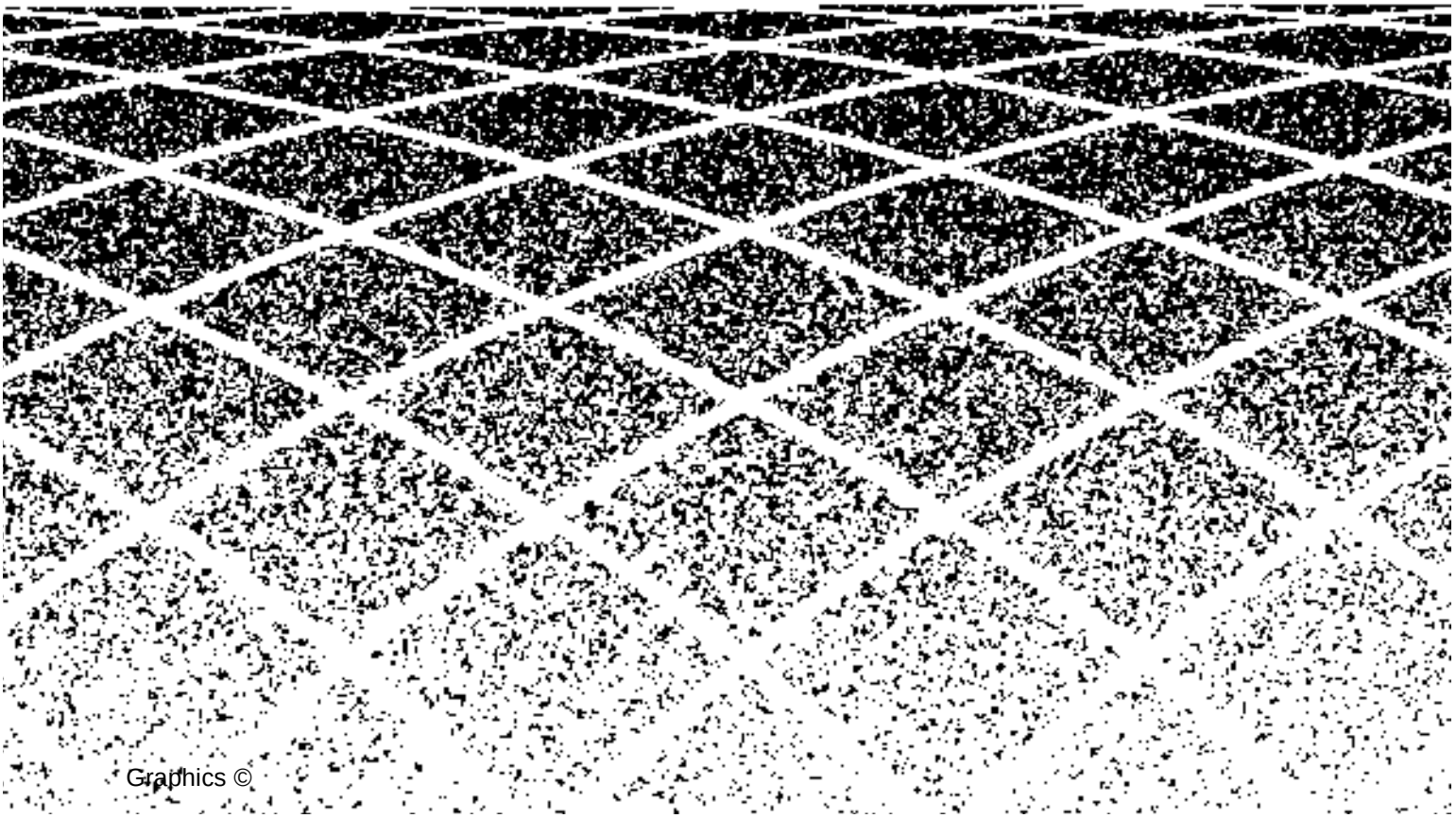
585-300-404
Issue 1
September, 1994

DEFINITY AUDIX R3.0 To R3.1 Change Description



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About This Document

This document describes hardware and software changes between DEFINITY AUDIX Release 3.1 (R3.1) and the earlier Release 3.0 (R3.0). These changes and enhancements are available on all new DEFINITY AUDIX systems and all DEFINITY AUDIX upgrades.

Intended Audiences

The system administrator is one of the primary audiences for this document. Much of the material in this document directly affects the DEFINITY AUDIX system administrator and those subscribers the system administrator supports.

The information in this document is also useful to AT&T marketing and provisioning personnel; AT&T remote and local services personnel; and other AT&T associates who must understand and support DEFINITY AUDIX voice mail and LAN-connected application systems. Readers may find parts of this document may not be pertinent to their specific job functions or their "need to know". These readers may choose to ignore those particular sections.

GBCS Education and Training will use this document as a high-level training tool for AT&T personnel with a need to know how the new features work and how to implement them. A Self-Check chapter is provided for readers who wish to assess their understanding of the material.

How This Document Is Organized

This document is organized as follows:

- Chapter 1, ‘‘New and Enhanced Features’’

- Chapter 2, ‘‘Self Checks’’
- Chapter A, ‘‘Changes, Improvements, Notes’’
- Glossary
- Index

How to Use This Document

This document supplements the documentation set received with a new DEFINITY AUDIX R3.1 system. It is most useful for summarizing differences between the current and previous software releases when a DEFINITY AUDIX system is upgraded to R3.1.

Conventions Used In This Document

The following typographic conventions are used in this document:

- Terminal keys and telephone buttons that you press are shown in curved-edge boxes, such as [#] .
- The word enter means to type a value and press [ENTER] .
- Information typed into a computer screen is shown in **bold** letters.

Trademarks and Service Marks

The following trademarked products are mentioned in this document:

- AUDIX* is a registered trademark of AT&T.
- DEFINITY* is a registered trademark of AT&T.
- Intuity* is a trademark of AT&T.
- UNIX* is a registered trademark of AT&T.
- Windows* is a trademark of Microsoft Corporation.

Related Resources

The following documents describe DEFINITY AUDIX R3.1 systems.

Title	Number	Issue
A Portable Guide to Voice Messaging	585-300-701	2 or later
AMIS Analog Networking	585-300-512	5 or later
AUDIX Administration and Data Acquisition Package	585-302-502	11 or later
DEFINITY AUDIX System-Administration	585-300-507	4 or later
DEFINITY AUDIX System-Documentation Guide	585-300-011	4 or later
DEFINITY AUDIX System-Feature Descriptions	585-300-206	4 or later
DEFINITY AUDIX System-Installation and Upgrade	585-300-111	5 or later
DEFINITY AUDIX System-Installation Checklist	585-300-109	4 or later
DEFINITY AUDIX System-Maintenance	585-300-110	4 or later
DEFINITY AUDIX System–System Description	585-300-205	5 or later
DEFINITY AUDIX System R3.1-Screens Reference	585-300-211	1 or later
Multiple Personal Greetings Quick Reference	585-300-705	4 or later
Voice Messaging Outcalling Quick Reference	585-300-706	1 or later
Planning for the DEFINITY AUDIX System	585-300-904	5 or later
Switch Administration for the DEFINITY AUDIX System	585-300-509	5 or later
AUDIX Business Card Stickers	585-304-705	2 or later
Voice Messaging Quick Reference	585-300-702	3 or later
DEFINITY AUDIX System Subscriber Artwork Package	585-300-703	4 or later
Voice Messaging Wallet Card	585-300-704	2 or later
Intuity Message Manager User's Guide	585-310-725	1 or later

Refer to the *Global Business Communications Systems Publication Catalog*, 555-000-010, for a listing of manuals relating to switching systems and peripheral equipment that can be integrated with the DEFINITY AUDIX system.

How To Make Comments About This Document

Reader comment cards have been placed at the beginning of this document. While we have tried to make this document fit your needs, we are interested in your suggestions for improving it and urge you to fill one out.

If the reader comment cards are missing, please send your comments and suggestions to:

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New and Enhanced Features

1

This chapter describes new and enhanced features provided by the DEFINITY AUDIX Release 3.1 system. It also discusses the administrative and maintenance functions needed to implement and maintain these features. New and changed administrative and maintenance screens are shown.

IMM

Intuity™ Message Manager (IMM) is a Microsoft Windows-based application which uses a LAN (Local Area Network) and a PC (Personal Computer) as a means to access and manipulate information in a DEFINITY AUDIX mailbox. Use of the Windows environment allows "point and click" ease when interacting with the DEFINITY AUDIX system. It is a separately purchasable application. In later releases, this application may also be capable of handling E-Mail, FAX, and video with selected voice mail products, although not all may be available with DEFINITY AUDIX systems.

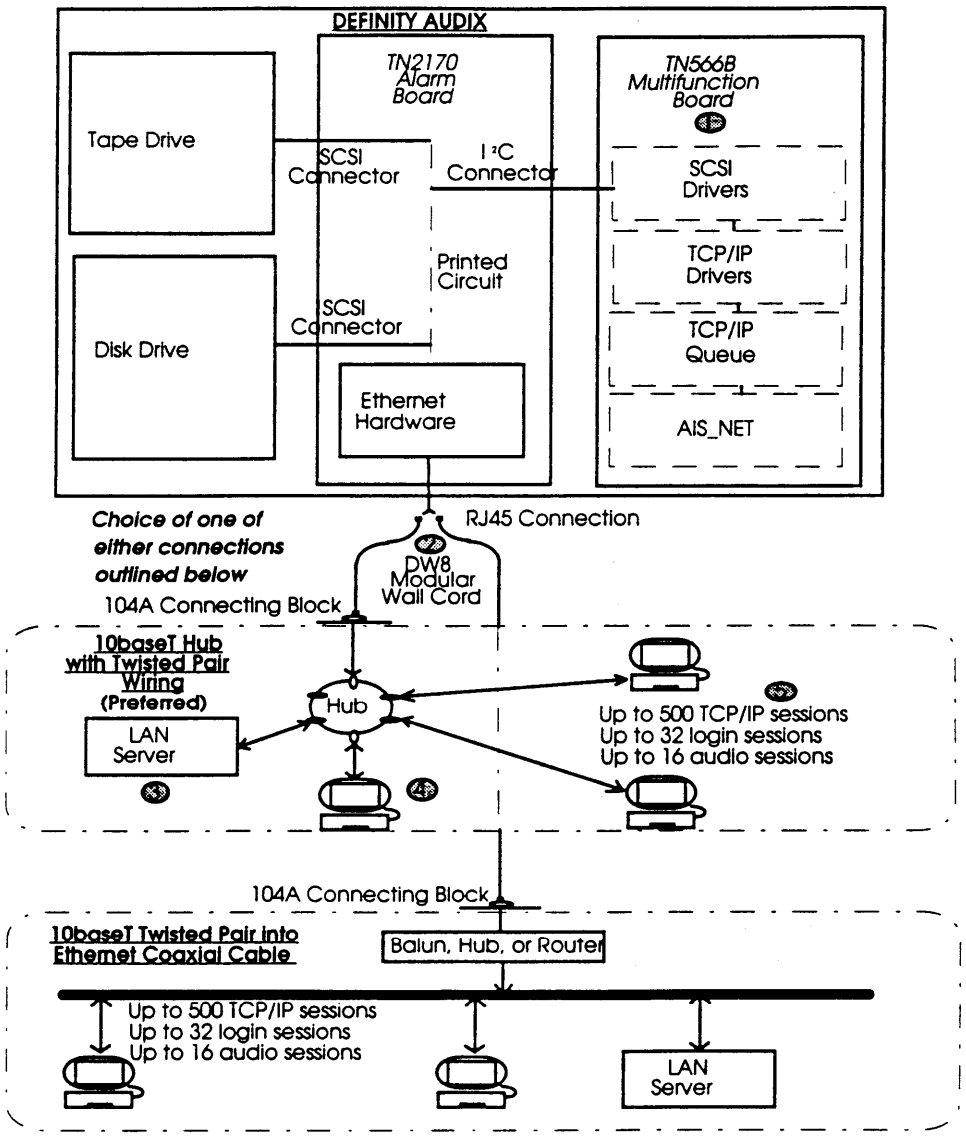
Most voice mail features are included in IMM, including Call Answer, Bulletin Board, and Automated Attendant. The DEFINITY AUDIX System—Feature Descriptions manual, 585-300-206 includes a full discussion of available features. Features for the first release of IMM include most of those features currently accessed via a telephone, including some new capabilities. New capabilities include, but are not limited to:

- Notifying subscribers on their PCs of the existence and number of new messages in their mailboxes
- Accessing messages in a non-sequential order
- Moving messages from a DEFINITY AUDIX mailbox to storage on a PC hard or floppy disk via the Personal Folder feature

- Annotating messages and Personal Greetings
- Accessing the Subscriber Directory to create or modify Mailing Lists
- Printing information on the PC screen, for example, Mailing Lists

IMM is described in detail in the DEFINITY AUDIX System—Feature Descriptions document, 585-300-206, Issue 4 or later. The Intuity Message Manager User's Guide, 585-310-725, contains information on the use of this new application at the subscriber's PC as well as LAN and PC requirements.

The following block diagram shows basic internal system operation and the two basic LAN connections used for IMM. Refer to the next page for numbered definitions.



❶ On the TN566B Multifunction board, the AUDIX Interaction Server (AIS) supports end-user requests using Transmission Control Protocol/Internet Protocol (TCP/IP). This is a standard set of protocols commonly used over a LAN. TCP/IP allows a process on one machine to send data to a process on another machine. Communication may be full or half duplex. TCP/IP supports multiple operating systems and machine architecture.

❷ The demarcation is that point on the wall field where AT&T responsibilities for installation and maintenance end and customer responsibilities begin. Maximum distance is 25 feet from the switch. It is provided by AT&T as an RJ45 connection through a 104A connecting block. A DW8 modular wall cord is used to make the connection.

❸ A TCP/IP protocol stack is installed on each user PC. The use of a Netware Loadable Module on the LAN server to implement TCP/IP software between the end-user and the DEFINITY AUDIX is possible.

❹ An end-user's PC uses a Windows 3.1 or later, or Windows for Workgroups 3.11 or later, operating system, IMM software, and the standard WIN socket open network programming interface. The minimum PC configuration is a 386SX-25MHZ with 4 Mbytes of random access memory and 2½ Mbytes of available disk storage. (A PC with a 486 is strongly recommended.)[1]

❺ A TCP/IP session is that time when an administered subscriber is connected to the system and the IMM icon appears on the PC screen. Subscribers receive notification of new messages arriving in their AUDIX mailboxes. During a login session, the user is accessing and manipulating their AUDIX mailbox through the IMM screen. An audio session requires a voice port for activities such as recording and playing back names, personal greetings, and messages.

Hardware Upgrades

Besides the Release 3.1 software upgrade to drive the processes, IMM requires the following hardware changes.

The Multifunction Board must be upgraded from the TN566 to the TN566B for all DEFINITY AUDIX systems release 3.0 or later. This board became available in 3.0 release and upgraded system RAM to 16 Megabytes.

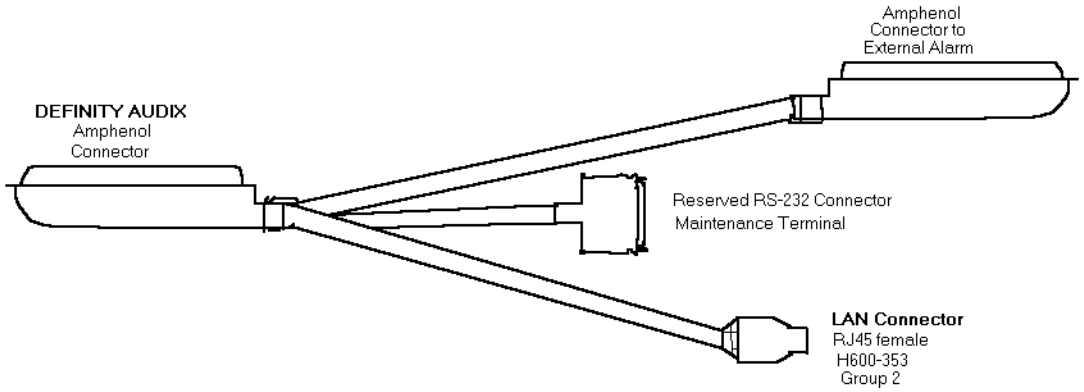
If IMM is purchased, the original DEFINITY AUDIX TN2169 Alarm Board must be changed to a TN2170 Ethernet Alarm Board to supply 10baseT Ethernet hardware. This hardware provides TCP/IP (TCP/IP) connectivity between the DEFINITY AUDIX and the LAN. An integrity switch on the TN2170 also allows

1. A good source of information concerning LANs and connectivity issues between client and server applications is the book, *Data Communications and Distributed Networks*, by Uyless D. Black. Additional help for network administrators is available in the book, *TCP/IP Network Administration*, by Craig Hunt.

Ethernet link integrity to be turned on or off. This switch is turned on at the factory.

The original Y-cable (H600-353, Group 1) used to attach the alarm board to local and remote alarm and maintenance terminals has been changed. An additional RJ45 female connector has been added which connects to the LAN network. The new DEFINITY AUDIX R2 Alarm Board Adapter cable (H600-353-Group 2) is shown below.

DEFINITY AUDIX R2 Alarm Board Adapter Cable

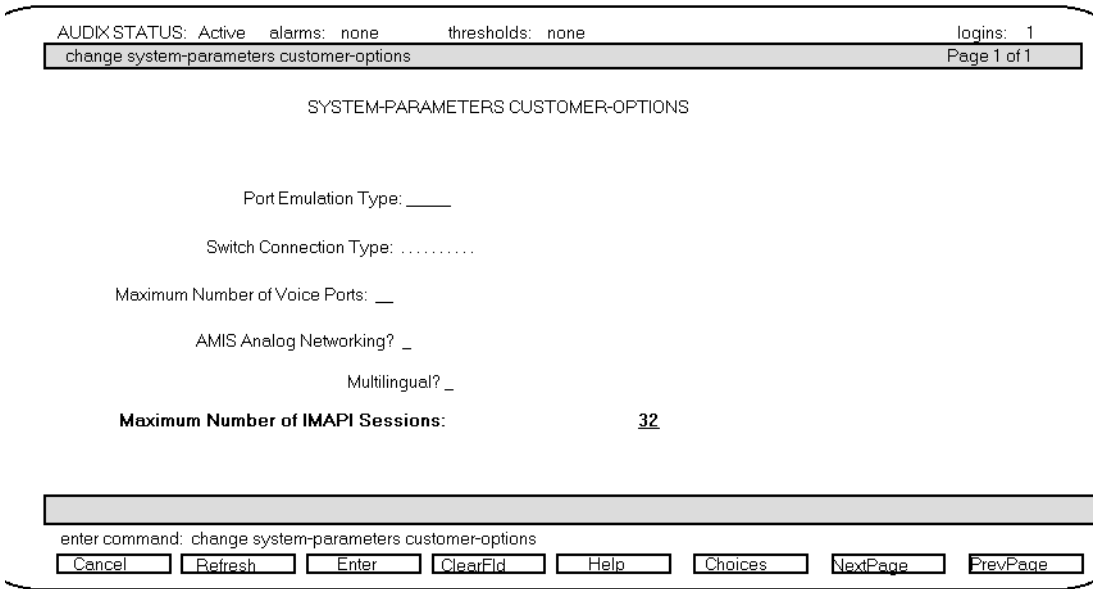


DEFINITY AUDIX System Administration

Three levels of administration are required when administering IMM on the DEFINITY AUDIX system. First, the feature must be purchased and activated in the DEFINITY AUDIX system. Then, IMM options must be configured to the customer's environment. Finally, the use of IMM by subscribers must be enabled on the `subscriber` and/or `cos` (class of service) screens. Additional administration required for the LAN is completed by the LAN administrator. IMM software must also be loaded on the PCs by the customer.

Activating IMM

IMM is activated on the `change system-parameters customer-options` screen in the *Maximum Number of IMAPI Sessions:* field. Allowable entries are **0** (option not purchased) or **32** (option purchased). For new installations, this field is properly set at the factory. The screen can only be changed when it is accessed by the init login. This change is made by the TSO (Technical Service Organization) for upgrades.

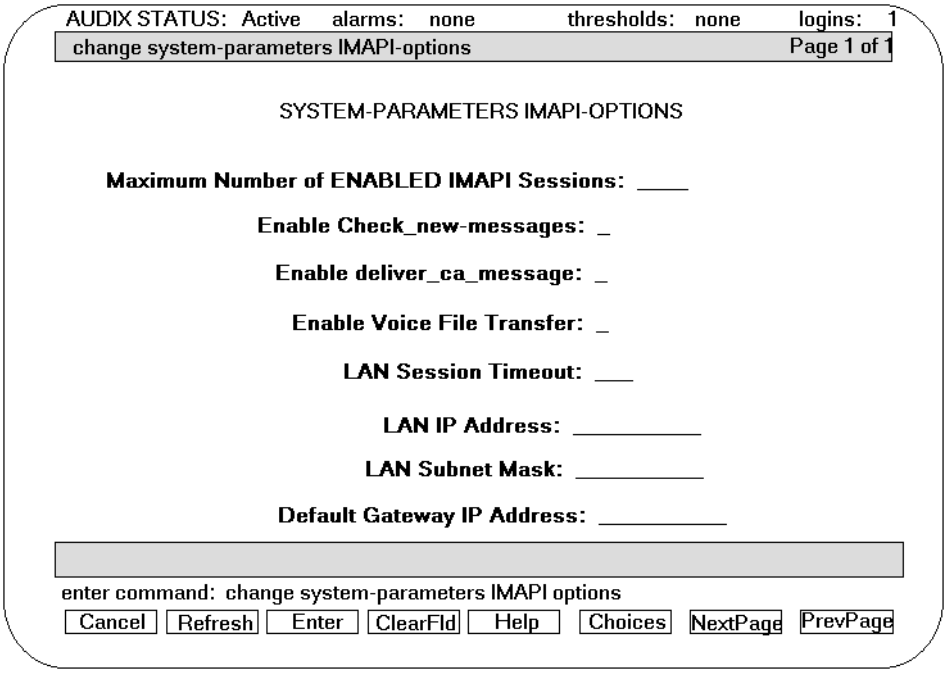


Enabling Sessions

After IMM has been turned on, the administrator customizes IMM options in fields on the `system-parameters IMAPI-options` screen shown below. These fields set parameters which define the AUDIX as a TCP/IP host on the LAN and allow the administrator to control the load between the demands of the AUDIX voice interface and the LAN interface. A reboot is required for administered fields to take effect.

IMM Voice processing demands are configured using the same models used for the voice interface. For more information, see the DEFINITY AUDIX System—System Description manual, 585-300-205.

Because this screen is new for DEFINITY AUDIX 3.1, all fields are described.



Maximum Number of ENABLED IMAPI Sessions: This field sets the maximum number of subscribers that can be logged in to the application at one time. The 0 default is set at **32**. If this default causes problems due to high LAN contention, the figure can be lowered by the system administrator.

Enable Check_new_messages: If set to **y**, users receive notification of new messages for their mailboxes on the DEFINITY AUDIX system. It is a public function, i.e. the application need not be logged in to the mailbox to obtain the new message count. When new messages arrive, IMM shows a popup window with a message saying "You have new Voice Mail messages."

If set to **n**, users do not get the popup window informing them of new messages and they must force a mailbox header scan in order to tell via IMM if there are new messages. The default is **n**.

Enable deliver_ca_message: For Issue 1 of IMM, this field is inoperable. Leave the default at **n**. Future IMM releases will make use of this field.

Enable Voice File Transfer: If set to **y**, the Personal Folder feature is enabled, allowing subscribers to send and retrieve DEFINITY AUDIX voice text messages between their PCs and the DEFINITY AUDIX system over the LAN. The administrator can further control this feature via the `COS` or `SUBSCRIBER` screens.

If set to **n**, disables all voice-file transfers over the LAN for all subscribers regardless of their class of service. Protects messages which have been marked private. The default is **n**.

LAN Session Timeout: Amount of time a login session can be inactive before being logged out by the AUDIX server. An action on the PC generating access to the DEFINITY AUDIX restarts the counter for the time-out. Intervals can be set in five-minute increments, from 5 to 60 minutes. The default is **5**. This number should be set low to enable service to more IMM users. If it is a high number, login sessions will have longer hold times preventing other IMM users from logging into the system.

LAN IP Address: The site-specific 32-bit Internet Protocol address expressed in numeric nnn.nnn.nnn.nnn format, where *nnn* represents a decimal integer between 1 and 126 or 128 and 254. This number is provided by the LAN administrator.

LAN Subnet Mask: Expressed the same as the IP Address except nnn ranges from 0 to 255, this determines how much of the IP address is considered the network address.[2] This number is supplied by the LAN administrator. Frequently, it is 255.255.255.0

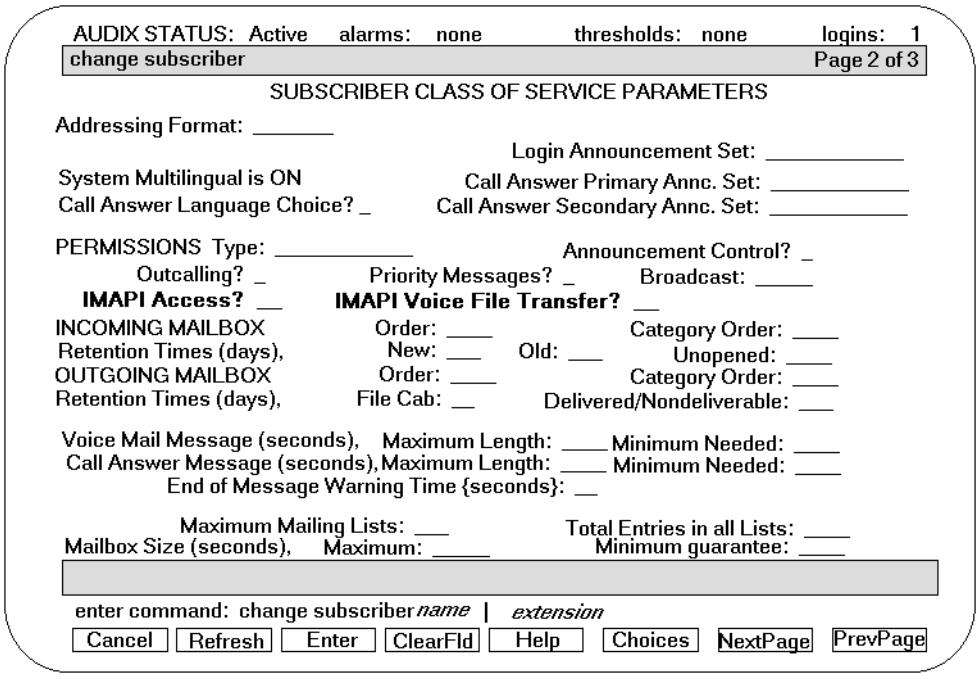
Default Gateway IP Address: The assigned Gateway IP address is that number to which all unknown addresses are sent for resolution. It is provided by the LAN administrator and has the same form.

Each segment of the LAN IP Address, LAN Subnet Mask, and Default Gateway IP Address must be separated by a period. These periods must be typed in by the system administrator (for example, 18.103.94.211). While each segment can be three digits long, the number does not have to be left justified. The periods are essential.

Subscriber Class of Service Parameters

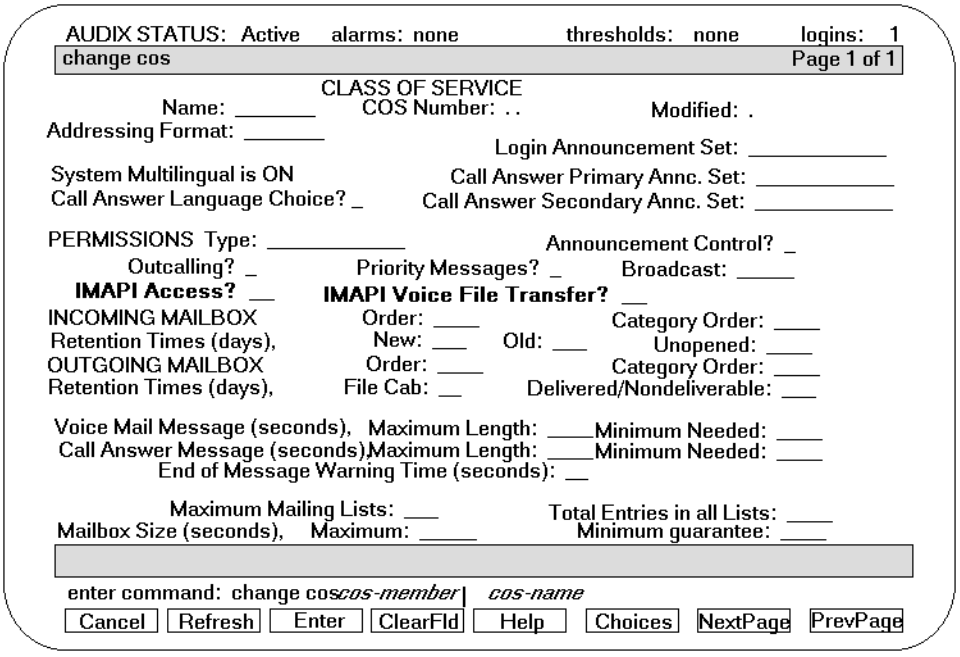
IMM Subscriber services are restricted to those subscribers who have IMM access enabled on their `cos` or `subscriber` screen. Those subscribers must also have IMM Voice file access to transfer voice files over the LAN. To enable these parameters, the fields shown in bold letters on the screen below are set to **y**.

2. Starting from the most significant bit, each bit in the 32-bit IP address which has a corresponding Subnet bit of 1 (one) is considered part of the network address. The remaining part contains the IP interface (host interface) address.



Class of Service

IMM access and IMM Voice file access can also be enabled on the change cos screen, shown below. If the cos screen is used, all subscribers with that Class of service have the feature.



IMM Maintenance

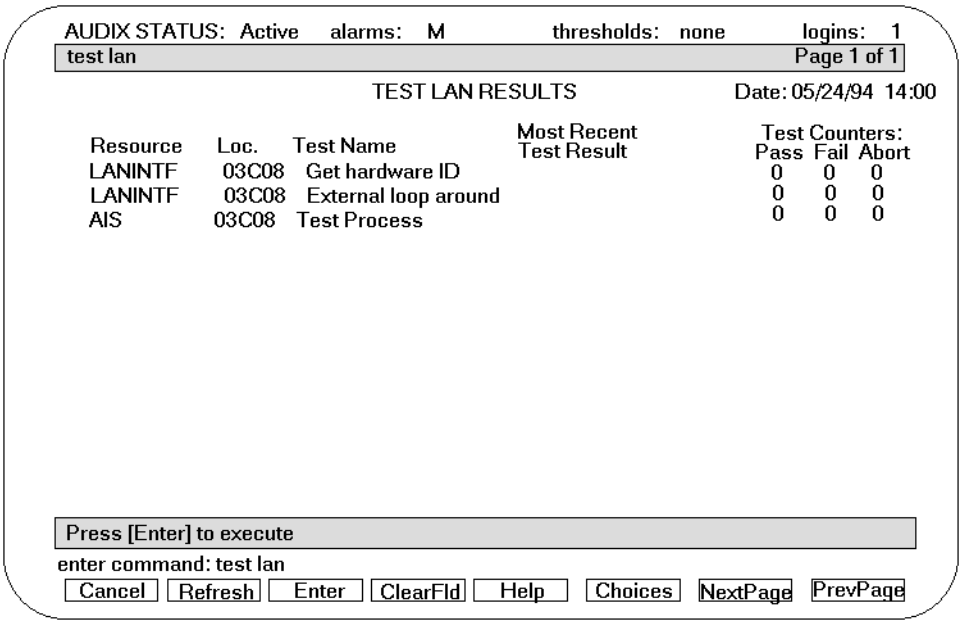
IMM maintenance is focused on the DEFINITY AUDIX system's ability to communicate with the LAN. It does not provide end-to-end connectivity testing on the LAN. The customer owns the LAN and is therefore responsible for it. End-user problems on the LAN or PC are taken care of by the customer.

IMM is maintained through the following methods:

- Periodic background testing—Every 10 minutes, three looparound tests and an Ethernet hardware status check are performed whenever one or more IMM sessions are in progress (these tests can also be started on demand). Any failure raises a minor alarm in a new alarm origination category called `LANINTF` (LAN interface). This alarm is cleared upon successful execution of another periodic or a demand test. If failure conditions continue, AUDIX LAN software resets itself every 15 minutes. (This includes the application resources, the Ethernet chip, and the TCP/IP driver.)
- Sanity testing of software processes—Periodically, software processes are checked. If not sane, they are restarted automatically without disrupting Call-Answer service. If at least one IMM session is enabled, a minor alarm is raised against `SOFTWARE`.
- Audits of critical data—No special audits have been provided for IMM. The existing `audit voice-files` checks messages and prompts created during IMM session logins.
- Service monitoring (not accessible to the customer)—Tier 3 and 4 remote maintenance personnel can check *vperf* from the shell as well as function calls and return codes on a trace log.
- Three demand tests: `test lan`, `test lan long`, and `test lan dest` *`nnn.nnn.nnn.nnn`*. These tests, available to all logins, are described below.

Demand Test: `test lan`

This non-destructive test, accessed by the screen shown below, verifies that DEFINITY AUDIX is connected to the LAN. It takes less than 2½ minutes to run. Any failure points are located from the individual tests described below, with pass/fail results listed on the screen.



Get Hardware ID—Shows the Ethernet hardware's checksum/version/hardware identification. This verifies that the circuit is operational.

External Looparound—Sends a message across the LAN's main communication route to the default gateway machine, indicating whether or not the entire LAN might be down. No special loopback test cable is needed.

Test Process—Performs sanity testing of the software process.

Demand Test: `test lan long`

This destructive demand test resets as much of the IMM hardware and software as possible and then verifies that the DEFINITY AUDIX is connected to the LAN. It does not interfere with DEFINITY AUDIX voice-side call processing. Besides performing the same tests as `test lan`, it also does the following:

Firmware loop around—Starts from maintenance to AIS_NET and back, utilizing the drivers and TCP/IP queue. This looparound does not test the Inter-Integrated (I^2C) cable between the boards.

Hardware loop around—Starts from maintenance to the Ethernet hardware and back, without using the LAN.

Resets the Ethernet chip—Resets the Ethernet chip.

Resets Process—Stops, removes, and resets AIS software and AIS postbox.

Demand Test: `test lan dest` *nnn.nnn.nnn.nnn*

This non-destructive test verifies that the DEFINITY AUDIX can talk to another LAN address. It sends a message in the form of a UNIX ping to the given address (for instance, 123.45.67.89) and reports whether or not the message was returned. Since host names on the customer's LAN are not administered on the DEFINITY AUDIX, only an address is accepted. Pass/fail results are listed on the screen.

At this point you may turn to ''IMM'' on page 1-1 and complete the Self-Check to assess your understanding of this section of this chapter.

3.1 Maintenance Updates

New maintenance alarms, errors, and administration log entries have been added for DEFINITY AUDIX 3.1. These changes, shown in the table below, and their repair actions can be found in the *DEFINITY AUDIX System—Maintenance* manual (585-300-110) Issue 4 or later.

All software errors in prior releases of DEFINITY AUDIX that were listed under error resources SHSRV and SHSRV_PBOX have been deleted.

All software errors of the form `Periodic MP 12 failed` (listed under any xxx_PBOX error resource) have been deleted.

New Alarms and Errors

Resource	Fault Code	Description	Alarm Level	Error Code	Description
Multifunction Board (MF_BD)	318	Insufficient memory	MAJOR	374	TN566B required
				8857	Detected 386 flashprom failure

Resource	Fault Code	Description	Alarm Level	Error Code	Description
LAN Interface (LANINTF)	0	No Ethernet circuit	MINOR	81	MP 160 failed (resets LAN I/F chip)
				81	Long demand MP 160 failed (resets LAN I/F chip)
				81	Long demand MP 160 failed (gets Ethernet chip ID)
				81	MP 161 failed (gets Ethernet chip ID)
				81	Short demand MP 161 failed (gets Ethernet chip ID)
	1	Ethernet, internal	MINOR	81	MP 166 failed (firmware Ethernet tests)
				81	Long demand MP 166 failed (firmware Ethernet tests)
	2	FW Ethernet loop	MINOR	81	MP 162 failed (firmware Ethernet loop)
				81	Long demand MP 162 failed (firmware Ethernet loop)
	3	Ping gateway	WARNING	81	MP 163 failed (external Ethernet loop
				81	Long demand MP 163 failed (external Ethernet loop)
				81	MP 163 failed (external Ethernet loop)
				81	Short demand MP 163 failed (external Ethernet loop)
Software—AUDIX Interaction Server (AIS or AISN)	5800	Process death	MINOR		
	5801	Process initialization failure	MINOR		
	5802	Process sanity failed	MINOR		
	5803	Process error reported	MINOR		
Software—AUDIX Interaction Server Postbox (AIS_PBOX)	5900	Postbox library time-out	MAJOR	81	MP 75 failed (restart the system)
				282	Postbox library access time-out
	5901	Cannot make postbox	MAJOR	80	MP 10 aborted (make a postbox)
				81	MP 10 failed (make a postbox)
	5902	Postbox is not present	MAJOR	81	MP 75 failed (restart the system)
				81	MP 12 failed (check if post box is operational)
	6700	Postbox library time-out	MAJOR	81	MP 75 failed (restart the system)
				282	Postbox library access time-out
	6701	Cannot make postbox	MAJOR	80	MP 10 aborted (make a postbox)
				81	MP 10 failed (make a postbox)
	6702	Postbox is not present	MAJOR		
Night Audit (NIGHT_AUD)	4	Audit failed)	MINOR	81	MP 79 failed (audit SD switch translations)

New Administration Log Codes

Four new codes dealing with IMM, and the ‘‘Password Aging’’ feature (described later in this chapter) provide the administrator or maintenance personnel with a search string to deal with possible problems. These codes appear on the `display administration-log` screen. Repair actions can be found in the *DEFINITY AUDIX System—Maintenance* manual, 585-300-110 Issue 4 or later.

Feature/Code	Message
IMAPI `apib`	`Break-in attempt into mailbox owned by <name>, <extension> from API`
Auto Attendant `attm`	`Attendant %s (extensions) has no buttons defined.` `Should this be a Bulletin Board?`
Password Aging `pafd`	`System profile corrupt, Password Aging DISABLED!`
Password Aging `pewd`	`System profile corrupt, Password Aging DISABLED!`
Password Aging `pmad`	`System profile corrupt, Password Aging DISABLED!`

New System Shutdown Codes

Two new system shutdown codes provide maintenance personnel with information about the system’s tape device. These fault codes are generated from the system flashware whenever the system shuts down and goes into firmware mode. These codes appear automatically on the maintenance terminal. Whenever the system reinitializes, the codes appear on the `display events` screen. Repair actions can be found in the *DEFINITY AUDIX System—Maintenance* manual, 585-300-110 Issue 4 or later.

Shutdown Code	Fault Description
f056	Tape device not ready
f057	Non-generic tape cartridge

Language Sets

In DEFINITY AUDIX 3.0 and prior releases, each system delivered to another country was shipped with a generic tape containing the US English (Standard) announcement set. Other language sets had to be ordered and installed separately.

Now, with Release 3.1, the customer designates a language of choice. On new systems being shipped, the factory installs the purchased designated announcement set only. For existing systems, additional sets (including US English) can be ordered and installed during an upgrade. Each announcement set resides on its own separate tape. This change maintains an internationally-neutral appearance with the DEFINITY AUDIX system.

DEFINITY AUDIX 3.1 offers the following new language announcement sets:

Language/ *Announcement Set Name*	**Required Disk Size (Hours)**	**Touch Tone ID**	**Self ID Announcement**
Portuguese *portug*	15.8 Mbytes (2.2 hours)	767884	“Portugues”
German *german*	15.1 Mbytes (2.1 hours)	437626	“Deutsch”
Dutch *dutch*	14.0 Mbytes (2.0 hours)	38824	“Nederlanos”

Because each announcement set is shipped on a separate tape along with the generic software, an additional tape containing the chosen language must be loaded by the Technician during upgrades and software restoration procedures.

The Portuguese announcement set is as spoken in Brazil.

Announcement and Fragment Changes

The following new and modified announcements and fragments have been introduced to existing announcement sets. A table showing these modified and new fragments is shown below as a quick reference guide. To review what these fragments and announcements actually say, refer to the *DEFINITY AUDIX System Announcement Customization* manuals for each language.

New Announcements	**Modified Announcements**	**New Fragments**
All language sets: 1144-1166	*All language sets*: 183, 184, 185, 192, 269-272, 355-358, 489-492, 570, 620, 622, 663-666, 676-679, 718, 719, 808-811 964, 965	*British*: 1110-1151 *French-Canadian*: 1196-1237 *Latin-Spanish*: 1161-1202 *US English*: 1437-1471

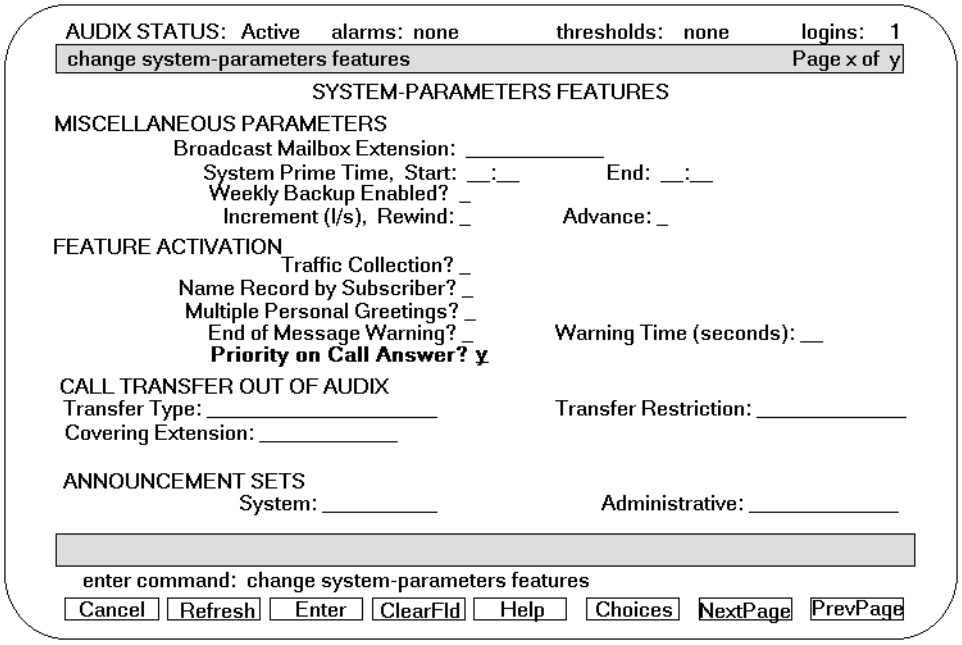
At this point you may turn to ''Language Sets'' on page 1-13 and complete the Self-Check to assess your understanding of this section of this chapter.

Priority Designation on Call Answer

This feature allows a subscriber leaving a call-answer message to mark it as a Priority message. It is valuable for those who want to generate outcalls (possibly to a pager) only on Priority messages. In R3.0 and previous DEFINITY AUDIX releases, only voice-mail messages could be designated as Priority messages.

Announcement customization provides a header for this feature. A sample announcement might state: At **To make private, press 1. To make priority, press 2. To send, press #.**

Priority on Call Answer is activated on the `change system-parameters features` screen, as shown in bold letters below. Entering a **y** activates the feature on a system-wide basis for all extensions having call-answer coverage to the system.



At this point you may turn to ''Priority Designation on Call Answer'' on page 1-15 and complete the Self-Check to assess your understanding of this section of this chapter.

Enhanced Auto-Attendant Name Addressing

Auto-Attendants are often set up so that the caller can reach someone by entering digits that correspond to that person's name. Name Addressing has been enhanced to pinpoint one name from others that are similar in the subscriber database.

In DEFINITY AUDIX 3.0, when four or more matching names were found, the Auto Attendant would announce that the entered name was not listed in the subscriber database.

Now, when four or more names match, the Auto Attendant requests more digits. For instance, the announcement might say: **Enter more characters followed by the pound sign. You have not yet entered enough characters to identify a specific subscriber. To enter the letter Q, press 7; for Z, press 9. Enter more characters, followed by the pound sign. If you just completed entering the last name, enter the first name and pound sign. To delete, press *D.**

All DEFINITY AUDIX sets require at least one new announcement to accommodate this enhancement. For the US-English and all other sets, the new announcement/s can be constructed from existing fragments.

No changes were needed on related administration screens. It is recommended that a time-out treatment be administered on page 3 of the `subscriber` screen. A name-addressing attendant may be administered so that the 1 and 0 buttons cause an immediate transfer for help.

Administrable Interdigit Timing on Received DTMFs

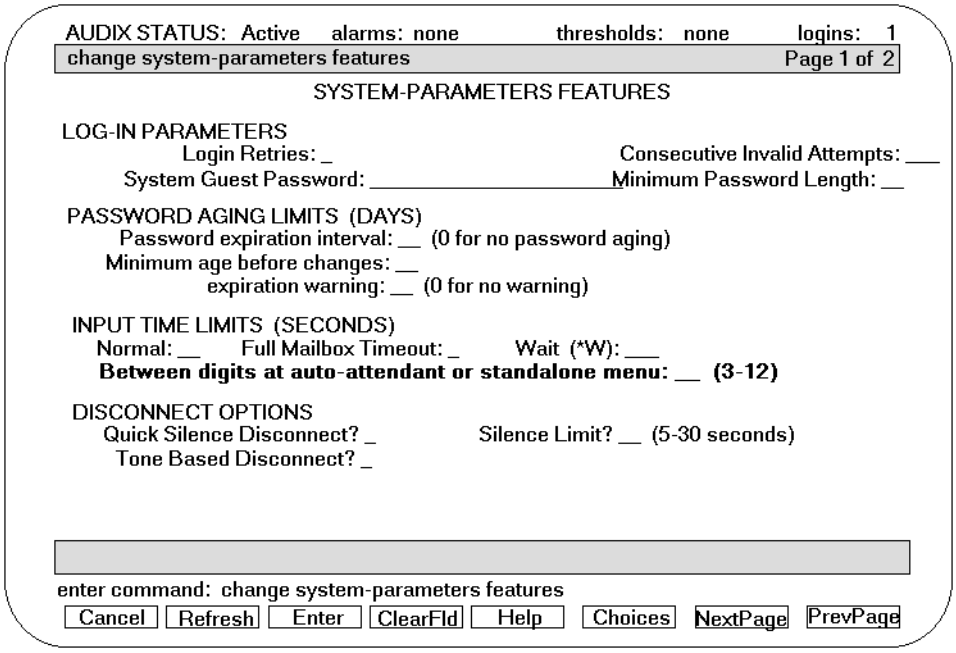
This enhancement was made for DEFINITY AUDIX Release 3.1 to allow Dual-Tone Multifrequency (touch tone) interdigit timing to be increased to accommodate callers with both rotary and touch-tone phones when an Automated Attendant or Standalone Attendant menu is reached.

For instance, a caller dialing into the system with a rotary phone is only able to leave a message. Other features such as the transfer of calls cannot be handled because the phone does not have a # key or * key. A pulse-to-touch-tone converter must be placed in front of each DEFINITY AUDIX port for this feature to work.

In prior DEFINITY AUDIX releases, the three second interdigit time-out value administered for touch-tone phones was not sufficient to convert the pulse of each digit dialed from the rotary phone.

This feature enhancement allows the administrator to assign up to 12 seconds for interdigit timing. For rotary phone users, the time-out value should be increased to five or six seconds. This value applies when Automated Attendant is used, and for the standalone call answer prompt when the caller is asked to reenter the extension of the person to get the message.

This value is specified in a new field, shown in bold letters, in the `system-parameters features` screen.



At this point you may turn to ''Administrable Interdigit Timing on Received DTMFs'' on page 1-16 and complete the Self-Check to assess your understanding of this section of this chapter.

Non-Addressed Message Retention

In R3.0 and prior releases, if the user approved a message by pressing #, and pressed # twice again to finish addressing and send the message without having actually entered any addressees, the message was deleted.

In R3.1, the user is given another opportunity to enter addressees for the message before it is deleted.

When the subscriber presses # to approve a message, DEFINITY AUDIX prompts the subscriber: **Enter extension and pound sign. When finished addressing, press pound.**

When the subscriber presses # to indicate he or she is finished entering the extension(s), the subscriber hears: **To send message, press pound. Or enter a delivery option. To hear a list of delivery options, press zero.**

Depending on whether the subscriber entered extension(s), one of the following happens:

a. If the subscriber entered at least one addressee and pressed # , then pressed # to send the message, the subscriber hears **Delivery scheduled** and the message is delivered.

b. If the subscriber did not enter an addressee but instead pressed only # , the subscriber hears an error tone and the prompt **No addresses identified. Enter extension and pound sign. When finished addressing, press pound.**

c. If the subscriber failed to address the message, and again presses # , entered at least one addressee and pressed # without addressing the message, the message is deleted and the subscriber hears **No addresses identified. Deleted.**

d. The only messages that will be delivered without an address are broadcast messages or a login announcement. When the subscriber presses # , the subscriber hears **Delivery scheduled.**

At this point you may turn to ''Non-Addressed Message Retention'' on page 1-17 and complete the Self-Check to assess your understanding of this section of this chapter.

Outcalling Enhancement

An enhancement to the Outcalling feature allows a DEFINITY AUDIX user to set up an outcalling number that will contact a radio paging service such as SkyPager.

Earlier versions of DEFINITY AUDIX only allowed 29 digits (including pause indicators) to be used in the outcalling string. Also, there was no mechanism for inserting #s in the middle of an outcalling digit string. This limitation kept DEFINITY AUDIX from telling the radio pager that it was requesting the page.

This restriction was eliminated by allowing up to 60 digits (including *s and #s) to be used in an outcalling string, and by allowing the user to embed a # anywhere within the digits.

More information on this enhancement can be found in the *DEFINITY AUDIX System—Feature Descriptions* document, 585-300-206, Issue 4 or later.

At this point you may turn to ''Outcalling Enhancement'' on page 1-18 and complete the Self-Check to assess your understanding of this section of this chapter.

Password Aging

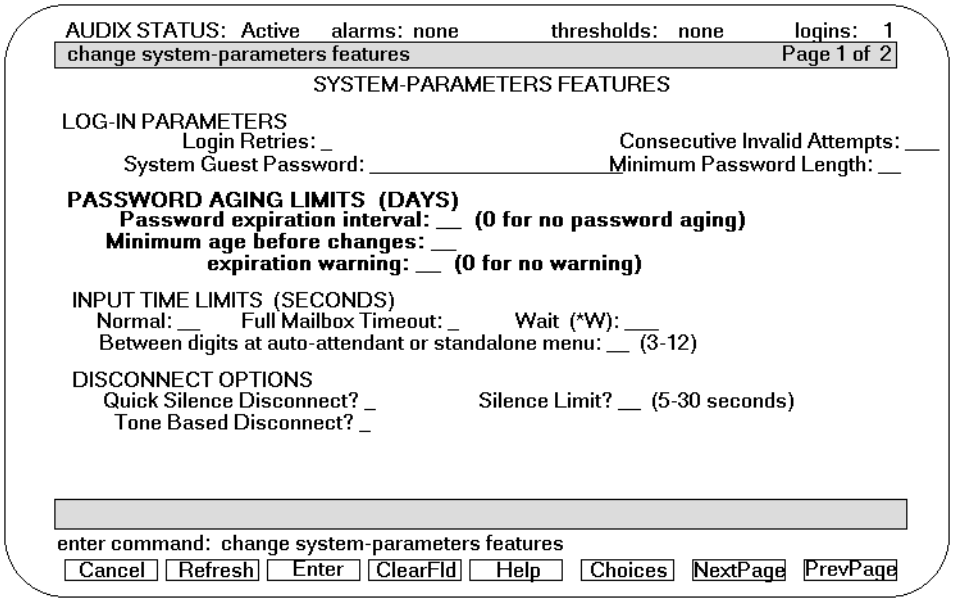
This is a customer-requested capability which enhances system security by forcing users to change their password regularly.

When a password is about to expire, the subscriber hears an announcement immediately after logging in. This announcement will be similar to: **Your password will expire in two days**, or **Your password will expire within one day.**

When a password has expired, the subscriber is informed what to do. Announcements similar to the following will be heard: **Your password has expired. Please enter new password and pound sign.**

If a subscriber tries to change their password back to its former value, the system responds by a prompt similar to: **Old and new passwords cannot be the same. Please enter new password and pound sign.**

Password aging limits are administered on the `system-parameters features` screen, shown below. The new fields are shown in bold letters.



Valid entries for the *Password expiration interval:* field are limited to numbers between 0 and 999 days.

Valid entries for the *Minimum age before changes:* and *Expiration warning:* fields are limited to numbers between 0 and 99.

The password aging limits must be tracked and are therefore audited nightly. These audits can manually be invoked via the `audit subscriber-data` command.

At this point you may turn to "Password Aging" on page 1-19 and complete the Self-Check to assess your understanding of this section of this chapter.

Self Checks

2

This chapter provides Self-Checks—questions and exercises—to help you assess your understanding of the high-level information presented in Chapter 1, ‘‘New and Enhanced Features’’. This chapter has been structured to help you assess your understanding of the changes inherent with DEFINITY AUDIX Release 3.1. Many of you may require additional information to successfully complete your job tasks.

These Self-Checks are presented in the same order as information is presented in Chapter 1, ‘‘New and Enhanced Features’’. At the end of each Self-Check, you are directed to an answer page so you can receive immediate feedback to your response(s). At the end of each answer section is a listing of other documentation in which you can find further information on the subject.

Because this chapter is written for a wide range of readers with a wide range of interests in DEFINITY AUDIX, please feel free only to respond to those questions or exercises in which you have an interest.

Self-Check—IMM

In this Self-Check you will:

- Formulate two customer benefits provided by IMM
- Specify where specific Local Area Network (LAN) and PC (Personal Computer) requirements are located for IMM
- List the DEFINITY AUDIX system hardware needed for IMM
- Complete applicable fields for IMM to work with a DEFINITY AUDIX system given specific customer parameters
- Specify the DEFINITY AUDIX system screen(s) used to test IMM

- Indicate the two LAN connection types that can be used with IMM
- Specify the networking protocol required for IMM

1. Based on information presented in Chapter 1, ‘‘New and Enhanced Features’’, formulate two customer benefits provided by IMM. (A benefit is not a specific thing, feature or process, it is a value the customer derives from the thing, feature or process.)

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2. Where are specific LAN and PC requirements for IMM located?

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3. List the DEFINITY AUDIX system hardware necessary to provide IMM.

   _____

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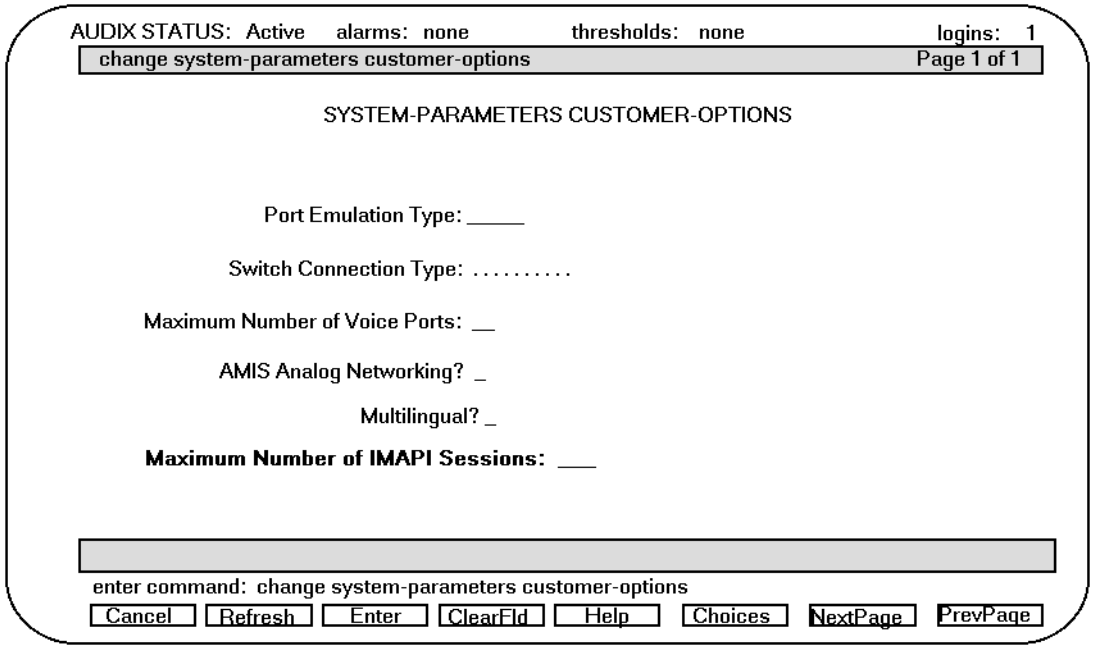
   _____

4. Complete the appropriate fields on the `change system-parameters customer-options`, `change system-parameters imapi-options`, `change cos`, and `change subscriber` screens for the following scenarios:

a. The customer has purchased IMM. The TSO (Technical Service Operations) group must access the DEFINITY AUDIX system with the *init* login and activate the feature. Enter the correct value in the *Maximum Number of IMAPI Sessions:* field on the screen below.



b. The customer now needs to set up the system-wide parameters in the DEFINITY AUDIX system. The customer has decided:

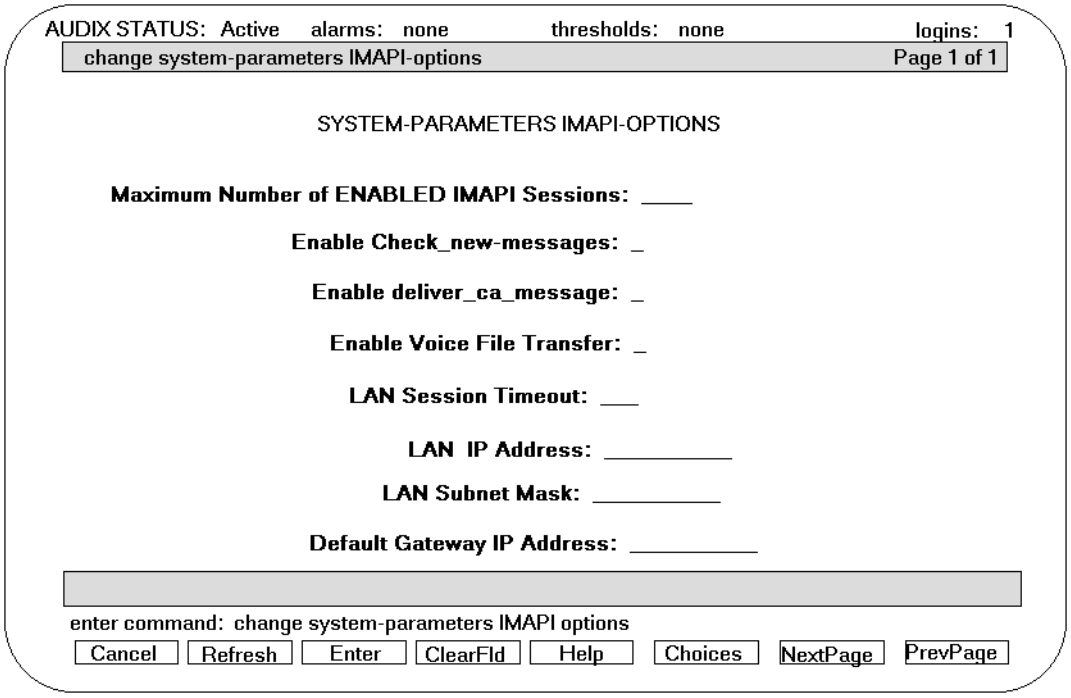
- To allow IMM to automatically inform users of new messages
- To enable the Personal Folder feature
- To have an automatic time out of 10 minutes
- To enable only 20 sessions until the full effect on the LAN can be assessed

The LAN Administrator has provided the following information:

- The Internet Protocol (IP) address is 103.85.19.16
- The Subnet Mask is 255.255.255.0
- The Gateway IP Address is 103.85.19.80

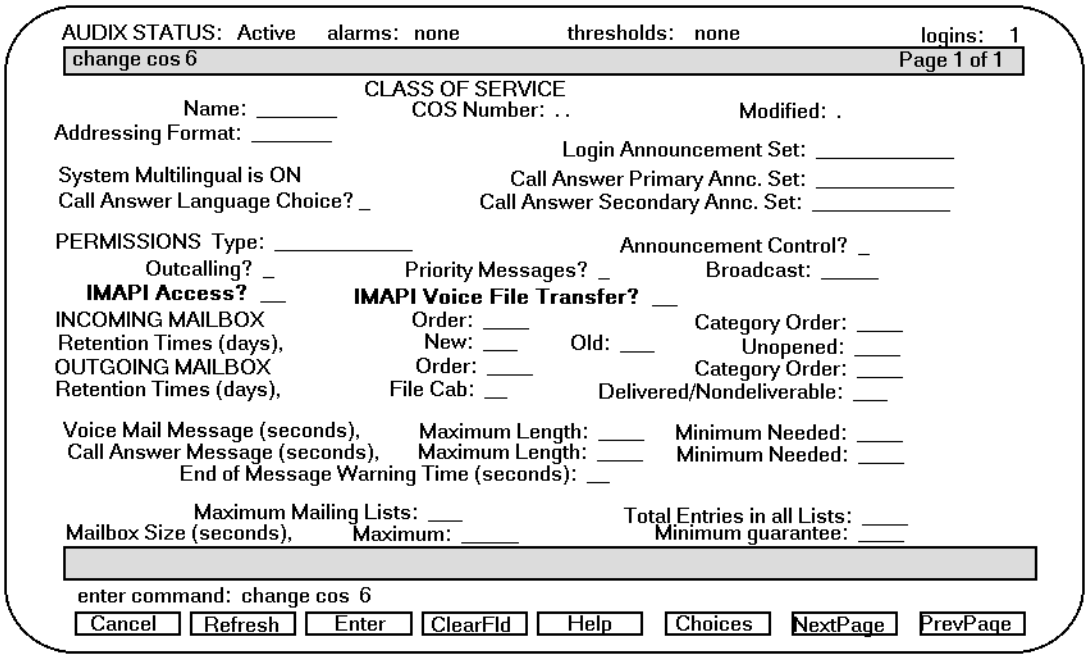
(The LAN Administrator will know what these addresses are and will be able to provide this information. The LAN Administrator will also complete the necessary administration steps in the LAN.)

Complete the fields on the screen below.



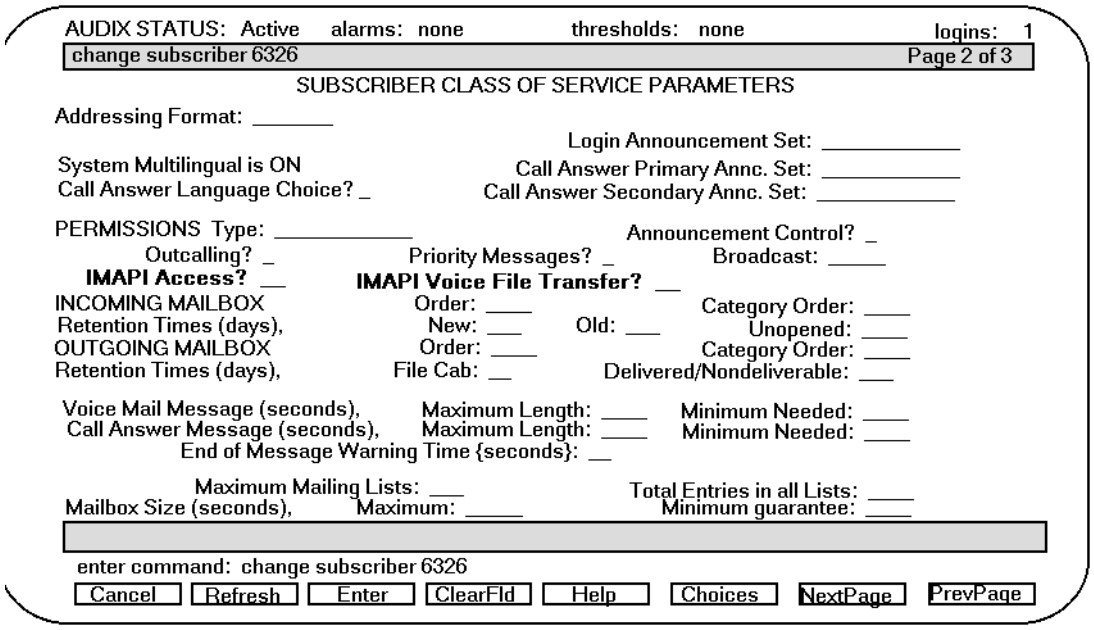
c. The customer has decided to allow all subscribers with Class of Service 6 to have IMM. Subscribers are to be allowed the Personal Folder feature.

Complete the appropriate fields on the screen below.



d. Besides all subscribers with Class of Service 6, one other subscriber (extension 6326) is to have IMM with the Personal Folder feature.

Complete the appropriate fields on the screen below.



5. What screen(s) is(are) used to test IMM?

_____

_____

6. What LAN connection types are supported for IMM? Which is the preferred type?

_____

_____

7. What networking protocol is required for IMM?

_____

_____

Please turn to page 2-15 to check your responses to the previous questions and/or exercises.

Self-Check—Language Sets

In this Self-Check you will:

- Formulate a customer benefit derived from the language set ordering change

- Explain the effect the language set ordering change has on installations and upgrades
- List the new languages provided with DEFINITY AUDIX 3.1

1. Based on information presented in Chapter 1, ''New and Enhanced Features'', formulate a customer benefit derived from the language set ordering change.

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   _____

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2. Explain the difference in the language set ordering change has on installations and upgrades.

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3. What new languages are available with DEFINITY AUDIX Release 3.1?

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Please turn to page 2-21 to check your responses to the previous questions and/or exercises.

Self-Check—Priority Designation on Call Answer

In this Self-Check you will:

- Formulate a customer benefit provided by Priority on Call Answer
- Explain how a caller designates a Call Answer call as Priority
- Complete the field applicable to the Priority on Call Answer feature given specific customer parameters

(Remember, a Call Answer call is a call directed to the DEFINITY AUDIX system through a switch feature such as Call Coverage or Call Forwarding.)

1. Based on information presented in Chapter 1, ‘‘New and Enhanced Features’’, formulate a customer benefit provided by Priority on Call Answer.

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2. How does a caller designate a Call Answer call as Priority?

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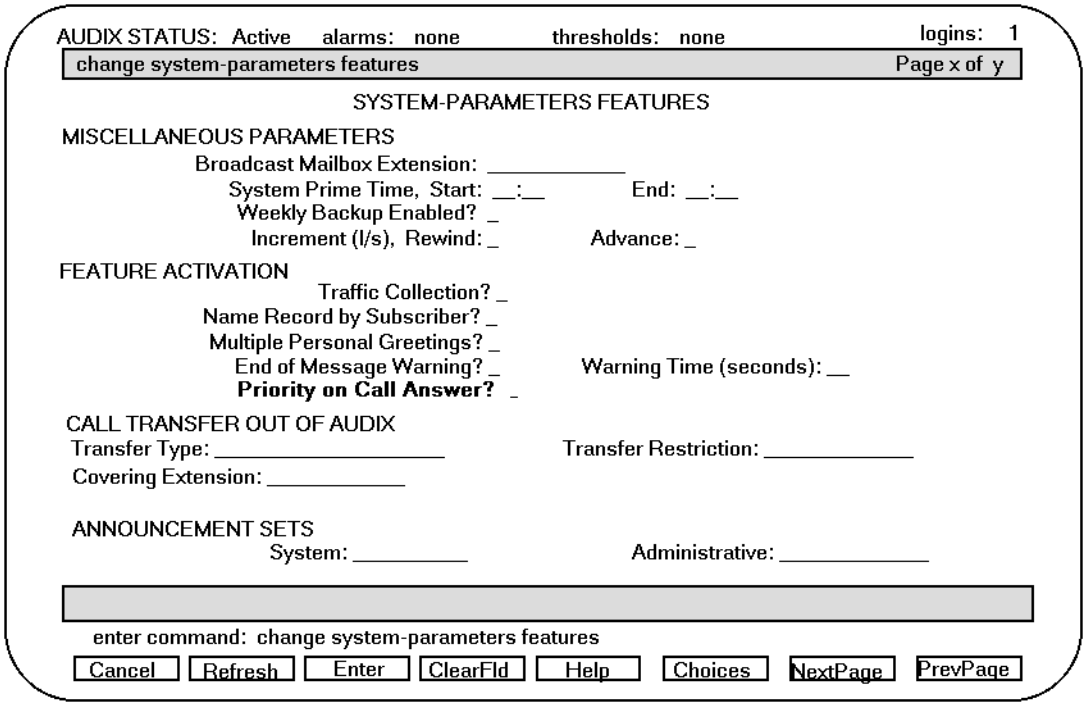
   _____

3. Complete the appropriate field on the `change system-parameters features` screen below to activate the priority on Call Answer feature.



Please turn to page 2-22 to check your responses to the previous questions and/or exercises.

Self-Check—Administrable Interdigit Timing on Received DTMFs

In this Self-Check you will:

- Formulate a customer benefit provided by Administrable Interdigit Timing on Received DTMFs
- Complete the field applicable to Administrable Interdigit Timing on DTMFs given specific customer parameters

1. Based on information presented in Chapter 1, ''New and Enhanced Features'', formulate a customer benefit provided by Administrable interdigit Timing on Received DTMFs.

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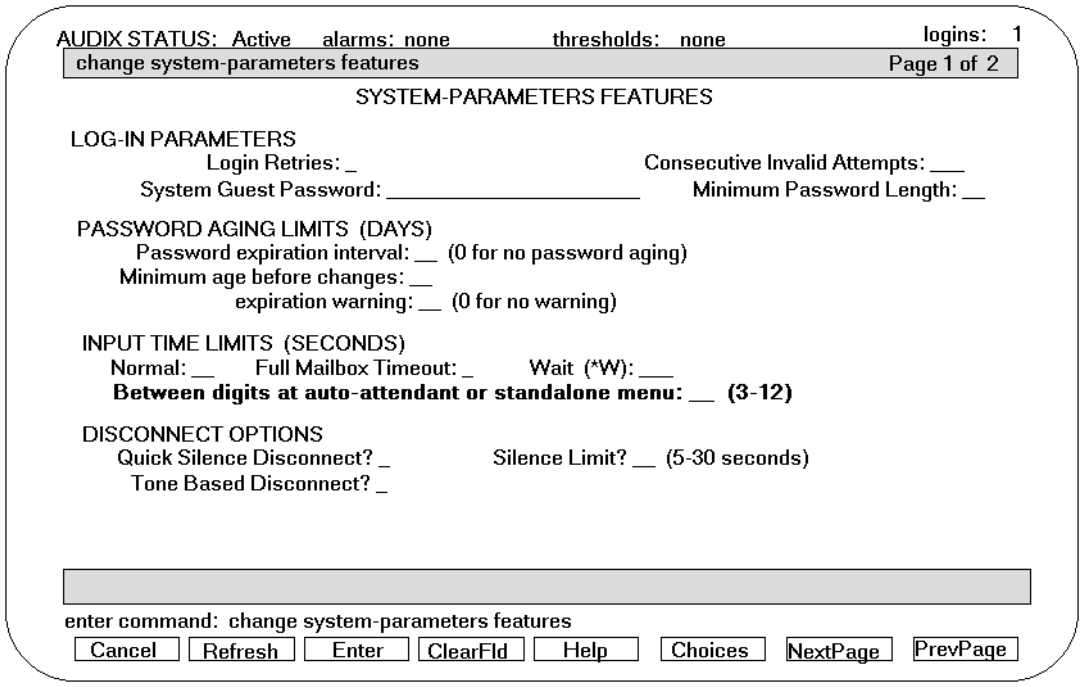
2. Complete the *Between Digits at Auto-Attendant or Standalone Menu:* field on the `change system-parameters features` screen for the following scenarios:

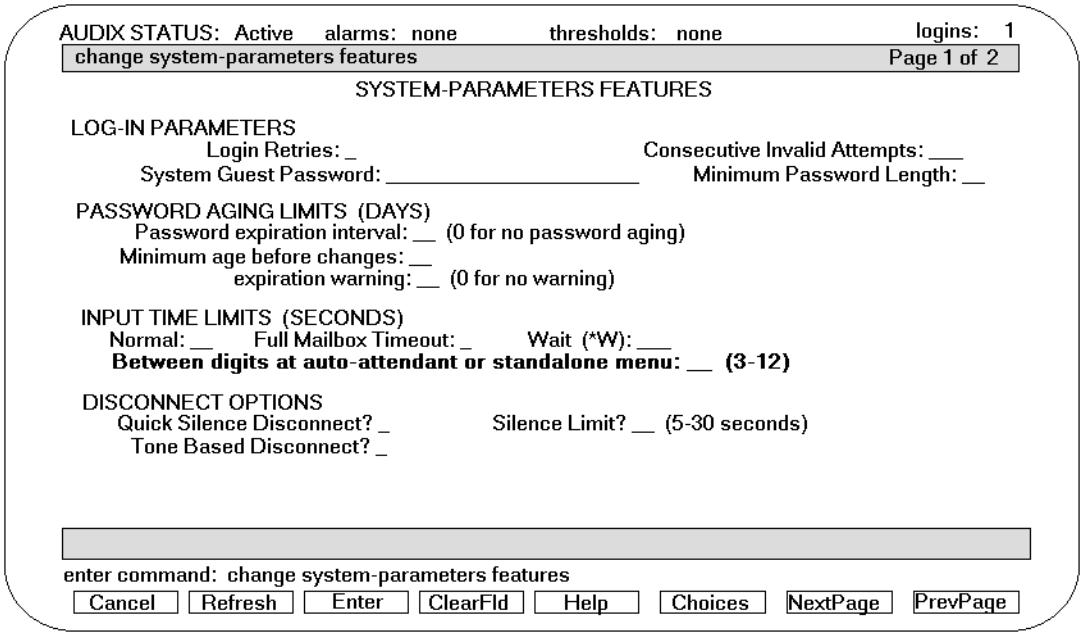
a. The calling area has mostly touch-tone phones with no complaints from the few callers with rotary phones.

   Complete the appropriate field on the screen below.



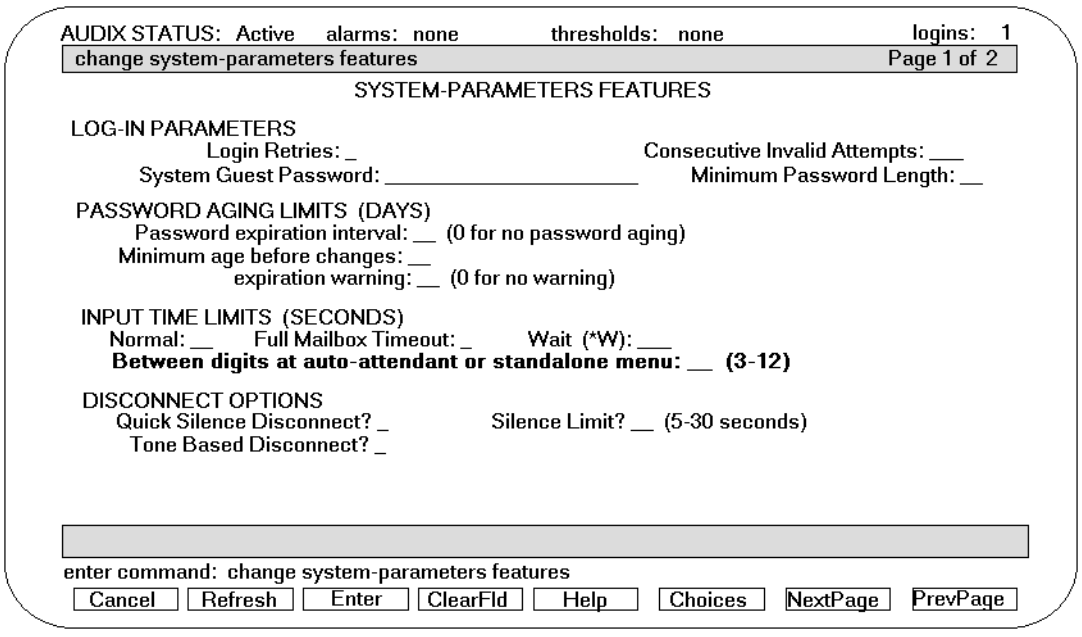
b. The calling area has mostly rotary phones and many callers have been unable to use the Automated Attendant menus.

   Complete the appropriate field on the screen below.



c. The calling area is mixed with about equal rotary and touch-tone phones. There have been a few complaints from customers with rotary phones.

   Complete the appropriate field on the screen below.



Please turn to page 2-23 to check your responses to the previous questions and/or exercises.

Self-Check—Non-Addressed Message Retention

In this Self-Check you will:

- Explain what occurs if a message sender forgets to address the message with DEFINITY AUDIX Release 3.1
- Explain what occurred if a message sender forgot to address a message prior to DEFINITY AUDIX Release 3.1

1. Explain what occurs if a message sender "forgets" to address a message with DEFINITY AUDIX Release 3.1.

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   _____

   _____

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2. Explain what occurred if a message sender "forgot" to address a message prior to DEFINITY AUDIX Release 3.1.

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   _____

Please turn to page 2-26 to check your responses to the previous questions and/or exercises.

Self-Check—Outcalling Enhancement

In this Self-Check you will:

- Formulate a customer benefit provided by the Outcalling enhancement
- Complete the field applicable to the Outcalling enhancement given specific customer parameters

1. Based on information presented in Chapter 1, ‘‘New and Enhanced Features’’, formulate a customer benefit provided by the Outcalling enhancement.

   _____

   _____

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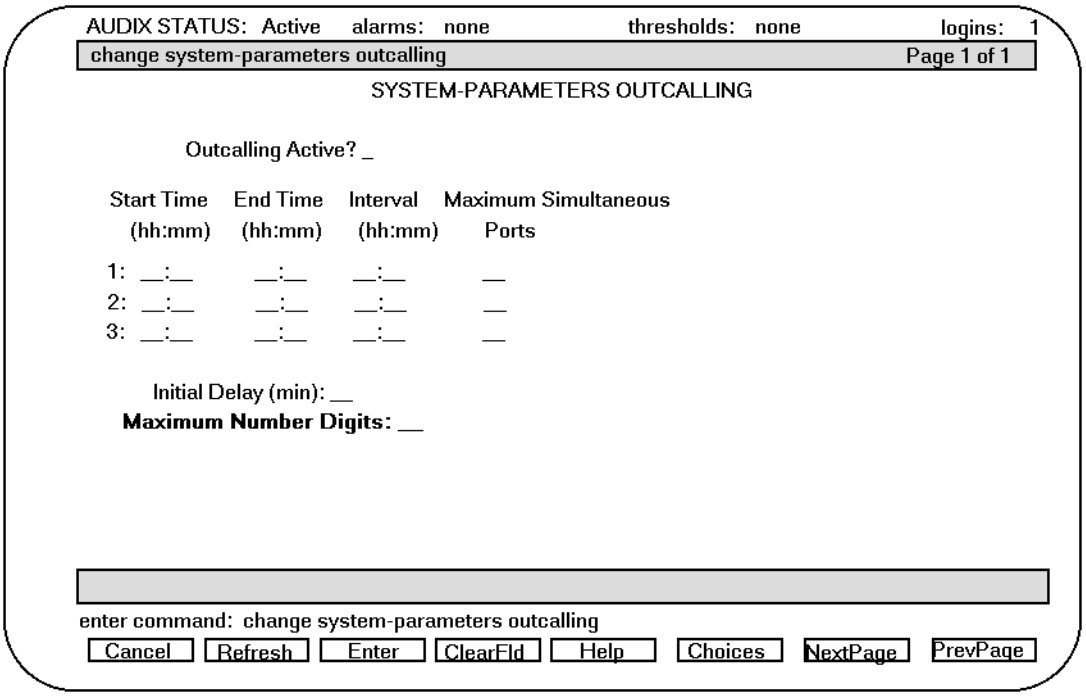
_____

2. Complete the appropriate field on the `change system-parameters outcalling` screen below for the following scenario:

   The System Administrator has received complaints from some subscribers that they are unable to have the DEFINITY AUDIX outcall to their pagers and leave a callback number. After some investigation, it is decided 45 digits are sufficient to solve the problem.



Please turn to page 2-27 to check your responses to the previous questions and/or exercises.

Self-Check—Password Aging

In this Self-Check you will:

- Formulate a customer benefit provided by Password Aging
- Explain how Password Aging affects subscribers
- Complete the fields applicable to Password Aging given specific customer parameters

1. Based on information presented in Chapter 1, ''New and Enhanced Features'', formulate a customer benefit provided by Password Aging.

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_____

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2. Explain how Password Aging affects subscribers.

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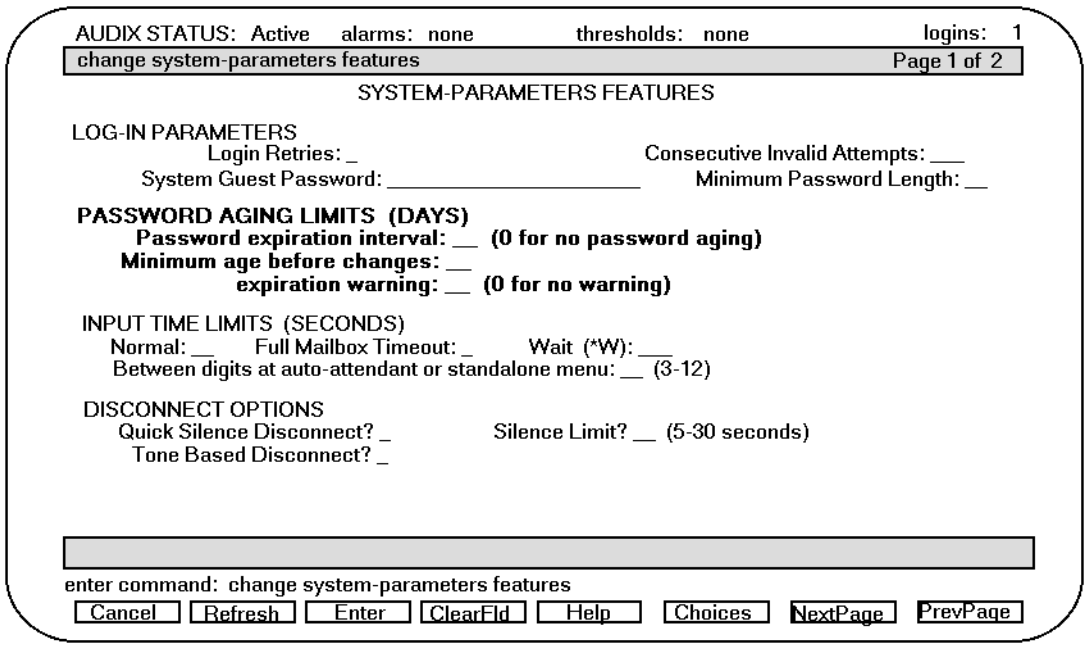
3. Complete the appropriate fields on the `change system-parameters features` and `change subscriber` screens for the following scenarios:

a. The customer has decided to activate the Password Aging feature with the following parameters:

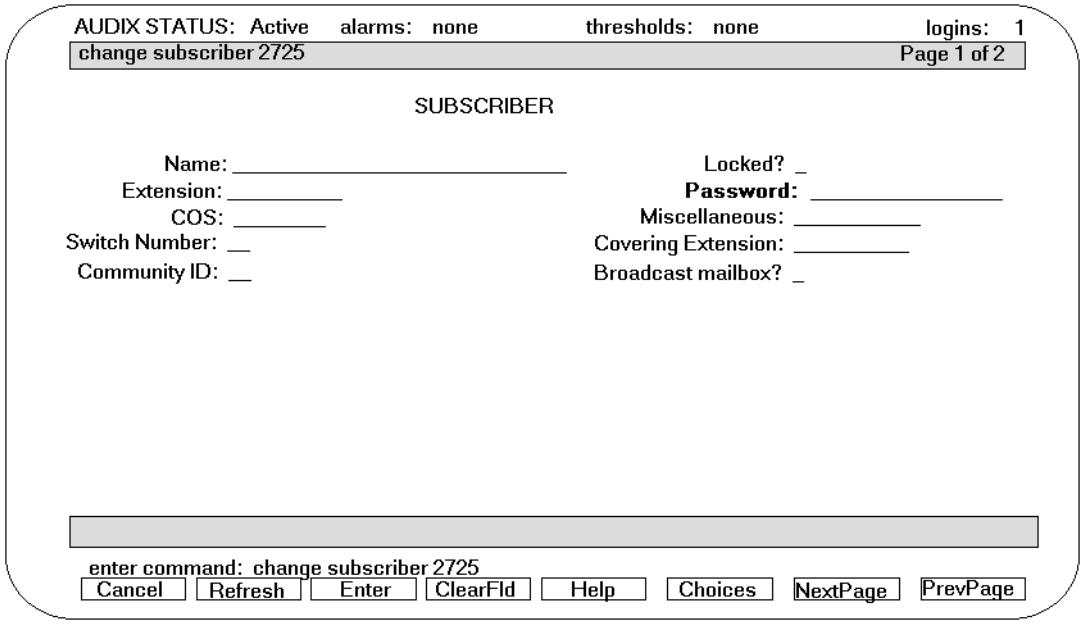
- Passwords must be changed every 45 days.
- Once a password is changed, the subscriber cannot change it again for 10 days (to keep them from immediately changing it back to the old password).
- Subscribers should hear the warning voice prompts for 8 days prior to password expiration.

Complete the appropriate fields on the screen below.



b. The System Administrator believes a hacker has figured out the password for a subscriber (extension 2725) and wants to immediately expire the password so the subscriber is forced to create a new one.

   Complete the appropriate field on the screen below.



Please turn to page 2-28 to check your responses to the previous questions and/or exercises.

Self-Check—Intuity™ Message Manager (IMM)—Answers

1. Based on information presented in Chapter 1, ‘‘New and Enhanced Features’’, formulate two customer benefits provided by IMM. (A benefit is not a specific thing, feature or process, it is a value the customer derives from the thing, feature or process.)

   Any two of the following benefits are acceptable. You may have developed others as well.

   The user can access messages in any order desired and no longer has to listen to messages in sequential order. This allows the user to "pick and choose" the messages needed at the moment.

   Messages can be annotated so that the user can immediately tell which message is the one desired. Again, the user no longer has to listen to all messages in order.

   The user can create and manipulate Mailing Lists via PC keyboard. For most users this is easier and faster than by using the telephone keypad.

The user can use the Subscriber Directory to build Mailing Lists saving much of the time of inputting extension numbers.

The user can print Mailing Lists via the PC. This allows faster checking of what a list contains when changes are contemplated.

The user can visually manipulate Multiple Personal Greetings. The phone is only necessary to record or change the greetings. This means that changing the active greetings is easier and faster.

Messages can be permanently stored on the receiver's PC floppy or hard disk. This means that important messages can be kept as long as the receiver desires.

2. Where are specific LAN and PC requirements for IMM located?

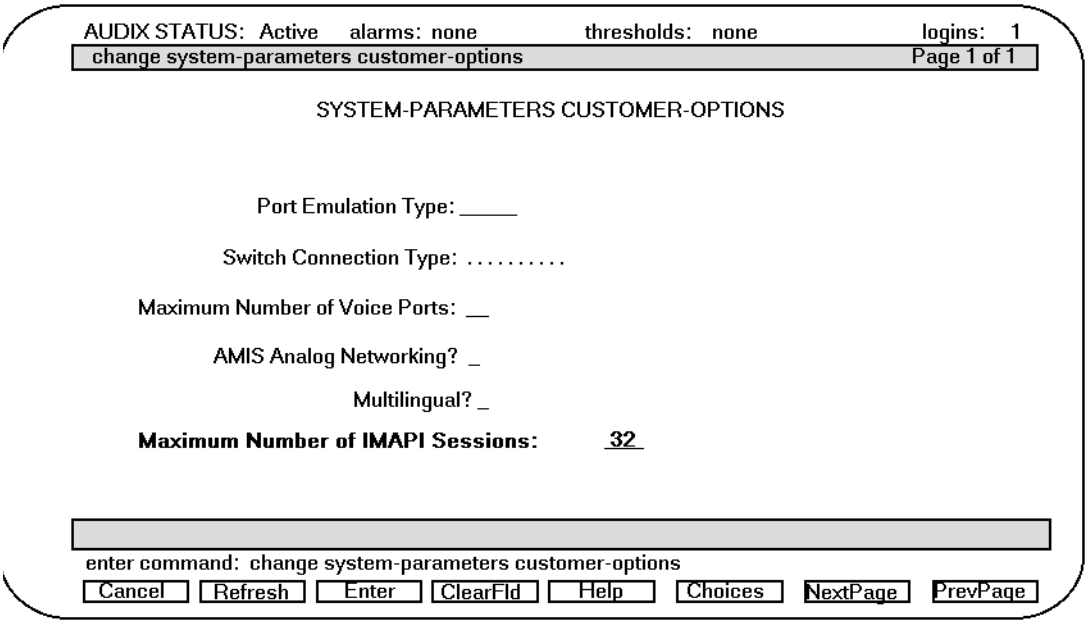
   DEFINITY AUDIX System—Feature Descriptions, 585-300-206, Issue 4 or later and Intuity Message Manager User's Guide, 585-310-725.

3. List the DEFINITY AUDIX system hardware necessary to provide IMM.

   The TN2170 Ethernet Alarm Board must replace the TN2169 Alarm Board. The Multifunction Board must be a TN566B. The new DEFINITY AUDIX R2 Alarm Board Adapter Cable (H600-353, Group 2) must replace the old Alarm Board Y-Cable (H600-353, Group 1). Prior to installation or the 3.1 upgrade, a 104A Connecting Block supplied by AT&T is mounted on the wall field where the connection to the LAN is made. A DW8 Modular Wall Cord, also provided by AT&T, connects to the Alarm Board Adapter Cable and to the 104A Connecting Block.

4. Complete the appropriate fields on the `change system-parameters customer-options`, `change system-parameters imapi-options`, `change cos`, and `change subscriber` screens for the following scenarios:

a. The customer has purchased IMM. The TSO (Technical Service Operations) group must access the DEFINITY AUDIX system with the *init* login and activate the feature. Enter the correct value in the *Maximum Number of IMAPI Sessions:* field below.



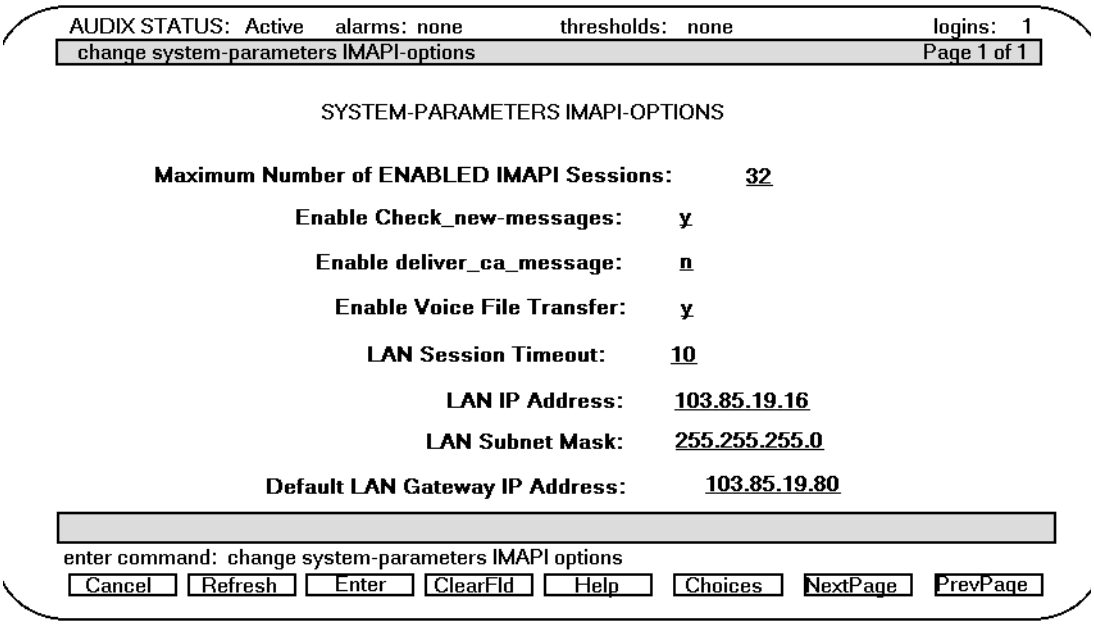
The *Maximum Number of IMAPI Sessions:* field is either **0** or **3**2. **0** in this field means the feature has not been purchased. **32** in this field means the feature has been purchased and activated.

b. The customer has purchased IMM and needs to set up the system-wide parameters in the DEFINITY AUDIX system. The customer has decided:

   - To allow IMM to automatically inform users of new messages
   - To enable the Personal Folder feature
   - To have an automatic time out of 10 minutes
   - To enable only 20 sessions until the full effect on the LAN can be assessed

   The LAN Administrator has provided the following information:

   - The Internet Protocol (IP) address is 103.85.19.16
   - The Subnet Mask is 255.255.255.0.
   - The Gateway IP Address is 103.85.19.80



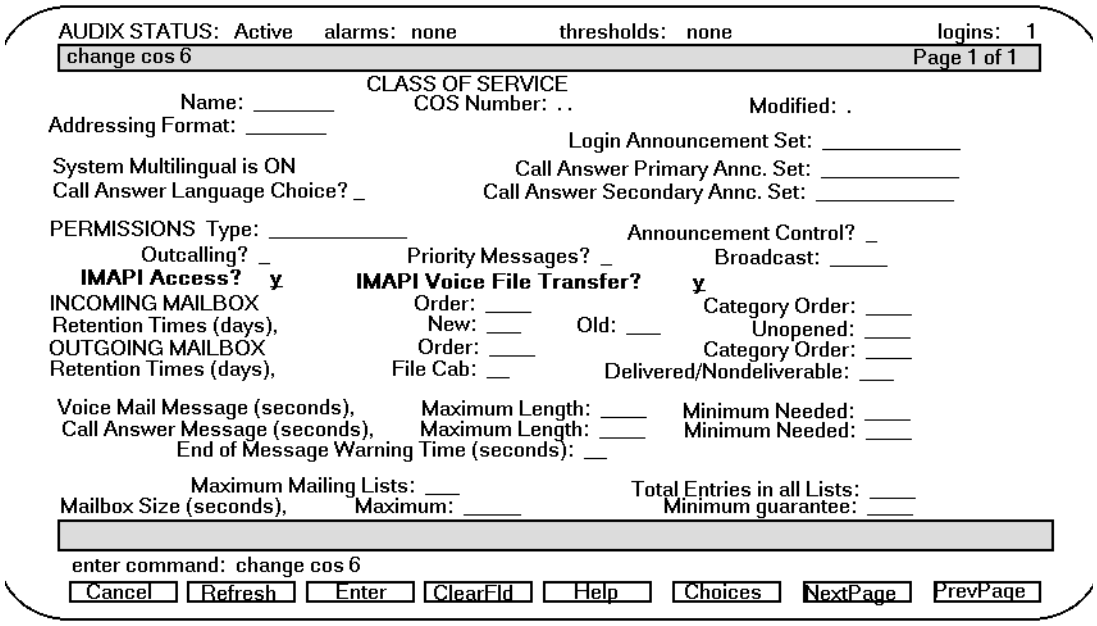
To allow users to automtatically receive notification of new messages, the *Enable Check_new_messages:* field is must be **y**.

For Release 1 of IMM, the *Enable deliver_ca_message:* field is not used. Just use the default of **n**.

To enable the Personal Folder feature, the *Enable Voice File Transfer:* field is **y**.

When entering addresses, you do not have to insert zeros at the beginning to make each segment three digits long; however, you must enter the period (.) to separate each segment. Failure to do this will cause a wrong address to be entered.

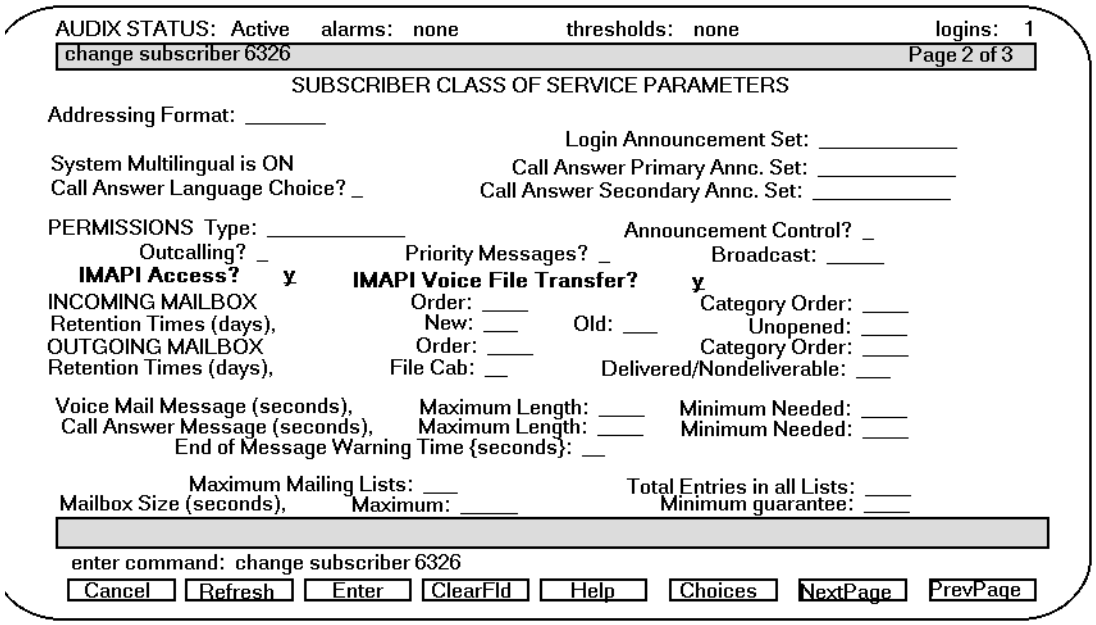
c. The customer has decided to allow all subscribers with Class of Service 6 to have IMM. Subscribers are to be allowed the Personal Folder feature.



To enable IMM for a Class of Service, the *IMAPI Access?* field must be **y**.

To enable the Personal Folder feature for a Class of Service, the *IMAPI Voice File Transfer?* field must be **y**.

d. Besides all subscribers with Class of Service 6, one other subscriber (extension 6326) is to have IMM with the Personal Folder feature.



5. What screen(s) is(are) used to test IMM?

   `test lan`, `test lan long`, and `test lan` *`nnn.nnn.nnn.nnn`*

6. What two basic LAN connections types are supported for IMM? Which is the preferred type?

   10baseT Hub (preferred) and Ethernet Coaxial Cable

7. What networking protocol is required for IMM?

   TCP/IP

You have now completed the Self-Check for IMM. More information can be found in *DEFINITY AUDIX System—Feature Descriptions*, 585-300-206 and *Intuity Message Manager User's Guide*, 585-310-725.

Basic information on LANs can be obtained from *Data Communications and Distributed Networks* by Uyless D. Black. *TCP/IP Network Administration* by Craig Hunt can provide good information for LAN administrators.

Self-Check—Language Sets—Answers

1. Based on information presented in Chapter 1, ''New and Enhanced Features'', formulate a customer benefit derived from the language set ordering change.

   You may have created additional benefits.

   Customers receive the one language of choice that best fits their needs. Any additional language sets desired can then be purchased. Therefore, each system is customized to the customer's actual needs.

2. Explain the difference in the language set ordering change has on installations and upgrades.

   The Technician now loads a minimum of two tapes - the generic software and the language of choice. The Technician is told in the documentation and by system prompts to insert the language tape at the appropriate time. If the customer has purchased additional languages, one additional tape per language must be loaded.

3. What new languages are available with DEFINITY AUDIX Release 3.1?

   Dutch, German, Portuguese

Additional languages are being developed and will be announced when completed. These currently are French-Parisenne, Japanese, and Polish.

You have now completed the Self-Check for the Language Sets. More information on this change can be found in *DEFINITY AUDIX System—System Description*, 585-300-205.

Self-Check—Priority Designation on Call Answer—Answers

1. Based on information presented in Chapter 1, ''New and Enhanced Features'', formulate a customer benefit provided by Priority on Call Answer.

   Any of the following benefits are acceptable. You may have created additional benefits.

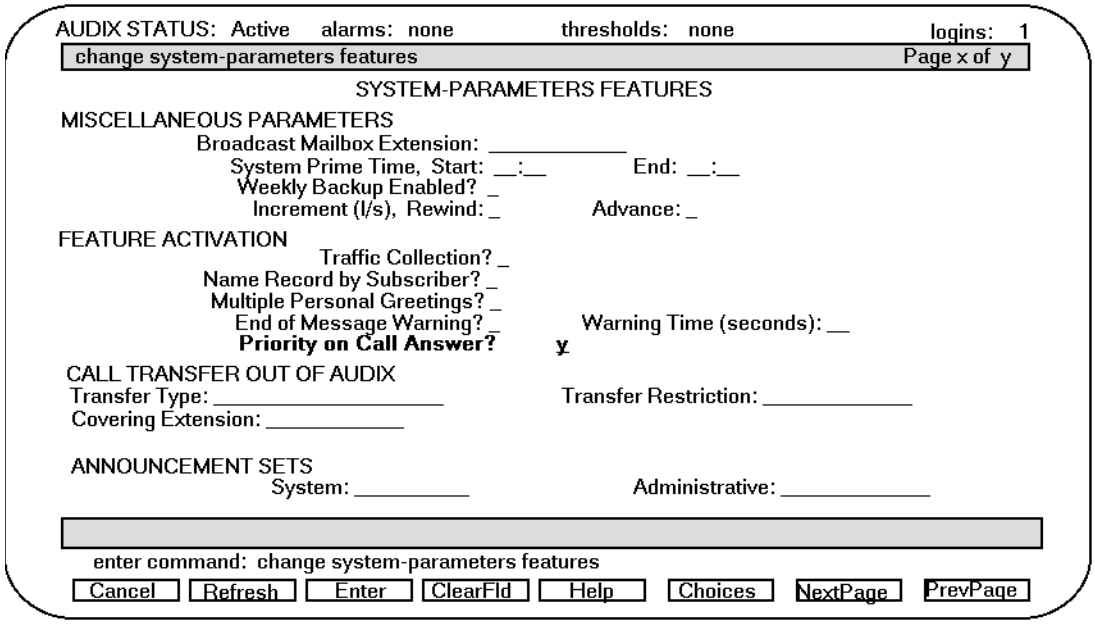
   Priority on Call Answer allows callers to designate their message as Priority, which places that call at the front of other non-priority messages left for the called party.

   When Priority on Call Answer is activated, the Call Answer message generates an outcall if Priority Outcalling is also activated.

2. How does a caller designate a Call Answer call as Priority?

   The caller is presented with the available options, including to press 2 to make the message priority.To send the message, the caller presses #.

3. Complete the appropriate field on the `change system-parameters features` screen below to activate the priority on Call Answer feature.



You have now completed the Self-Check for Priority Designation on Call Answer. More information of this feature can be found in *DEFINITY AUDIX System—Feature Descriptions*, 585-300-206.

Self-Check—Administrable Interdigit Timing on Received DTMFs—Answers

1. Based on information presented in Chapter 1, ''New and Enhanced Features'', formulate a customer benefit provided by Administrable Interdigit Timing on Received DTMFs.

   Any of the following benefits are acceptable. You may have created others.

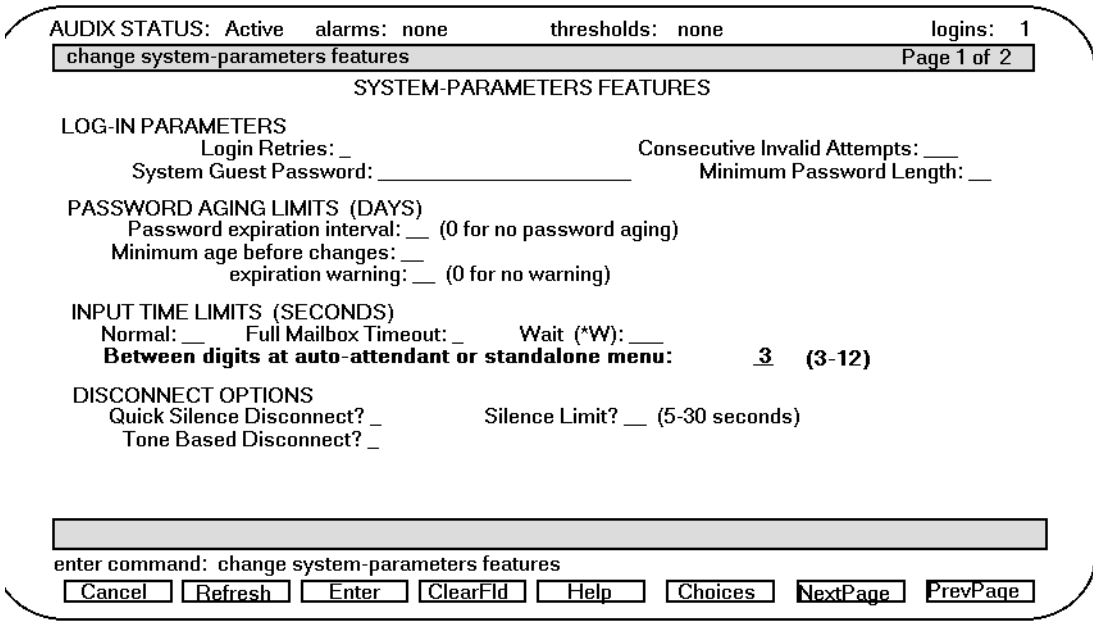
   The timing delay can be administrated so System Administrators can find the right number of seconds for their customers (using actual user studies). This assures the appropriate timing for each customer.

   This feature is particularly valuable in areas of the world, such as India, where a large percentage of the phones are rotary. Customers can then use all the features provided with the system.

   Using the Administrable Interdigit Timing on Received DTMFs feature can cut down on the number of calls timing out to a paid attendant.

2. Complete the *Between Digits at Auto-Attendant or Standalone Menu:* field on the `change system-parameters features` screen for the following scenarios:

a. The calling area has mostly touch-tone phones with no complaints from the few callers with rotary phones.



In the scenario above, leave the default of 3 seconds as there are no problems.

b. The calling area has mostly rotary phones and many callers have been unable to use the Automated Attendant menus.

```
AUDIX STATUS:  Active    alarms:  none          thresholds:  none                    logins:  1
 change system-parameters features                                                  Page 1 of 2
                              SYSTEM-PARAMETERS FEATURES

 LOG-IN PARAMETERS
              Login Retries: _                          Consecutive Invalid Attempts: ___
        System Guest Password: ____________________        Minimum Password Length: __

 PASSWORD AGING LIMITS  (DAYS)
        Password expiration interval: __  (0 for no password aging)
      Minimum age before changes: __
                 expiration warning: __  (0 for no warning)

 INPUT TIME LIMITS  (SECONDS)
     Normal: __      Full Mailbox Timeout: _       Wait  (*W): ___
     Between digits at auto-attendant or standalone menu:          6    (3-12)

 DISCONNECT OPTIONS
     Quick Silence Disconnect? _          Silence Limit? __  (5-30 seconds)
      Tone Based Disconnect? _

enter command:  change system-parameters features
 Cancel  Refresh  Enter  ClearFld  Help  Choices  NextPage  PrevPage
```

Change to 5 or 6 seconds and then check to see if this is acceptable to most callers.

c. The calling area is mixed with about equal rotary and touch-tone phones. There have been a few complaints from customers with rotary phones.

```
AUDIX STATUS:  Active    alarms:  none          thresholds:  none                    logins:  1
 change system-parameters features                                                  Page 1 of 2
                              SYSTEM-PARAMETERS FEATURES

 LOG-IN PARAMETERS
              Login Retries: _                          Consecutive Invalid Attempts: ___
        System Guest Password: ____________________        Minimum Password Length: __

 PASSWORD AGING LIMITS  (DAYS)
        Password expiration interval: __  (0 for no password aging)
      Minimum age before changes: __
                 expiration warning: __  (0 for no warning)

 INPUT TIME LIMITS  (SECONDS)
     Normal: __      Full Mailbox Timeout: _       Wait  (*W): ___
     Between digits at auto-attendant or standalone menu:          6    (3-12)

 DISCONNECT OPTIONS
     Quick Silence Disconnect? _          Silence Limit? __  (5-30 seconds)
      Tone Based Disconnect? _

enter command:  change system-parameters features
 Cancel  Refresh  Enter  ClearFld  Help  Choices  NextPage  PrevPage
```

Change to **5** or **6** seconds and then check to see if this is acceptable to most callers. There may be some complaints from callers with touch-tone phones about the "delay" in processing their input.

You have now completed the Self-Check for Administrable Interdigit Timing on Received DTMFs. More information on this feature can be found in *DEFINITY AUDIX System—System Description*, 585-300-205.

Self-Check—Non-Addressed Message Retention—Answers

1. Explain what occurs if a message sender "forgets" to address a message with DEFINITY AUDIX Release 3.1.

   Voice prompts tell the message sender the message was not addressed and asks for input.

2. Explain what occurred if a message sender "forgot" to address a message prior to DEFINITY AUDIX Release 3.1.

   The message was automatically deleted and a voice prompt was heard indicating the message was deleted. The sender then had to re-record the message.

You have now completed the Self-Check for Non-Addressed Message Retention. More information on this feature can be found in *DEFINITY AUDIX System—System Description*, 585-300-205.

Self-Check—Outcalling Enhancement—Answers

1. Based on information presented in Chapter 1, ‘‘New and Enhanced Features’’, formulate a customer benefit provided by the Outcalling enhancement.

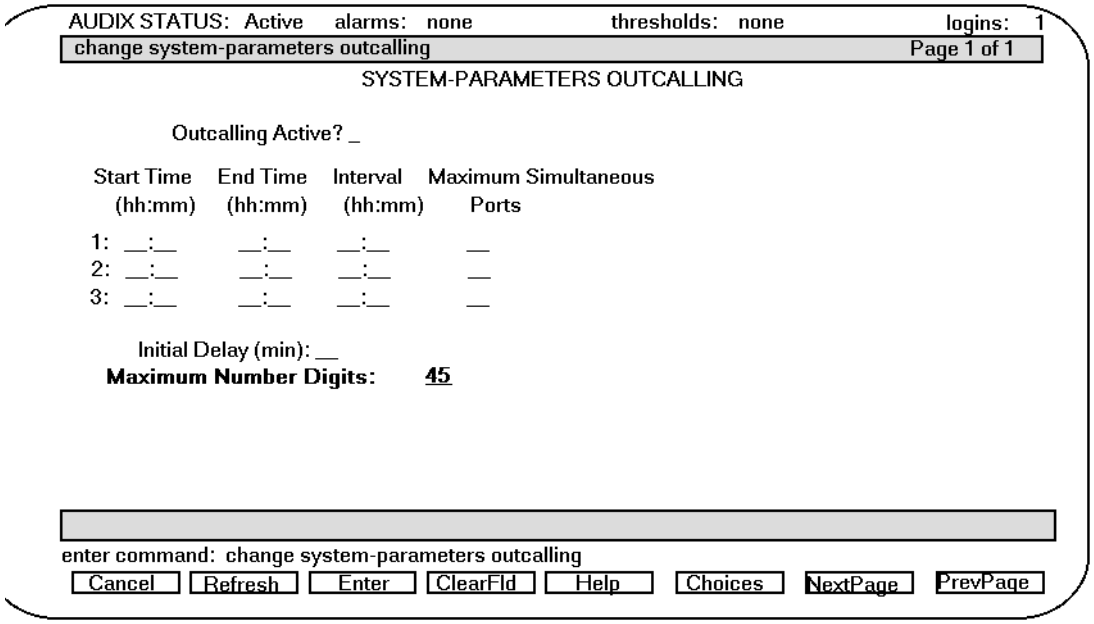
   Any of the following benefits are acceptable. You may have created others.

   Up to 60 digits may be programmed for the outcalling dial string, which allows the subscriber to outcall to a paging service and enter a callback number.

   A # can be embedded anywhere in the outcalling dial string allowing outcalls to radio paging services, such as SkyPager.

2. Complete the appropriate field on the `change system-parameters outcalling` screen below for the following scenario:

The System Administrator has received complaints from some subscribers that they are unable to have the DEFINITY AUDIX outcall to their pagers and leave a callback number. After some investigation, it is decided 45 digits are sufficient to solve the problem.



You have now completed the Self-Check for Enhanced Outcalling. More information on this feature can be found in *DEFINITY AUDIX System—System Description*, 585-300-205.

Self-Check—Password Aging—Answers

1. Based on information presented in Chapter 1, ''New and Enhanced Features'', formulate a customer benefit provided by Password Aging.

   Any of the following benefits are acceptable. You may have created others.

   Password Aging provides for increased system security by forcing subscribers to periodically change their passwords.

   The Password Aging interval is controlled by the System Administrator who can force an individual subscriber or all subscribers to create a new password immediately if a special security need exists.

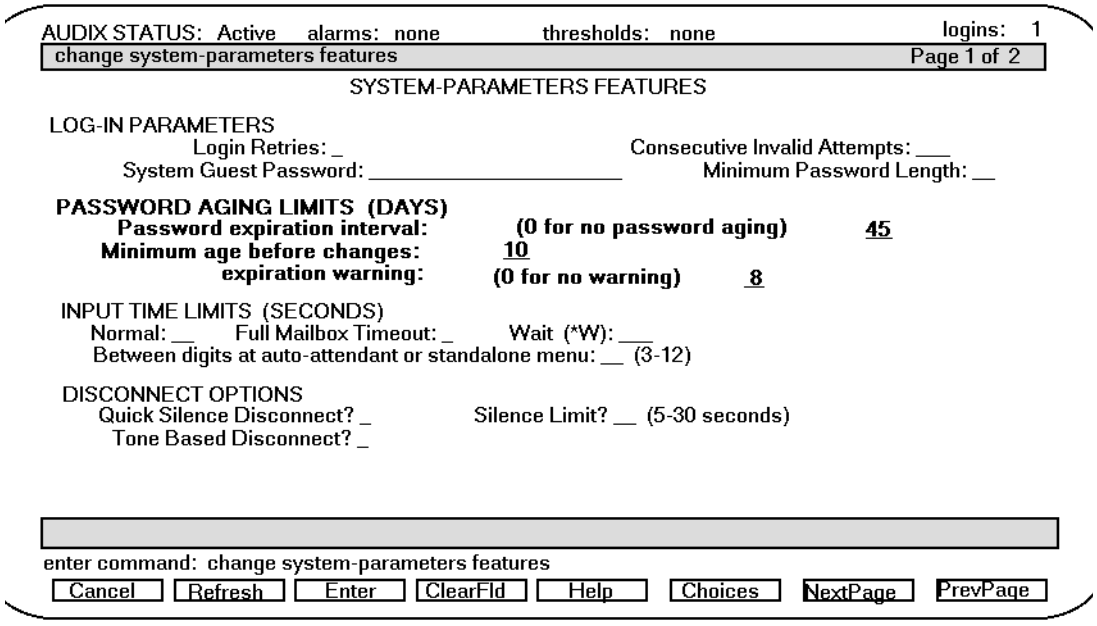
2. Explain how Password Aging affects subscribers.

   After logging in, subscribers will periodically hear a voice prompt telling them their passwords are about to expire and to create new ones.

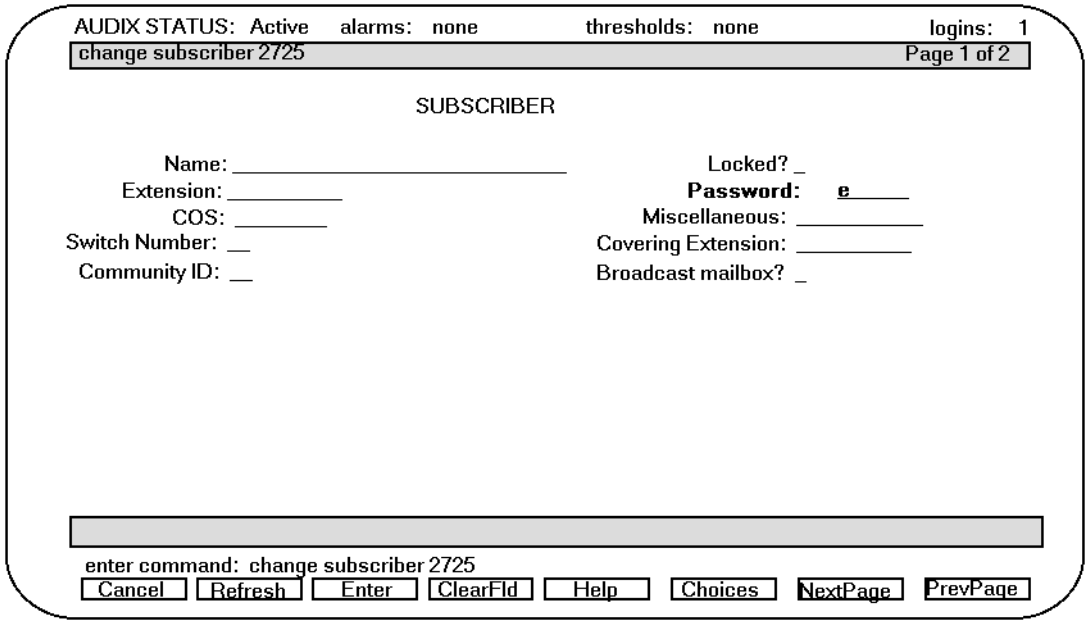
3. Complete the appropriate fields on the `change system-parameters features` and `change subscriber` screens for the following scenarios:

a. The customer has decided to activate Password Aging with the following parameters:

- Passwords must be changed every 45 days.
- Once a password is changed, the subscriber cannot change it again for 10 days (to keep them from immediately changing it back to the old password).
- Subscribers should hear the warning voice prompts for 8 days prior to password expiration.



b. The System Administrator believes a hacker has figured out the password for a subscriber (extension 2725) and wants to immediately expire the password so the subscriber is forced to create a new one.



If you desire to immediately expire the password for all subscribers simultaneously, change the entry in the *PASSWORD AGING LIMITS (DAYS) Password Expiration Interval:* field on the `change system-parameters features` screen to **0** and press ENTER . At this point, Password Aging is turned off. You must turn it back on to immediately expire all passwords. Then change the field back to the number of days normally desired and press ENTER . This will immediately expire all passwords. All subscribers will hear a message to change their passwords the next time they log in.

You have now completed the Self-Check for the Password Aging feature. More information on this feature can be found in *DEFINITY AUDIX System—System Description*, 585-300-205.

Changes, Improvements, Notes

A

This appendix contains changes, improvements, and notes that apply to the R3.1 DEFINITY AUDIX system. These changes will affect administrators, and services personnel who maintain the system.

Administration Notes

The following notes apply to administrators.

Change Machine Screen

The screen and field help were changed to reflect the true restrictions on the *machine name* field. When IMAPI is activated, the local machine can be listed with 1-8 characters. If IMAPI is not activated, the local machine can have 1-10 characters.

Add/Change Subscriber Screen

When adding a subscriber with an invalid announcement set, the user is now informed of an invalid announcement identification. Previously, this was not checked.

Previously, if the *Multilingual* field on the *subscriber* screen was *OFF*, the *Call Answer Language Choice* field could not be changed to **n**. Now, it can be set to **n**.

List Measurements Screen

The pages for the *list measurements* screen now line up when you page through from hour to hour, or day to day.

Administration Log

The administration log now displays the sender and recipient extension numbers for undeliverable message (*undm*) to a subscriber, which was removed prior to delivery of the message.

Announcement Administration

When an announcement that has a comment with a comma is displayed on the *display announcement* screen, the comment is separated at the comma to the next line. The comma should be ignored.

Changes Affecting Subscribers

Several customers complained about touch-tones not being heard during some announcements. The out-of-band energy threshold for DTMF detection during announcement playback was lowered, which should resolve the problem without allowing the chance for talk-off.

Users could sometimes lock up a session by rapidly pressing the touch-tone keys for backup and slowdown. This problem has been resolved.

Maintenance Notes

The following changes pertain to maintenance personnel.

Alarm Origination Test Delay

If a test is active, *test alarm-origination* waits, putting the test in the background. The wait was increased from 15 to 60 seconds. Indications of how the form work also have been integrated into the screen.

Upgrade Terminal Setting

Previously, upgrades stopped in the middle when the checks for even parity were being done. The upgrade has been changed to not check for parity.

Problem Areas

The following problems may affect maintenance personnel and those who upgrade a DEFINITY AUDIX system.

Switch Maintenance

During a test board *<slot-location> long* (the slot location is where the R2.0 Multifunction board resides in the switch), test #200 will abort because the neon Message Waiting Indicator is not administered. This is as designed.

Installation/Upgrade

An upgrade does not prompt for the new announcements required for 3.1. If you are dealing with large databases, no indication of progress is provided and the upgrade may take a long time.

Save/Restore

Save/restore of corrupt SUP files may not work in all cases. Verify your restore output to detect this ahead of time. You should upgrade the system if problems are detected.

Save Voice will occasionally fail when voice operations are active on the system. The user should save in *OA&M* mode or *busy out* the voice group prior to the save.

Platform/Operating System

Two types of memory parity non-maskable interrupts have been observed. They will result in a reboot of the system.

Tape Management

Certain conditions causes the tape system to lose interrupts under load. This results in failed backups and failure to restore. Tape medium errors also occur due to this, resulting in a minor alarm. The tape must be changed and new backups saved

Glossary

Numerics

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)
The hardware platform (TN2169) which 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 Intuity Message Manager.

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.

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.

Application Program Interface
A set of software calls used to access functions and services within another application or system.

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. System terminals may use a Z3A1 or Z3A4 ADU.

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.

Audio Session Control (ASC)
The capability of DEFINITY AUDIX's Application Program Interface (API) to establish a call to a client's telephone to be used as an audio channel for messaging functions requiring an audio channel.

AUDIX Administration and Data Acquisition Package (ADAP)
A software package which 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. The backup filesystem may be copied back (restored) if the active version is damaged (corrupted) or lost.

Balun
A connector used between coaxial and twisted pair wires.

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.

Business Communications Terminal (BCT)
The recommended terminal for system maintenance or administration.

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 CALC 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 80386SX 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).

Client
The user of an application such as Message Manager. The client application makes demands demands of DEFINITY AUDIX server by calling functions in a local client application program interface.

Command Mode
A system state 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 switch-link 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. The control messages 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 is connected to the switch via analog-line card emulation and a digital connection.

D

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 is connected to the switch via digital line card emulation.

Digital Signal Processor (DSP)
Programmed RAM chips on the Multifunction board that provide signaling, power-level control, speech coding, and data processing.

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.

Ethernet Coaxial Cable
Two-conductor cable used for information transfer requiring large bandwidths. One solid conductor is suspended in the center of, and insulated from, the other tubular conductor.

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)
The circuitry on the Multifunction board which 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 which 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

Gateway IP Address
A Local Area Network address assigned by the LAN manager. It is the address to which all unknown addresses are sent for resolution.

Generic Tape
A copy of the standard software and Standalone Tape Utilities 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.

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

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 analog 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
The inter-integrated circuit (I2C) bus that provides connectivity between the Alarm board and the Multifunction board.

INTUITY Message Manager
A Windows-based application that uses the DEFINITY AUDIX system as a server on a local area network (LAN) and provides direct access to the DEFINITY AUDIX mailbox, its contents and operations via a PC. Subscribers use a mouse to point and click on icons or pull-down menus.

L

Leave Word Calling (LWC)
A switch feature that allows the calling party to leave a standard (nonvoice) message for the called party using a feature button or dial access code.

Light Emitting Diode (LED)
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.

Liquid Crystal Display (LCD)
The 10-character alphanumeric display on the DEFINITY AUDIX faceplate panel that automatically shows status of the system including alarms.

Local Area Network (LAN)
The System 75 packet bus. Also, the 10baseT hub or Ethernet coaxial cable connection between DEFINITY AUDIX and PC clients when DEFINITY AUDIX is the server for software applications such as Message Manager..

Local Maintenance Terminal (LMT)
A display terminal located near the DEFINITY AUDIX system and the switch. It is temporarily attached to the Multifunction board via a cable 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

Mailbox
A portion of disk memory given to each subscriber for creating and storing outgoing and incoming messages.

Message Manager
Used for retrieval and display of message headers, addressing to lists, managing personal greetings, and for creating, forwarding, and replying to Voice Mail messages.

Message-Waiting Lamp
An LED on a telephone that alerts subscribers to new messages.

Modem
A modulator/demodulator used for transmitting analog signals across phone lines.

Multifunction Board (MFB)
The hardware platform (TN566B) which holds the central processing unit, controllers, memory devices, and signal processors that make a DEFINITY AUDIX system operational.

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 multifunction board (MFB) as a TN566B (AUDIX) circuit pack. With native mode support, the switch reserves five slots for the DEFINITY AUDIX assembly, and 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 slot is provisioned as a TN754 (for the DP integration mode) or as a TN746B (for the CL integration mode), the five slots occupied by the DEFINITY AUDIX assembly are not reserved, and MFB alarms are reported as alarms for a TN754 or TN746B.

Nonvolatile Random Access Memory (NVRAM)
A battery-backed RAM on the Multifunction board that retains data through loss of power.

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.

Public Function
Any activity that can be performed without logging into a session that is available to the public. The user need not be a subscriber.

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.

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.

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.

Session
The period of time during which a subscriber is logged into the DEFINITY AUDIX system, via the LAN or via the telephone interface. The actual time between login and logoff. The subscriber might not be actively using the application.

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 and disk drives.

Standalone Tape Utility (STU)
A software utility with options that include disk drive initialization, copying files from a generic tape onto the customer's disk, and map partition modification.

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

Technical Service Organization
The Tier 3 services group who remotely maintains and diagnoses a DEFINITY AUDIX system using a set of forms generated on a computer terminal.

Telecommuncations Device for the Deaf (TDD)
A feature providing Call Answering and Personal Greeting capabilities to the hearing-disabled. The announcement set responds to Baudot tones which are input from a special keypad.

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.

Transmission Control Protocol/Internet Protocol
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.

Twisted Pair Cable
Ethernet telephone cable using a baseband of 10 Mbits/second (10BaseT). It consists of four pair, each pair twisted together. End-to-end connectivity is limited to approximately 300 feet.

U

Update
A limited incremental change on an existing release involving software only. An update is usually designated by incrementing the release by a dot issue, for example moving from 3.0 to 3.1.

Upgrade
The replacement of one release with a new release. This may involve software, flashware, hardware, and/or data. An update is usually designated by incrementing the release, for example moving from 3.0 to 4.0.

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