using faulty equipment until it can be repaired or tested. For instance, when ports (or a link) are busied out, subscribers who try to access their mailboxes hear a *fast busy* reorder tone. People who would normally reach DEFINITY AUDIX through Call Answering are not forwarded; they hear ringing and no answer at the number they called.

C

Call Answer

A feature that allows the system to answer a call and record a message when the subscriber is unavailable. Callers may be redirected to the system through the call coverage or Call Forwarding switch features. Subscribers may record a personal greeting for these callers.

Call Answer Language Choice

Call answer multilingual option where a user can alternate between a primary language set and a secondary language. The two languages are administered on a per subscriber basis. If this feature is enabled, the subscriber may not use the standard DEFINITY AUDIX Multiple Personal Greetings feature.

Camp-On

A system shutdown option that waits for ports to become idle before blocking service to them. This allows subscribers to finish calls in progress.

Central Office (CO)

A main telephone office where private customer lines are terminated and connected to the public network through common carriers.

Central Processing Unit (CPU)

The Multifunction board's main processor that controls system data transfer, input/output (I/O), and logical instructions.

Class of Service (COS)

The standard set of features given to subscribers when they are first administered (set up with a voice mailbox).

Command Mode

A system state in DEFINITY AUDIX system releases earlier than 4.0 where flashware is in control and software is shut down. In this state, a technician has access to menu options to see flashware status and initialization history, run through flashware diagnostics, and to start or continue system initialization.

Configuration

The particular composition and hardware selected for a system, including internal options and peripheral equipment.

Control Link (CL)

The integration, or interface, between the DEFINITY AUDIX System and the switch that enables the transmission of control messages from the DEFINITY AUDIX System to the switch over a DCIU data link. The control messages are transmitted over a separate cable connection and carry information such as calling-party identification and message-waiting indicator status and control.

Control Link Mode

The type of switch-link integration for which the DEFINITY AUDIX System, R2.0 or later, is connected to the switch via analog-line card emulation and a digital connection.

D

Delivery Operations Support System (DOSS) Configurator
Lucent Technologies' algorithmic system for configuring products for customers' specific needs.

Digital Communications Protocol (DCP)
An Lucent Technologies proprietary protocol for networking remote communication systems.

DCP Mode 1
A Lucent Technologies proprietary Digital Communications Protocol (DCP) connection using a data rate of 56 Kbps for AUDIX Digital Networking. DCP Mode 1 uses a DS1 facility on the switch or a dedicated facility on the switch or a dedicated facility on a T1 carrier.

DCP Mode 2
DCP Mode 2 is an asynchronous, low-speed (9600 or 19,200 bps) connection for AUDIX Digital Networking. DCP Mode 2 uses a modem/data module or modem/Asynchronous Data Unit (ADU) arrangement and connects over analog or voice-grade data lines.

DCP Mode 3
A DCP connection using a data rate of 64 Kbps for AUDIX Digital Networking. DCP Mode 3 uses a DS1 or ISDN facility on the switch or a dedicated facility on a T1 carrier.

Default
A value that is automatically supplied if no other value is specified.

Digital-Port (DP) Mode
The type of switch-link integration for which the DEFINITY AUDIX System, up through release 3.1, is connected to the switch via digital port board emulation. The type of port board that the DEFINITY AUDIX emulates within the switch (TN754.)

Digital-Port (DP) Board Emulation
In R3.1 and earlier releases, this term referred to both the port emulation and to the integration method. In R3.2 and later, it refers to the port emulation only; the integration method can be either control link (CL) or display set (DS).

Digital Signal Processor (DSP)
Programmed RAM chips on the Multifunction board that provide signaling, power-level control, speech coding, and data processing.

Display Set (DS) Integration
A new term that replaces the term digital port integration for R3.2 and later. It refers to the use of the display and other messages sent from the switch to the port board for providing voice mail integration with the switch. Integration with the switch is achieved via display set messages. The messages carry information such as calling party identification and message waiting indicator status and control.

Disconnect Signaling Detection
Signaling from the CO to the PBX which indicates that the far end caller has hung up.

Dual Language Greetings
When the Call Answer Language Choice is in effect, the subscriber can record personalized greetings for each of the languages listed as the primary and secondary announcement sets. The subscriber instructs the caller to enter *1 to switch to the alternate language.

E

Errors

Problems detected by the system during automatic self-tests and recorded in an error log. Errors can produce an alarm (fault) if they exceed a threshold.

Events

Occurrences such as inline errors, maintenance procedure failures, alarms, errors, or transitions into or out of the *AUDIX* or *OA&M* states which are recorded in an events log.

F

Faceplate and Alarm Controller (FAC)

For release 3.2 and earlier versions, the circuitry on the Multifunction board that monitors activity of the DEFINITY AUDIX System.

Field

An area on a form, menu, or report where information can be typed or displayed.

Filesystems

A collection of related files (programs or data) stored on disk that are required to initialize a DEFINITY AUDIX System and provide full service.

Flashware

Code that is stored in electrically reprogrammable memory on the DEFINITY AUDIX System. This programming is retained over power outages but can be reprogrammed automatically on board during initialization.

Forms

Terminal screens of information that allow data to be displayed or changed.

G

Generic Tape or Generic Disk

A copy of the standard software and standalone tape utilities (standalone utilities in Release 4.0) that is shipped with a new system.

Graceful Shutdown

Taking the DEFINITY AUDIX System offline (to the maintenance shutdown state) using RESET SYSTEM SHUTDOWN in a camp-on manner.

Ground Isolation

Ground isolation prevents an alternate return current path at the connecting interface. Return currents pass through the signal wire(s) in the interface connector cable rather than via "green wire ground".

Guest Password

A feature that allows people who are not subscribers to leave messages on the system by dialing a subscriber's extension and entering a system-wide guest password.

H

Hard Disk Drive
The disk drive the DEFINITY AUDIX system uses to actively save voice messages, personal greetings, subscriber profiles, automated attendants, and other data. The hard disk drive also stores the system's AUDIX software.

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.

Hunt Group
A group of ports on a switch usually administered to search for available ports in a circular pattern.

I

Initialization
The process of bringing a system to a predetermined operational state. The start-up procedure tests hardware and flashware; loads the boot filesystem programs; locates, mounts, and opens other required filesystems; and starts normal service.

Initialization and Administration System (INADS)
A maintenance system used by remote technicians to track alarms.

Interboard Bus
For release 3.2 and earlier versions, the inter-integrated circuit (I^2C) bus that provides connectivity between the Alarm board and the Multifunction board.

INTUITY Message Manager
A PC application that is used for the retrieval and display of message headers, addressing to lists, managing personal greetings, and for creating, forwarding, and replying to voice mail messages.

L

Leave Word Calling
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.

Light Emitting Diode (LED)
For Release 3.2 and earlier releases, a red-light indicator on the system faceplate panel that shows the status of operations and possible fault conditions. An unlit LED indicates a healthy system. When flashing, the LED indicates a software problem. When it is steadily lit, a hardware problem exists.

Release 4.0 uses three LEDs on the system's faceplate to report the system's status and to provide alarm and diagnostic information.

Liquid Crystal Display (LCD)
For release 3.2 and earlier releases, the 10-character alphanumeric display on the DEFINITY AUDIX faceplate panel that automatically shows status of the system including alarms.

Local Area Network (LAN)
A short distance data communications network used to link computers and peripheral devices under some form of standard control

Local Maintenance Terminal (LMT)
A display terminal located near the DEFINITY AUDIX System and the switch. It is temporarily attached to the DEFINITY AUDIX during an on-site service visit.

Login
A unique code used to gain approved access to a subscriber's voice mailbox or to a display terminal.

M

Magneto-optical (MO) Disk Drive
With release 4.0, the device used to store nightly and weekly backups of customer data, install new software releases, restore the system and remove core dumps and other maintenance information. The drive stores information on an MO disk. The MO drive replaces the tape drive from previous releases.

Mailbox
A portion of disk memory given to each subscriber for creating and storing outgoing and incoming messages.

Message-Waiting Lamp
An LED on a telephone that alerts subscribers to new messages.

MO Disk
With release 4.0, the storage medium used by the magneto-optical disk drive to store backups and other information.

Modem
A modulator/demodulator used for transmitting analog signals across phone lines.

Multifunction Board (MFB)
For release 3.2 and earlier releases, the hardware platform (TN566B, 386 version and TN567, 486 version) which holds the central processing unit, controllers, memory devices, and signal processors that make a DEFINITY AUDIX System operational. For release 4.0 the TN568 is the only circuit pack and therefore performs all operations for the DEFINITY AUDIX system.

Multilingual System
A DEFINITY AUDIX System containing primary and secondary language announcement sets. A large (40 hour) system can hold up to nine different language sets. The Telecommunications Device for the Deaf (TDD)-based announcement set is treated as a multilingual option.

N

Native Mode
The ability of the switch to recognize the DEFINITY AUDIX as a DEFINITY AUDIX circuit pack. With native mode support, the switch reserves five slots for the DEFINITY AUDIX 3.2 assembly, and two slots for the DEFINITY AUDIX 4.0. Additionally the switch is able to correctly identify the DEFINITY AUDIX board in alarms sent to the services organization.

Nonnative Mode
Without native mode, the MFB or TN568 slot is provisioned as a TN754, TN2181 or TN746B, the five slots occupied by the DEFINITY AUDIX 3.2 assembly or two slots occupied by the DEFINITY AUDIX 4.0 are not reserved, and alarms are reported as alarms for a TN754, TN2181, or TN746B.

Nonvolatile Random Access Memory (NVRAM)
A battery-backed RAM on the Multifunction board that retains data through loss of power.

Null Modem Cable
A cable that transposes transmit and receive leads on an RS-232 connection.

O

Operating System (OS)
The set of programs that runs the hardware and interprets software commands.

Operations, Administration, and Maintenance (OA&M)
A state of system operation where core processes of the Multifunction board are accessed, including system initialization, resource configuration, forms interface, entry into the maintenance subsystem, and filesystem access. Also entered when customer data must be restored.

Outcalling
A feature that allows the system to dial subscribers' numbers or go to pagers to inform them they have new messages.

P

Port
A connection or link between two devices, allowing information to travel through it to a desired location. For example, a switch port connects to a DEFINITY AUDIX port to allow a subscriber on a voice terminal to leave a message.

Protocol
A set of specific rules, procedures, or conventions relating to forms and timing of data transmission between two devices.

R

Reboot
A system *reboot* is done to clear major system problems (such as corrupt program memory). It also runs automatically whenever the system is powered up. Also see *boot*.

Remote Field Update
A set of software changes on a given release that is transmitted from a central location to customer equipment. Changes are generally restricted to serious bug fixes and are limited in volume.

Reply Loop Escape
Allows the subscriber the option to return to responding to a message after trying to reply to a non-subscriber message.

Restart

During maintenance, a system *restart* brings the system software back into full service, usually after an administrative shutdown. This is often done to try to clear software problems.

RISC

Reduced Instruction Set Computer. Refers to computers based on an unusually high speed processing technology that uses a far simpler set of operating commands.

S

Sanity and Control Interface (SAKI)

An integrated circuit that receives and transmits TDM bus control messages and monitors the sanity of the angel processor.

Shutdown States

States of system operation where either a technician can shut down the system for maintenance, or where a critical error condition brings down the system. In either case, filesystems are closed and the system can be powered down and removed from the carrier.

Small Computer Systems Interface (SCSI)

An interface standard defining the physical, logical, and electrical connections to computer system peripherals such as tape, magneto-optical and disk drives.

Standalone Utility

A software utility with options that include disk drive initialization, copying files from a generic tape or MO disk onto the customer's disk, and map partition modification. With release 3.2 and earlier releases the standalone utilities where referred to as standalone tape utilities.

Subscriber Specific Announcement Set

When the Multilingual feature is enabled, each subscriber form has three fields specifying the announcement set with which the subscriber will interact with the system once they log in, and the two announcement sets with which callers to the subscriber's mailbox can interact with the system.

T

Transmission Control Protocol/Internet Protocol (TCP/IP)

A set of protocol standards which allows a process on one machine to send data to a process on another machine. Communication may be full or half duplex. TCP/IP includes support for multiple operating systems and machine architectures.

Telecommunications Device for the Deaf (TDD)

A category of DEFINITY AUDIX features, including personal greetings and announcement sets, that exchange text messages with subscribers or callers using teletypewriters.

Teletypewriter (TTY)

A device that uses Baudot tones to transmit text-based telephone messages for the hearing impaired. Subscribers or callers can use teletypewriters to access the DEFINITY AUDIX system if TDD features are enabled.

Time Division Multiplex (TDM) Bus
The interface between the DEFINITY AUDIX System and the switch that carries digitally-encoded voice waveforms and circuit-switched data.

U

Update
A limited incremental change on an existing release involving software only.

Upgrade
The replacement of one release with a new release. This may involve software, flashware, hardware, and/or data.

V

Voice Port
An electrical pathway that connects calls between two devices, such as telephones, switches, or voice messaging systems.

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